Assessment of Options for Revision of the Regulation Establishing the European Pollutant Release and Transfer Register (E-PRTR)

Final Report

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List of Abbreviations

AEL	Associated emission level
BAT	Best Available Techniques
BAT-C	Best Available Techniques Conclusions
BREF	Best Available Techniques Reference Document
CA	Competent authority
CEMS	Continuous emissions monitoring systems
CMR	Carcinogenic, mutagenic or reprotoxicant
CMS	Chemical management system
EGD	European Green Deal
EMAS	Eco-Management and Audit Scheme
E-PRTR	European Pollutant Release and Transfer Register
EPER	European Pollutant Emission Register
EU-ETS	European Union Emissions Trading System
GHG	Greenhouse gas
HFC	Hydrofluorocarbons
IA	Impact assessment
IED	Industrial Emissions Directive
INSPIRE	Infrastructure for Spatial Information in Europe
IPPCD	Integrated Pollution Prevention and Control Directive
LCP	Large combustion plant
LNG	Liquified Natural Gas
MCA	Multi-criteria analysis
MCPD	Medium Combustion Plant Directive
MEA	Multilateral environmental agreement
MS	Member State
MWEI	Management of Waste from Extractive Industries Directive
NECD	National Emission Ceilings Directive
NGO	Non-governmental organisation
NMVOC	Non-methane volatile organic compounds
ODS	Ozone depleting substances
OECD	Organisation for Economic Co-operation and Development
OPC	Open public consultation
PBT	Persistent, bioaccumulative and toxic
PCB	Polychlorinated biphenyl
PCDD	Polychlorinated dibenzodioxin
PCDF	Polychlorinated dibenzofuran
PFAS	Per- and polyfluoroalkyl substances
PFC	Perfluorocarbon
PM	Particulate matter
PMOC	Persistent mobile organic chemicals
PMT	Persistent, mobile and toxic
POPs	Persistent organic pollutants
PRTR	Pollutant Release and Transfer Register
REFIT	Regulatory Fitness and Performance Programme
SVHC	Substance of very high concern
SWD	Staff Working Document
TSS	Total suspended solids
TVOC	Total volatile organic compounds
UNECE	United Nations Economic Commission for Europe
UWWTD	Urban Waste Water Treatment Directive

vPvB	Very persistent and very bioaccumulative
vPvM	Very persistent and very mobile
WFD	Water Framework Directive
WISE	Water Information System for Europe

Abstract

The E-PRTR Regulation established a database on releases and transfers of pollutants from the EU's largest (agro-)industrial activities, with the objective of providing public access to environmental information to enable informed participation in decision-making. The evaluation of the E-PRTR Regulation identified the following areas for potential refinement: activities and activity thresholds, pollutants and reporting thresholds, information to track progress towards the circular economy and the decarbonisation of industry, reporting modalities, access to information and releases from diffuse sources and products. This study has been carried out following the Better Regulation Impact Assessment guidelines. A package of four policy options and 29 measures is put forward to increase effectiveness of the Regulation and its alignment with the Industrial Emissions Directive and other pieces of environmental legislation, to expand its scope in terms of both activities and pollutants, to allow for benchmarking of environmental performance of facilities and to better support the decarbonisation of industrial activities. The increase in administrative burden for industrial operators and authorities is moderated by the adoption of top-down reporting for the intensive livestock and the aquaculture sectors. Positive human health and environmental impacts are expected to be generated indirectly by providing an incentive to improve facilities' performance.

1 Introduction: political and legal context

In light of European Union's ambition to reduce environmental impacts declared in the European Green Deal (EGD)[1] and the Circular Economy Action Plan[2], industrial activities are more than ever needed to contribute to the transformation into a sustainable economy. Understanding and benchmarking the impacts of these activities through the data provided by the European Pollutant Release and Transfer Register (E-PRTR) is crucial for engaging stakeholders and driving action.

The main objective of the E-PRTR Regulation[3] is to empower European citizens with environmental data that allows informed participation in environmental decision-making on the EU's largest (agro-)industrial activities. The Commission announced in the EGD that it would aim to improve access to justice in environmental matters, and the E-PRTR should form an important dataset for this activity. Moreover, the EGD commits the Commission to revise EU measures to address pollution from large industrial installations and make them consistent with climate, energy and circular economy policies whilst contributing to steering the EU towards zero pollution.

The E-PRTR also transposes the Kyiv Protocol[4] for the EU. The Kyiv Protocol was the first legally binding international instrument on pollutant release and transfer registers. Its objective is "*to enhance public access to information through the establishment of coherent, nationwide pollutant release and transfer registers (PRTRs)*". As the Protocol dates from 2003, there are ongoing UNECE discussions on how the Protocol might be updated to better reflect current knowledge and needs.

The E-PRTR Regulation established a register of pollutant releases and transfers at the EU level and provides public access to environmental information on pollutant releases to air, water and soil and on waste transfers from over 34,000 of Europe's largest industrial facilities. This coherent, integrated database of the annual mass of pollutant releases and transfers is intended to support closer public engagement in environmental decision-making. Policymakers, academics, and non-government and environmental advocacy organisations and operators make extensive use of the E-PRTR for the assessment of impacts and comparing environmental performance.

The ultimate aim of developing a publicly accessible environmental information system is to provide a mechanism "*contributing to the ability of every person of present and future generations to live in an environment adequate to his or her health and well-being*" (PRTR Kyiv Protocol).

Article 5 of the E-PRTR Regulation defines its scope through references to:

- Annex I – which describes the activities covered;
- Annex II – which defines the pollutants and the release thresholds that trigger reporting.

Operators report annual releases to their Member State competent authority when an activity is above the Annex I capacity threshold and that activity emits pollutants above the Annex II thresholds.

The E-PRTR evolved from the European Pollutant Emission Register (EPER), which was created to provide the first EU-wide inventory of releases arising from activities under the Integrated Pollution Prevention and Control Directive (IPPCD; 1996/61/EC). The activities covered by the EPER mapped

[1] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

[2] https://ec.europa.eu/environment/topics/circular-economy/first-circular-economy-action-plan_en

[3] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1589378556665&uri=CELEX:32006R0166

[4] https://unece.org/env/pp/former%20bodies-working-group-prtrs-introduction

directly onto Annex I of the IPPCD. Two key factors led to a subsequent divergence of activities covered by the inventory and the regulatory regime:

1. In 2006, the EPER evolved into the E-PRTR in order to deliver Annex 1 of the Kyiv PRTR Protocol. This resulted in an extended scope for the Annex I activities, e.g. urban wastewater treatment plants, aquaculture and mining/quarrying.
2. In 2010, the Industrial Emissions Directive (IED; 2010/75/EU) replaced the IPPCD and sectoral directives and introduced additional activities for regulatory control, e.g. waste recovery.

An important development arising from the IED is the consolidation of several reporting requirements into a single system, the so-called EU Registry on Industrial Sites.[5] This Register compiles, in a single data flow, information that identifies, geo-locates and provides defining attributes of industrial activities under the scope of several pieces of EU law, including the IED Chapter II, III and IV installations/plants and the E-PRTR Regulation Annex I facilities. This system enables interlinkages of databases that were, in the past, independent reporting flows and now enables the cross-checking of data. It also implied a change in the operation of the E-PRTR reporting and its integration with the Emission Inventory for Large Combustion Plants. There is also a legal dimension to these changes, namely the adoption of implementing decisions, one under the IED (EU/2018/1135) and one under the E-PRTR Regulation (EU/2019/1741).

Potential E-PRTR problem areas have been identified by a number of specific Commission initiatives, as well as general implementation feedback from stakeholders. In December 2017, the E-PRTR evaluation[6] concluded that the E-PRTR is generally "*fit for purpose*", but there were some areas for possible refinement, including:

- The E-PRTR can be made more efficient and coherent if there is further harmonisation with closely-related environmental reporting obligations.
- Adding more contextual data to the existing E-PRTR would improve its effectiveness as a comprehensive source of environmental information. This could help benchmark the environmental performance of industrial activities.
- Improving knowledge in areas of current weakness, e.g. waste transfers, diffuse emissions, releases in products.
- Raise awareness of the E-PRTR's existence and increase user numbers.

This report documents the work carried out to support the Commission in preparing the impact assessment of the potential revision of the E-PRTR Regulation, including the definition of the problems to be tackled, identification of a range of options to address these problems, the analysis of stakeholders' feedback, and the assessment of the impacts of the selected policy options.

There are a number of initiatives affecting other European environmental legislation that are closely linked:

- The revision of the IED;
- The revision of the Urban Waste Water Treatment Plant Directive (UWWTD);[7]
- The revision of lists of pollutants affecting surface and groundwaters under the Water Framework Directive (WFD).

[5] https://rod.eionet.europa.eu/obligations/721

[6] https://circabc.europa.eu/ui/group/f80de80b-a5bc-4c2b-b0fc-9c597dde0e42/library/f2f2de66-2d30-453a-adaf-0a0c51a67ffe?p=1&n=10&sort=modified_DESC

[7] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:31991L0271

2 Methodology

2.1 Impact assessment

The **analysis of problems** followed the major steps advised in BR Guidelines Tool #14. **Intervention logic**, an analytical tool used to understand and visualise how an intervention solves a specific challenge, was used to establish the links between problem drivers and policy options.

The development of the **baseline and analysis of options**, including the development of baseline, was based on the principles set out in BR Guidelines Tool # 17. In particular, an initial set of E-PRTR (sub)policy options was screened by using a set of criteria for determining which options to include or not as advised in BR Guidelines Tool # 17.

Description and where possible quantification of the economic, social and environmental **impacts** of the short-listed options followed the BR Guidelines Tool # 19. The main direct impacts were quantified and monetised (for both the baseline and the policy options under consideration). Furthermore, indirect impacts were quantified, where possible, and if not then they were assessed qualitatively with a clear indication of their nature and likely magnitude. **Costs and benefits** were disaggregated, as far as possible, according to each identifiable action under the different options and identified according to the standard typology of costs (e.g., administrative, enforcement) and benefits (BR Guidelines Tool #58 and #59). The **assessment** was undertaken in line with the Better Regulation Guidelines and, in particular, Chapter 8 of the Toolbox ("Methods, models and costs and benefits").

Stakeholder consultation followed the advice outlined in BR Guidelines Tools # 53 – # 56. In line with BR Guidelines Tool #54, **questionnaire surveys** were used to allow the stakeholders and the public to voice their opinions on the improvement of the E-PRTR. To avoid limitations of a questionnaire survey in terms of the focus on pre-defined answer options, open questions and follow-up **interviews** were designed. **Descriptive statistics** and MS Excel were used for the analysis of quantitative data. Visual aids were used for the presentation of quantitative data. For interpreting qualitative data **thematic analysis** was applied and supported by NVivo content analysis software.

2.2 Data sources and analytical support

Desk research has comprised literature and evidence assessment, as well as quantitative assessment related to administrative burden.

Evidence and literature have been sourced from:

- References in the Terms of Reference for the E-PRTR impact assessment support study;
- Current work being undertaken by project partners;
- Reports and other evidence signposted by the European Commission;
- The parallel study supporting the impact assessment of the revision of the IED;
- A review of the literature;
- Respondents to stakeholder consultation activities;
- The analysis of the E-PRTR data (which provided the likely number of facilities to be impacted by different policy options).

The inclusion of additional activities and the assessment of the administrative burden has been informed by the consultation of Eurostat statistics and the EU Registry on Industrial Sites. The inclusion of additional pollutants has been informed by the consultation of other EU environmental legislation and European Chemicals Agency's databases.

2.3 Field research

2.3.1 Open public consultation

An online OPC offered the opportunity for interested individuals from all stakeholder groups to give their opinion on the revision of the IED and E-PRTR Regulation. The OPC was launched on the Commission's website.[8]

The questionnaire (presented in Annex 3) included 24 questions, of which four were specific to the E-PRTR. Submissions to the OPC were analysed qualitatively and quantitatively. All multiple-choice questions were summarised for results by stakeholder group.

OPC results are presented in Section A1.1 of Annex 1.

2.3.2 Targeted stakeholder engagement: online survey

To gather information from stakeholders who have a good understanding of the implementation of the E-PRTR, a combination of targeted stakeholder consultation methods was used. A targeted online survey (questionnaire presented in Annex 2) was used to gather the views of key groups of stakeholders, including Member State authorities (at any level of administration and E-PRTR implementation), industry (individual company or trade body) or other type of organisations (e.g. NGO, research body).

TSS results are presented in Section A1.2 of Annex 1.

2.3.3 Interviews

Targeted telephone interviews to complement the online survey took place with representatives of regional and national competent authorities, European institutions, representatives of non-EU PRTRs, representatives of the Kyiv Bureau, industry associations, civil society, and other key stakeholders.

Additional details are provided in Section A1.3 of Annex 1.

2.3.4 Focus groups

Focus group discussions were held to complement the online survey and interviews. Representatives of Member State authorities, industry associations and the NGO community took part in the discussion. Attendance at the focus group was by invitation only. Two focus groups were organised to tackle different problem areas.

Additional details are provided in Section A1.3 of Annex 1.

2.3.5 Stakeholder workshops

Two workshops were held online before the consultation process had started and after the OPC and the TSS were closed.

Additional details are provided in Section A1.3 of Annex 1.

[8] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/1913-Evaluation-of-the-Industrial-Emissions-Directive/public-consultation_it

2.4 Robustness of the evidence and level of confidence

The level of credibility that can be placed in each source of information that has been used for the assessment varies. In principle, sources of information that are based on measured or reported information are believed to be quite certain. However, even in these cases the robustness depends on the correct measuring and reporting of the parameter concerned. It is assumed that even if there are errors, these are not systematic and there is not concerted manipulation.

In other cases, literature may heavily draw on stakeholder opinion, or be based on a small sample or have other features that weaken its robustness. Literature which originates from stakeholders with a particular vested interest has been treated with great caution, as it may present information selectively to support an argument the stakeholders wish to pursue.

Stakeholder opinion presents similar risks to stakeholder sourced literature. In their opinions, stakeholders may be seeking to manipulate the results to support their preferred outcome. In the case of this assessment, industry hold opposite views to researchers and NGOs on many of the problem areas identified. In general, industry opposes drastic changes to the scope of the Regulation, pointing to the potential for significant increases in the administrative burden. Conversely, researchers and NGOs would like to see a significant revision of the Regulation. It seems relatively likely that authorities' opinions would be more objective, although individual Member States may also have specific outcomes in mind. It is therefore not surprising that Member States' opinions are largely found to lie between those of NGOs and industry.

The level of confidence in the assessment is a result of the robustness of each of the individual information sources used and the degree to which the different sources could be used to corroborate each other.

The weakest confidence is associated with answers where the only information available is stakeholder opinion. For all areas of investigation, the opinion expressed in the surveys has been supported and contrasted with the opinions expressed in interviews or focus groups. Where possible, stakeholders' views were compared with the findings from literature, to achieve a higher degree of confidence.

In the case of the assessment of the administrative burden, it has not been always possible to isolate the burden attributable to the E-PRTR Regulation from that attributable to the IED or to implementing a national PRTR, particularly where it may have a broader scope than the Regulation. Even the stakeholders involved in the implementation of these two legal instruments found difficult to clearly separate the tasks, and therefore the administrative burden, required by the IED and the E-PRTR Regulation.

3 Problem definition and objectives

3.1 Overview

This section highlights the problems with the current E-PRTR data flows identified by the evaluations and reviews of the E-PRTR[9, 10] and the IED[11]. Problems result in a lack of usability of the E-PRTR dataset to inform the public and decision-makers. Problems relate to cases where the E-PRTR lacks:

- Completeness, because of missing activities, sub-activities and pollutants for important industrial processes, as well as cases where too high thresholds mean that not enough facilities report their releases. The original aim of the EPER, the predecessor of the E-PRTR, was to capture 90% of total industrial releases in Europe for each pollutant[12]. The current reporting thresholds do not guarantee the capture of 90% of releases and transfers from industrial facilities for at least some pollutants.
- Transparency, because of lack of activity details needed to understand, prioritise and develop options for reducing emissions, and a lack of detail on how reported releases and transfers are derived.
- Comparability, because of different definitions between E-PRTR and IED complicating reporting and slowing down decisive action.
- Consistency between methods used to derive releases and transfers reported, which undermine confidence in the datasets and interfere with a clear understanding of trends in releases.
- Accuracy with the calculation and estimation of some emissions through the use of inappropriate and/or outdated default emission factors and methodologies.
- Timeliness, due to delays in publishing data because of time lags in reporting and review of reported data.
- Flexibility to update activities, pollutants and thresholds as new evidence and science arise.

Section 3.2 highlights these problems in more detail.

The analysis of problems followed the major steps advised in BR Guidelines Tool #14. Intervention logic, an analytical tool used to understand and visualise how an intervention solves a specific challenge, was used to establish the links between problem drivers and policy options.

The scope of the E-PRTR has not changed since 2006. Yet, EU industrial activities (including those covered by other EU policies), as well as the pollutants emitted, have continued to evolve. Research has provided evidence on the impacts of new and existing pollutants. New legislation (including the development of the IED) continues to improve the focus on minimisation of industrial releases and necessitate associated reporting requirements. Moreover, the Strategy on Chemicals for Sustainability[13] was adopted in October 2020, highlighting issues such as the need to address risks from chemicals across policy areas, and to include some horizontal proposals to enhance consistency between water and other legislation on chemicals, for example as regards risk assessment and

[9] https://circabc.europa.eu/ui/group/f80de80b-a5bc-4c2b-b0fc-9c597dde0e42/library/f2f2de66-2d30-453a-adaf-0a0c51a67ffe?p=1&n=10&sort=modified_DESC

[10] https://circabc.europa.eu/ui/group/f80de80b-a5bc-4c2b-b0fc-9c597dde0e42/library/b4eacd6d-4425-479a-a225-77306de6b060?p=1&n=10&sort=modified_DESC

[11] https://circabc.europa.eu/ui/group/06f33a94-9829-4eee-b187-21bb783a0fbf/library/3ff25cee-c020-41bb-ae5b-450ce1115ef2?p=1&n=10&sort=modified_DESC

[12] European Commission (2000), Guidance Document for EPER implementation.

[13] https://ec.europa.eu/environment/pdf/chemicals/2020/10/Strategy.pdf

approaches to groups of substances or data sharing between different legislative areas. It also includes actions to address certain groups of substances of very high concern, such as endocrine disruptors, persistent mobile and toxic, and very persistent and very mobile substances, and specifically per- and polyfluoroalkyl substances (PFAS).

The following subsections provide an overview of the evaluations of the E-PRTR and the IED.

3.2 Evaluations of the E-PRTR and the IED

3.2.1 E-PRTR Regulation evaluated under the Regulatory Fitness and Performance (REFIT) programme – 2017

In 2016-2017, the E-PRTR Regulation was evaluated as part of the Regulatory Fitness and Performance (REFIT) programme[14, 15, 16]. The E-PRTR was determined to be an effective instrument for providing a comprehensive and detailed dataset on industrial releases and transfers. Information beyond the requirements of the Kyiv Protocol was determined to be efficiently collected. Concerns were raised about the coherence of the E-PRTR with data reported under related environmental legislation, such as the IED and waste legislation. Finally, the evaluation determined that the E-PRTR provides added value for the public, operators and policymakers as it ensures consistent implementation of the Kyiv Protocol, enabling comparative assessments between Member States.

The E-PRTR evaluation identified the following areas for refinement:

- Updating the existing EU-level guidance to aid consistent interpretation of reporting requirements.
- Further harmonisation with closely related environmental reporting.
- Addressing areas of weakness in reporting such as waste transfers, diffuse emissions and releases in products
- Simplifying the triennial obligation for Member States to report on E-PRTR implementation.
- Providing more contextual data to improve the E-PRTR's effectiveness as a comprehensive source of environmental information, including environmental performance.
- Raising awareness of the E-PRTR and increasing user numbers.

3.2.2 Review of E-PRTR implementation and related guidance – 2020

The Commission study 'Review of E-PRTR implementation and related guidance'[17] reviewed the completeness of the E-PRTR activities, pollutants and thresholds compared with the IED, with the needs of other European environmental legislation, with recent work by the OECD to harmonise international PRTR definitions of sectors and pollutant lists, and with emerging evidence on new activities and pollutants of concern. The work identified and suggested the inclusion of additional activities and pollutants to improve the E-PRTR's alignment with the IED, other European Union medium-specific legislation and emerging environmental concerns.

[14] https://circabc.europa.eu/ui/group/f80de80b-a5bc-4c2b-b0fc-9c597dde0e42/library/f2f2de66-2d30-453a-adaf-0a0c51a67ffe?p=1&n=10&sort=modified_DESC

[15] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1513176768325&uri=SWD:2017:710:FIN and https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1513176822493&uri=SWD:2017:711:FIN

[16] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1513173747248&uri=COM:2017:810:FIN

[17] https://circabc.europa.eu/ui/group/f80de80b-a5bc-4c2b-b0fc-9c597dde0e42/library/b4eacd6d-4425-479a-a225-77306de6b060?p=1&n=10&sort=modified_DESC

Suggested revisions to the list of E-PRTR activities included adding magnesium oxide production, carbon capture and storage and a new metal-working activity; revising E-PRTR sub-activity definitions to align with the IED for cement and lime production and hazardous waste management; lowering the capacity threshold for combustion plants to 20 MW to include larger facilities covered by the Medium Combustion Plant Directive (MCPD), and lowering the capacity threshold from 100,000 population equivalents (p.e.) to 15,000 p.e. to capture 90% of releases from plants covered by the Urban Waste Water Treatment Directive (UWWTD). A top-down approach to estimating releases to air and water from intensive cattle rearing was also elaborated.

Relevant pollutants not currently in the E-PRTR but which are covered by a number of initiatives focussed on environmental protection were identified by reviewing:

- Annex II of the IED;
- Pollutants with associated emission levels in BAT conclusions;
- The Water Framework Directive (WFD) priority substances and watch lists;
- The Stockholm Convention and Gothenburg Protocol;
- The OECD shortlist of PRTR pollutants; and
- Substances of concern in other scientific literature.

A total of 38 pollutants were suggested for addition to the E-PRTR pollutant list to enable more comprehensive tracking of environmental initiatives. Twenty-four of the pollutants listed in the E-PRTR Regulation Annex II have been banned or severely restricted and have been reported in low quantities in recent years. However, their retention was advised since their removal would impact historical time series as well as international comparisons of environmental pressures.

The degree of the capture of industrial releases by the current E-PRTR lists of activities and pollutant reporting thresholds was also evaluated to assess whether the target 90% capture of all industrial releases was being achieved by the E-PRTR. The work concluded that for some pollutants, less than 90% of releases were being captured. Lowering the reporting threshold for 11 pollutants to air and 14 pollutants to water would enable 90% capture of all industrial releases of these pollutants. The work also concluded that reducing activity capacity thresholds to capture smaller facilities will not necessarily increase the amount of release reported. Numerous smaller facilities individually release smaller amounts of substances and may therefore be below the pollutant reporting thresholds. The current E-PRTR annexes (I and II) do not set activity-pollutant reporting thresholds that would enable the E-PRTR reporting to be more targeted and complete.

The project also proposed possible revisions to the E-PRTR Guidance document that aim to improve the consistency, coherence and quality of data reported to the E-PRTR by Member States. This work was based on reviews of national facility reporting guidance and consultation with industry trade associations. The recommendations were designed to help operators and competent authorities to allocate resources to quantifying and reviewing releases more effectively and included a sector-specific approach to E-PRTR reporting requirements (e.g. prescribing or permitting different quantification methods such as the use of continuous monitoring or top-down versus bottom-up approach, defining pollutants that should be present in significant quantities, and different release thresholds).

3.2.3 Evaluation of the Industrial Emissions Directive (2010/75/EU) – 2020

This study assessed the effectiveness, efficiency, relevance, coherence and EU added value of the IED. The IED is the primary instrument in place for the reduction and minimisation of environmental harm from industrial facilities and installations and has the objective to prevent and control the pollution of air, water, or soil caused by industrial installations. The IED sets out the main principles for permitting and controlling large industrial installations based on an integrated approach. As defined in BAT

Reference documents (BREFs), BAT should be applied to reach a high level of environmental protection. The IED covers around 50 000 installations in the EU. Thematic data on releases and transfers to support performance and progress tracking are provided by the E-PRTR.

The IED evaluation involved a detailed review of available literature and datasets from across the EU. The study gathered evidence and views from Member States, industry, NGOs and other stakeholders on the functioning of the IED through open public consultation, targeted stakeholder survey, interviews, focus groups and workshops. Issues of most relevance to the E-PRTR included gaps and limitations in public access to information, as required by the IED, which is necessary to understand and influence facility level impacts and permitting processes. The study also flagged coherence issues between the IED and E-PRTR (plus wider policies) around sectoral representation and pollutant inconsistencies. Key limitations of the E-PRTR as a policy and performance evaluation tool were highlighted as a result of non-mandatory and poor reporting of activity, consumption and production information. Ongoing issues and challenges associated with the implementation of the IED were also identified and will inform future IED development actions. Most notably, an inception impact assessment has been published for the revision of the IED with a focus on the following key themes that were identified as part of the evaluation:

- There may be sectors outside the IED scope that cause high pollution and for which the IED could be an appropriate policy instrument.
- Comparability of Member States' implementation of EU requirements, including BAT conclusions, into permits and verification.
- Contribution to reducing industry releases to water.
- Elaboration of BAT conclusions.
- Public access to information, participation in decision making and access to justice.
- Contribution to the circular economy.
- Interaction with industry decarbonisation efforts.
- Coherence with other EU legislation.

3.2.4 Linkages to the IED and the EU Registry on Industrial Sites

Linkages between the E-PRTR and the IED

The E-PRTR represents the primary inventory of releases that can be used to evaluate the progress of EU environmental policies and whether these measures are effective. However, because the E-PRTR Regulation and IED were developed at different times, the activities and pollutants covered by the IED are similar but not always exactly the same as those covered by the E-PRTR, thus limiting the potential for the E-PRTR to be used to fully evaluate the progress of the IED. These differences were explored in the recent Commission study on E-PRTR implementation and included:

Activities not covered by the E-PRTR but included in the IED. Magnesium oxide production (IED activity 3.1(c)) and CO_2 capture and storage installations (IED activity 6.9) were considered appropriate for inclusion in the E-PRTR due to their high emission potential.

Activities covered by both the E-PRTR and IED but with different capacity thresholds. There are no cases where IED thresholds were lower than the E-PRTR thresholds. For the production of wood-based panels (IED activity 6.1(c)), the production of food products from vegetable raw materials (IED activity 6.4(a)(ii)), and wood impregnation (IED activity 6.10), the capacity thresholds in the E-PRTR are lower than in the IED and therefore cover more facilities. Retention of the E-PRTR capacity thresholds for these activities was recommended to maintain consistency of the E-PRTR time series and provide a complete picture of releases from these sectors.

Activities covered by the E-PRTR and the IED with different sub-categories. In two cases, there are inconsistent sub-categories for IED and E-PRTR activities. For these, adopting the sub-categories of the IED for the E-PRTR could be considered for gasification and liquefaction with two types of fuel category in (IED activity 1.4) and for cement and lime production, which is divided into product-related categories in IED activity 3.1.

Activities with missing sub-categories. The IED includes a more detailed breakdown of disposal or recovery of hazardous and non-hazardous waste than the E-PRTR. The E-PRTR activities could be extended in detail to align with the IED sub-categories for both hazardous and non-hazardous waste, along with explicitly including the recovery, as well as disposal, of non-hazardous waste.

Pollutants covered by the IED. For most of the groups of substances listed in Annex II of the IED, the E-PRTR already requires reporting of one or more substances. Some of these groups of substances or substance categories are broadly defined to enable regulators to address specific circumstances at specific installations. For instance, although carcinogenic, mutagenic or reprotoxicant (CMR) substances and mixtures are listed, no further details are provided in the IED on how to identify such substances and mixtures. Many CMR substances are intermediate products generated within closed systems. Others, such as pesticides, are more widely used in open systems but are already included in Annex II of the E-PRTR or in lists related to other legislation such as the WFD and the Stockholm Convention (and these lists were reviewed for inclusion in the E-PRTR). There are two instances where the IED Annex II includes categories that may be considered for inclusion in the E-PRTR, specifically fine particulate matter ($PM_{2.5}$) to air and materials in suspension (or total suspended solids, TSS) in water.

Pollutants where AELs have been set for BAT sectors. Assuming that defining specific pollutant lists for different BAT sectors (i.e. for different E-PRTR activities) would be onerous and burdensome (an assumption that could be evaluated during this project), it was suggested that only pollutants where AELs have been set for at least two BAT sectors be included in Annex of II of the E-PRTR Regulation. For air, pollutants would be formaldehyde, hydrogen sulphide, antimony, cobalt, manganese, thallium and vanadium; for water, the pollutants would be TSS and sulphates.

Alignment between the scope of the E-PRTR and the IED on these issues would ensure the E-PRTR can provide more comprehensive and complete information to evaluate the effectiveness and progress of the IED. As the IED is also under revision, there is a window of opportunity to align both policies in terms of sectoral and pollutant coverage as far as possible.

Another difficulty in relation to alignment between the E-PRTR and the IED exists where more than one type of activity listed in E-PRTR Annex I is carried out by an operator. In these cases, the total aggregated facility releases are reported to the E-PRTR rather than the activity-specific releases. This prevents the separation of releases needed for an IED activity-specific assessment. The impact of requiring releases and transfers to be reported at a 'sub-facility level', i.e. by activity, thus allowing a more complete understanding of the effects of different BAT, could be assessed during this project.

EU Registry on Industrial Sites

The EU Registry on Industrial Sites ('EU Registry') was developed to coherently handle geographic, administrative, permit and IED implementing information (e.g. applicable BAT conclusions and derogations) for different types of industrial entities subject to EU environmental legislation, including the E-PRTR Regulation and the IED. The EU Registry thus address many of the concerns about coherence raised during the E-PRTR evaluation. Its specific legal basis is the second IED Commission Implementing Decision (EU/2018/1135) and the E-PRTR Commission Implementing Decision (EU/2019/1741), which together define the data fields that should be reported. By following the Infrastructure for Spatial Information in Europe (INSPIRE) Production Facilities data model, the EU

Registry can resolve relationships between facilities subject to the E-PRTR Regulation and their constituent installations that are subject to the IED. Importantly, as well as enabling understanding of how releases reported to the E-PRTR relate to emissions reported to the large combustion plant (LCP) inventory, the EU Registry can definitively relate entities subject to E-PRTR reporting (for which release and transfer data are available) to those regulated by the IED (for which regulatory information and permits are available).

The EEA's Industrial Emissions Portal[18] (as launched at Green Week in June 2021) brings together information on the largest industrial complexes in Europe, releases and transfers of regulated substances to all media (air, water and land), waste transfers, as well as more detailed data on energy input and emissions for large combustion plants in the EU Member States as well as in Iceland, Liechtenstein, Norway, Serbia, Switzerland and the UK. The information contained within the portal includes that which is reported under the IED (via the EU Registry on Industrial Sites) and the E-PRTR.

3.3 Problems to be tackled

Six overarching problem areas and an additional seven sub-problem areas have been identified from the previous evaluations and reviews discussed above. These are:

1) Activities and activity thresholds:

   a) Updating activity thresholds to capture 90% of releases and transfers for existing activities,
   b) Adding additional activities and or sub-activities (and thresholds to be defined) to be consistent with IED and other media-specific issue monitoring

2) Pollutants and their thresholds

   a) Updating pollutant thresholds to capture 90% of releases and transfers for existing and newly identified activities
   b) Adding additional pollutants (and thresholds to be defined) to be consistent with IED and other media-specific issue monitoring

3) Adding detail to reports to support the tracking progress of industry towards the circular economy.

4) Reporting modalities and data flow:

   a) Efficiency and interoperability of reporting
   b) Reporting timeframes and the time lag of reported data
   c) Quality of reporting

5) Quality of reports and the accessibility of the E-PRTR data for the public.

6) Releases from diffuse sources and products.

[18] https://industry.eea.europa.eu/

3.3.1 Problem 1a: Current activity thresholds and definitions

The original aim of the E-PRTR was to capture 90% of industrial releases for each pollutant. The E-PRTR is not capturing the targeted percentage of releases from industrial activities currently defined in the reporting requirements. In addition, definitions and thresholds of some activities are inconsistent with the IED and other legislation such as the MCPD and UWWTD. Medium combustion plants, and most urban wastewater treatment plants within the scope of the UWWTD legislation, are not within the scope of the E-PRTR activity list. Industrial activities operating in Europe have evolved since the E-PRTR came into force. Therefore, the thresholds for the activity list in Annex I needs to be reviewed and updated to ensure 90% data capture.

Six activities, 5(a), 5(b), 5(c), 3(c), 1(b) and 5(g), are misaligned with the IED activity list, either in capacity threshold or activity description. The IED revision is also proposing lowering thresholds for further activities, which could potentially increase the misalignment between the E-PRTR and IED activity lists. Additionally, activities 1(c) and 5(f) have capacity thresholds that could be lowered to capture releases and transfers from sites under the MCPD or a higher proportion of those under the UWWTD legislation. For example, lowering the capacity threshold for combustion plants to 20 MW to include larger facilities covered by the MCPD. This would add approximately 9% of additional NO_x releases to air by adding around 6,300 facilities but would also require lowering the pollutant reporting threshold.

The incomplete dataset could lead to a lack of visibility of new and emerging environmental problems resulting from industrial activities and to inability to plan mitigation measures for future problems. For example, policies and or private sector investment may not effectively account for and address the problem.

Most of the public authorities, researchers and NGOs who participated in the consultation activities carried out for this study considered the lowering of activity thresholds as important, while the great majority of industry stakeholders thought it not at all important (more details in Sections A1.2.6 and A1.3.2 of Annex 1).

3.3.2 Problem 1b: Missing activities and sub-activities

The original aim of the E-PRTR was to capture 90% of industrial releases for each pollutant. Industry in Europe has changed since the E-PRTR came into force in 2006, and there is a range of emerging sectors with significant releases of pollutants, which are not yet included in the E-PRTR Annex I activity list. Therefore, Annex I needs to be updated. Missing activities mean that the E-PRTR does not provide a complete picture of releases and transfers and cannot be used as a tool to fully understand impacts and ensure coherent environmental policy. Importantly, there are inconsistencies between the IED and E-PRTR activity lists, meaning some IED activities are not reported in the E-PRTR.

Fourteen new activities and sub-activities have been identified for inclusion. Some examples are:

1) Adding magnesium oxide production to the E-PRTR activity list would enhance coherence with the IED and add 14 facilities. Likewise, adding carbon capture and storage to the E-PRTR would also increase IED coherence, although the additional number of facilities is uncertain as only pilot-scale plants currently operate in the EU.
2) Adding a new metal-working activity would ensure a more complete E-PRTR coverage of the manufacture of motor vehicles, computers, electrical, transport and other equipment. Comparison with international PRTRs shows high releases of metals to air and water from these sectors, for which further investigation of source processes is needed.

One of the most prominent problems mentioned in position papers submitted in response to the OPC is the need for greater harmonisation between relevant policies (more details in Section A1.1.8 of Annex 1). Authorities, researchers and NGOs who participated to the TSS thought it important to include additional sectors in Annex I of the E-PRTR Regulation, while most industry stakeholders considered it not at all important (more details in Section A1.2.5 of Annex 1). Many consultees suggested specific industrial activities for inclusion, mainly from five areas: transport, agriculture, ship dismantling, battery technology and mining. Many also mentioned that if the activity is in the scope of the IED, it should report to the E-PRTR (more details in Sections A1.2.6 and A1.3.2 of Annex 1).

3.3.3 Problem 2a: Existing pollutants and thresholds

The pollutant list in Annex II is out of date. Reporting thresholds require adjusting for existing pollutants or groups of pollutants to improve the capture of industrial releases, as some reporting thresholds do not guarantee the capture of 90% of releases from industrial facilities.

The incomplete capture for some important pollutant releases in the E-PRTR (through inadequate thresholds) leads to a partial and skewed perspective of the most important pollutants and industrial activities. This results in poorly focused policies to reduce releases and undermines the credibility of the E-PRTR dataset for decision making. There is currently no provision for dynamic adaptation or updating of annexes to respond to recent scientific findings on new or existing pollutant impacts. The current E-PRTR Regulation also does not provide flexibility for ensuring thresholds capture sufficient reported transfers and releases.

The previous analysis identified that lowering the reporting threshold for 11 pollutants to air and 14 pollutants to water would enable 90% capture of all industrial releases of these pollutants. Analysis indicated that there is already a 90% capture of all industrial releases for 30 pollutants to air and 35 pollutants to water.

Most OPC respondents, of all stakeholder types, think that there are no pollutants that should be removed from the E-PRTR. Most industry stakeholders considered that reporting thresholds should not be lowered, while some requested that all thresholds should be reviewed at regular intervals (more details in Sections A1.1.3 and A1.2.7 of Annex 1).

3.3.4 Problem 2b: Additional pollutants

The current E-PRTR reflects 2006 understanding of the main environmental issues associated with Annex I activities and related processes and pollutants. New pollutants and environmental issues have risen in prominence since then. A recent analysis of science and emerging environmental and health issues (including media-specific policies and legislation) have identified new pollutants of concern emitted by industrial activities that are not in the E-PRTR Annex II list. It is important that industry reports on these pollutants with appropriate reporting thresholds. There is no provision for dynamic adaptation or updating of annexes to respond to recent scientific findings on new pollutant impacts.

Adding the 38 pollutants identified in the previous analysis to the E-PRTR pollutant list would improve alignment with the IED, European media-specific legislation, and other PRTRs, enabling more comprehensive tracking of environmental initiatives.

Most industry stakeholders who participated to the OPC indicated that there is no need for additional pollutants in the E-PRTR. Authorities and NGOs provided suggestions, indicating particular pollutants or groups of pollutants. Some companies and business associations requested careful consideration and consultation before adding any pollutants to the register, to ensure their relevance (more details in Section A1.1.3 of Annex 1). Some position papers submitted in response to the OPC stated that they would like to see the E-PRTR cover a greater range of pollutants. There is a belief that the coverage

does not reflect current concerns (more details in Section A1.1.5 of Annex 1). Many consultees commented on the design of the mechanism to add pollutants, expressing caution over its functioning and pointing to the BREF (Best available technology reference) documents as the most appropriate framework to identify emerging pollutants for monitoring (more details in Sections A1.2.7 and A1.3.3 of Annex 1).

3.3.5 Problem 3: Information to track progress towards the circular economy and decarbonisation of industry

The European Green Deal commits the Commission to revise EU measures to address industrial pollution to make them more consistent with climate, energy and circular economy policies. This will contribute towards the zero-pollution agenda. The Green Deal commits, inter alia:

- Adopting an action plan towards a zero-pollution ambition.
- Revising EU measures to address pollution from large industrial plants, including both the IED and the E-PRTR.

The E-PRTR, in combination with related legislation such as the IED, has untapped potential for contributing to the EU's circular economy objectives by providing transparency on industrial performance:

- There is a benefit in reporting additional data on resource consumption, e.g. use of energy, water, raw materials. This also has linkages with options under consideration in the IED revision, e.g. mandatory application of BAT-AEPLs related to resource consumption.
- There is also no transparency around the transfer of pollutants in the data reported to the E-PRTR. The E-PRTR needs proper tracking of pollutants in transfers and their storage, export or final release (particularly waste and wastewater).

Additionally, the European Union has committed to reaching net GHG emissions of 55% of 1990 levels by 2030. The E-PRTR offers a mechanism to efficiently track progress with the reduction of GHG emissions from a range of GHG intensive activities. Transparent integration between E-PRTR and EU-ETS reporting is needed to provide stakeholders with sufficiently transparent information for decision making. Although the verified emissions under EU ETS are publicly available, any underlying background information on activity levels is not. Such information forms part of the confidential verification reports and is not available for public scrutiny. With suitable provisions, the E-PRTR could provide relevant background data for benchmarking and assessing industrial environmental performance within and across sectors.

The E-PRTR does not provide information that would help stakeholders (citizens, NGOs, competent authorities, Member States, the Commission) track the performance of the industry in contributing to the Green Deal, energy or circular economy commitments. Data on the composition of waste transfers and resource consumption (e.g. energy, raw materials and water) are currently not included or only partly included. It is important to note, however, that production volume will be a mandatory field under the integrated E-PRTR/LCP reporting from the 2023 reporting year (to be reported in 2024), although individual data points won't be made publicly available. This additional information could be an important contribution to realising the circular economy objectives, although this will be limited for the public and external data users. Additionally, evaluation of this information and releases reported under the E-PRTR and EU-ETS can inform the IED's BAT information exchange process and identify of installations with good environmental performance and energy efficiency. However, there are gaps and difficulties in linking the datasets.

The E-PRTR does not provide sufficiently transparent information (resource use and production data and activity (e.g. technologies/practices used/waste compositions etc.) and pollutant breakdowns

(e.g. hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs) which have different global warming potentials (GWPs)) for decision making around priorities, potential synergies and conflicts for GHG emission reductions and other environmental issues and impacts (e.g. circular economy; air, water and soil pollution). The current E-PRTR reporting requirements also do not facilitate transparency around releases of GHGs and other pollutants from EU-ETS facilities by linking EU ETS installations to E-PRTR facilities. The EU Registry collects installation EU-ETS IDs, thus potentially allowing correlation with IED installations and their parent E-PRTR facilities. This will allow comparison with emissions reported under the EU-ETS with those reported to the E-PRTR. There are also differences in scope (e.g. reporting on biomass burning is excluded from EU ETS and EU ETS is focussed on a much narrower range of industries) and detail (e.g. EU ETS reports at a more granular installation level rather than E-PRTR facility level) of reporting, reporting frequencies (where updates on EU ETS and E-PRTR are not in sync) and modalities (where datasets are difficult to align with missing linking IDs) which increase the burden and reduce transparency.

There is poor transparency in the E-PRTR data, with most reports lacking in relevant voluntary activity data reporting. In addition, the composition of waste transfers and data on resource consumption (e.g. energy, raw materials and water) are currently not included or only partly included in the E-PRTR. There is no noticeable trend in improvement to the voluntary reporting. The lack of completeness and poor detail (in activity and pollutant breakdown) means that environmental performance benchmarking cannot be done for any activity groups or the E-PRTR dataset as a whole. Therefore, the E-PRTR is not able to contribute to driving the circular economy objectives or assessing the carbon or resource efficiency of different industrial activities.

Industry, competent authorities and government policymakers are impacted by a lack of ability to benchmark performance of facilities for individual and groups of activities in the E-PRTR. If industry and policymakers do not have access to information that can highlight good and bad performers, there is more limited scope to understand and drive environmental performance in support of Green Deal, climate, energy and circular economy objectives. Ultimately, the public is impacted by ineffective action to improve the quality of the air, water and soil. The industry also risks poorly formed investment strategies, and government policies risk unforeseen negative impacts, poor public engagement and levels of trust.

OPC respondents' views on the usefulness of the E-PRTR with regard to environmental performance data somewhat vary according to each sector, although in general, positions are between 'neither satisfactory nor unsatisfactory' and 'moderately satisfactory' (more details in Section A1.1.3 of Annex 1). One of the recurrent themes of position papers submitted in response to the OPC was that the E-PRTR is a database that reports emissions but does not measure environmental performance. Industry stakeholders would like it to stay this way as there are other mechanisms for this purpose. The objections of respondents to measuring performance are best summarised by the statement that:

"Recently, there have been discussions on the fact that EPRTR should help identifying the best performers for the Sevilla process under the IED. We believe that this approach is not appropriate, as E-PRTR cannot take into account many of the factors (which are indeed analysed during the Sevilla process), and there is the concrete risk of setting benchmarks that depend on factors unrelated to the plant management (and therefore permits), such as, e.g., plant size, economic aspects."

NGOs are of the opposite view, considering that the E-PRTR Regulation should require the reporting of additional parameters (more details in Sections A1.1.5, A1.2.8 and A1.3.4 of Annex 1).

3.3.6 Problem 4a: Reporting modalities

For some categories of activity, in particular intensive farming, reporting releases can be a significant burden on reporters due to the number of facilities and difficulties in quantifying releases accurately.

Estimates using a top-down approach for some diffuse industrial sectors (where there is a large number of smaller operators such as in intensive farming or gas distribution) may reduce the reporting burden and improve data quality.

Activities with many diffuse facilities with relatively low releases per facility and little or no trained expertise in estimating releases face a disproportionate burden on their reporting. These industries consist of relatively few personnel with the time or training to engage in accurate reporting. Facilities are often unable to dedicate the time needed to develop and generate accurate estimates for relatively complex activities.

For accurate reporting across a large number of small facilities, the burden (person-days) of reporting is considerable per data point provided in reports. As an example, in 2017, 8,157 (20%) of the E-PRTR facilities reported were intensive farms. For each of these facilities to be able to collect data and manage to report is a burden on the sector. The possibility of including cattle farms in the E-PRTR activity list would increase the number of diffuse small facilities further, increasing the burden on operators of reporting per data point reported. If the E-PRTR is to capture more diffuse facilities with many operators, then the burden of reporting will continue to increase disproportionately.

Small operators, e.g. intensive livestock farms, through time needed to compile reports. Awareness-raising, data gathering, verification and processing, along with basic training for reporting this number of small and transient entities, is also an added challenge for competent authorities.

According to some OPC respondents, reporting could be more accurate and more regular. This is illustrated by the sense that it is very difficult to alter results once they have been uploaded to the database. This means any errors may remain uncorrected, thus hindering accuracy. Some of the position papers submitted propose the implementation of real-time emissions' monitoring (more details in Sections A1.1.8, A1.2.9 and A1.3.5 of Annex 1).

3.3.7 Problem 4b: Time lag and data flows in reporting

The time lag in reporting means decision making is based on data that are over two years old once it has been compiled, reported, verified by competent authorities and submitted to the EEA. The current data flow could be modernised, making use of advances in CEMs, telemonitoring technology and automated verification and machine learning approaches to improve the speed and quality of reporting and availability of data for decision-making.

Current data reporting and collection approaches and tools create significant time lags in data becoming available to inform the public and do not optimise opportunities for the capture of good quality data. Drivers for this problem include outdated non-automated reporting systems in some Member States and a significant manual burden and, therefore, time-lag in submitting reports by facility operators, processing, aggregating, checking, and submitting data by competent authorities to EEA and verification of data by the EEA.

The scale relates to the whole E-PRTR dataset and creates a lack of transparency on releases and transfers that have occurred in the most recent year. The E-PRTR dataset is less useful for modelling pollution releases due to this time lag. The problem could get worse if more data from many more facilities are included in the E-PRTR and conventional data collection and verification methods continue to be used. If the data flow can be more standardised and automated with automatic verification and rejection procedures, the time lag could be reduced to just over a year (because facilities' reports for the previous year's operation will be processed quickly).

All users of the E-PRTR data are impacted by the difficulty in identifying new and emerging environmental problems resulting from industrial activities and inability to plan for or head off future problems, e.g. policies and or private sector investment that do not effectively address the problem.

Consultees provided a lot of comments on improving the reporting of data. Data quality and timing of the reporting were the most discussed topics. In the discussion of the possibility to reduce reporting time, most respondents commented that it would not be feasible and would lead to a decrease in data quality, increase in reporting costs and administrative burden in general. Most respondents did not see an opportunity for significant timesaving (more details in Sections A1.2.9 and A1.3.5 of Annex 1).

3.3.8 Problem 4c: Inconsistent and incorrect reporting

There are inconsistencies and potential issues with the reported E-PRTR data resulting in poor accuracy, incomplete and non-transparent data, including:

- Inconsistent pollutant reporting and quantification methods used by facilities in the same sector, including reporting in incorrect units or with typos in the numerical information creating, incorrect coordinates (located outside of Europe), incorrect methodology reporting applied, potential missing releases and transfers, pollutant releases to water being reported as pollutant transfers and vice versa, inconsistencies in measurement or calculation methodologies between reporters.
- A lack of clarity on whether data is absent due to incomplete reporting or non-applicability or below the threshold for a particular facility.
- Poor administrative information on location, methodology used and tagging of release or transfer.

This problem affects the accuracy, completeness, and transparency of the E-PRTR and undermines its credibility and usefulness to decision-makers and the public. It is hard for competent authorities and users to distinguish if data are missing or just below the threshold. Drivers include a lack of clarity in the E-PRTR guidance and poorly trained and under-resourced operator reporting functions at facilities.

These issues also restrict the use of the data. Often when using the data in analyses then erroneous data must be removed or corrected[19].

A range of studies and reports about the E-PRTR points to discrepancies between countries and sectors for many data fields. The new EU Registry and Integrated E-PRTR/LCP reporting flows, with more vigorous online QA, have to some extent improved the data quality. However, a number of issues, such as potential missing releases and transfers and incorrect methodology reporting, have not been improved by the new reporting flows. The problem will continue with added facilities and pollutants.

All stakeholders are impacted by the quality of the data. Poor quality data used by decision-makers could lead to policies and/or private sector investment that do not effectively address environmental problems from industrial activities.

The significance of guidance and of IT systems that can spot errors were emphasised by consultees as means to improve the quality of data and the general efficiency of the reporting (more details in Sections A1.2.9 and 1.3.5 of Annex 1).

[19] https://www.eea.europa.eu/publications/costs-of-air-pollution-2008-2012

3.3.9 Problem 5: Access to E-PRTR information

Public awareness and use of the E-PRTR could be improved to increase participation in decision making and understanding of the environmental impacts of large industrial installations. The E-PRTR is currently a complicated dataset that requires an explanation of its structure to most data users, such as members of the public, academics, and NGOs, and is only available in English. There is a lack of contextual information for comparing environmental performance and its relationship to regulatory requirements for researchers. It does not allow engagement with interested groups in seeking options for improving the environment.

While the evaluation concluded that many different stakeholders use the E-PRTR, there is always a possibility to increase its use. In particular, the E-PRTR website is only available in English. This may be reducing engagement and/or interest in the E-PRTR data. If the E-PRTR is not accessible and relevant to the public, it is not serving its core purpose. Lack of contextual information has been suggested as one factor limiting the usefulness for the public, e.g. data on production volumes to enable some degree of benchmarking of facilities.

The scale of the problem is partially defined by the number of times the E-PRTR is accessed, and then information is used by the public and other stakeholders to engage with environmental decision-making processes. The scale of the problem is additionally defined by how and how often the E-PRTR data is used in analysis and studies on environmental concerns within Europe by academia and NGOs.

Even though some OPC respondents thought the reporting on the E-PRTR database could be improved, they stated that the database is easily accessible, and believe that the relevant experts, industry, and NGOs already know how to use it effectively. With this said, they would welcome any attempts to improve usability, especially if more stakeholders are able to take advantage of it (more details in Sections A1.1.5, A1.2.10 and A1.3.6 of Annex 1).

3.3.10 Problem 6: Releases from diffuse sources and releases from products

Citizens, NGOs, competent authorities and the Commission need information on releases from smaller installations within (agro-)industrial activities that are collectively significant (small farms, diffuse energy extraction) but individually below current capacity thresholds. Additionally, many new and emerging products contain pollutants that are released once these products have left the factory and are then used or disposed of. The Aarhus Convention also says that releases from diffuse sources such as transport and residential combustion should be incorporated. As well as a pollutant and release transfer register, the E-PRTR is seen as an inventory of releases and transfers from industrial sectors within Europe. Omitting smaller installations below the activity thresholds and products that release pollutants provide an underestimate of releases from the industrial sector within Europe, but the scale of the problem is currently unknown.

OPC respondents considered E-PRTR information on diffuse sources and releases from products as the least complete of the information provided by the register (more details in Sections A1.1.3, A1.2.11 and A1.3.7 of Annex 1).

3.4 Why should the EU act and what should be achieved?

This subsection further elaborates the issues defined in Section 3.3 by detailing how the problems would evolve without action, why action is needed at the EU level and objectives for remediation (Table). In addition, and Figure 3-1 depict the logic for intervention, covering the various problems and their links to drivers, consequences of inaction, general objectives, and specific objectives and measures.

Table 3-1: Why should the EU act and what should be achieved?			
	How would the problem evolve without action?	***Why is action needed at the EU level?***	***Objectives for remediation***
Problem 1a: Current activities and thresholds	Due to too high activity thresholds, incomplete data could lead to an incomplete picture of industrial impacts across Europe and an inability to track changes in the environmental impacts of these. Additionally, there would be low confidence/use/value of industrial reported data that was designed to inform decision making.	To ensure consistency in sectors reporting to the E-PRTR across Member States and transparency for decision-making across Europe.	Update the current activity thresholds and descriptions to ensure 90% capture of releases from industrial installations in Europe and improve coherence with wider EU policy.
Problem 1b: Additional activities and sub-activities	From missing activities of increasing importance, the incomplete data could lead to a poor/incoherent picture of industrial impacts across Europe and further gaps in knowledge about potential problems. Additionally, there would be low use/value of industrial reported data that was designed to inform decision making.	To ensure consistency in sectors reporting to the E-PRTR across Member States and transparency for decision making across Europe.	Update the current activity list to include new activities and sub-activities to ensure 90% capture of releases from industrial installations in Europe and align with wider European policy. The activity list should reflect the current industrial situation in Europe.
Problem 2a: Existing pollutants and thresholds	Due to too high pollutant thresholds, the incomplete data could lead to an incomplete picture of industrial impacts across Europe and further gaps in knowledge about potential problems. Additionally, there would be low confidence/use/value of industrial reported data that was designed to inform decision making.	To ensure consistency in reported releases and transfers across Member States and transparency for decision making across Europe.	Catch 90% of industrial releases by lowering thresholds (11 pollutants to air and 14 to water) or potentially removing reporting thresholds altogether. Additionally, disaggregating pollutant groups e.g. HCFCs, CFCs. The legislation should also allow for the flexible maintenance of the pollutant list, including amendments to pollutant reporting thresholds and "Sunrise" and "Sunset" lists of emerging and disappearing pollutants.
Problem 2b: Additional pollutants	Due to missing pollutants of importance, the incomplete data could lead to a poor/incoherent picture of industrial impacts across Europe and further gaps in knowledge about potential problems. Additionally, there would be low confidence/use/value of industrial reported data that was designed to inform decision making.	To ensure consistency in reported releases and transfers across Member States and transparency for decision making across Europe.	Better align the current pollutant list with wider EU legislation by adding substances. The legislation should also allow for the flexible maintenance of the pollutant list, including pollutant reporting thresholds and "Sunrise" and "Sunset" lists of emerging and disappearing pollutants.
Problem 3: Information to track progress towards the	The lack of contextual data is contributing to a poor/incoherent picture of industrial impacts across Europe and further gaps in knowledge	To ensure level playing field for industry and transparency for decision making across Europe.	Reporting additional contextual information such as resource usage (water, energy, key raw materials) and waste composition. Increased

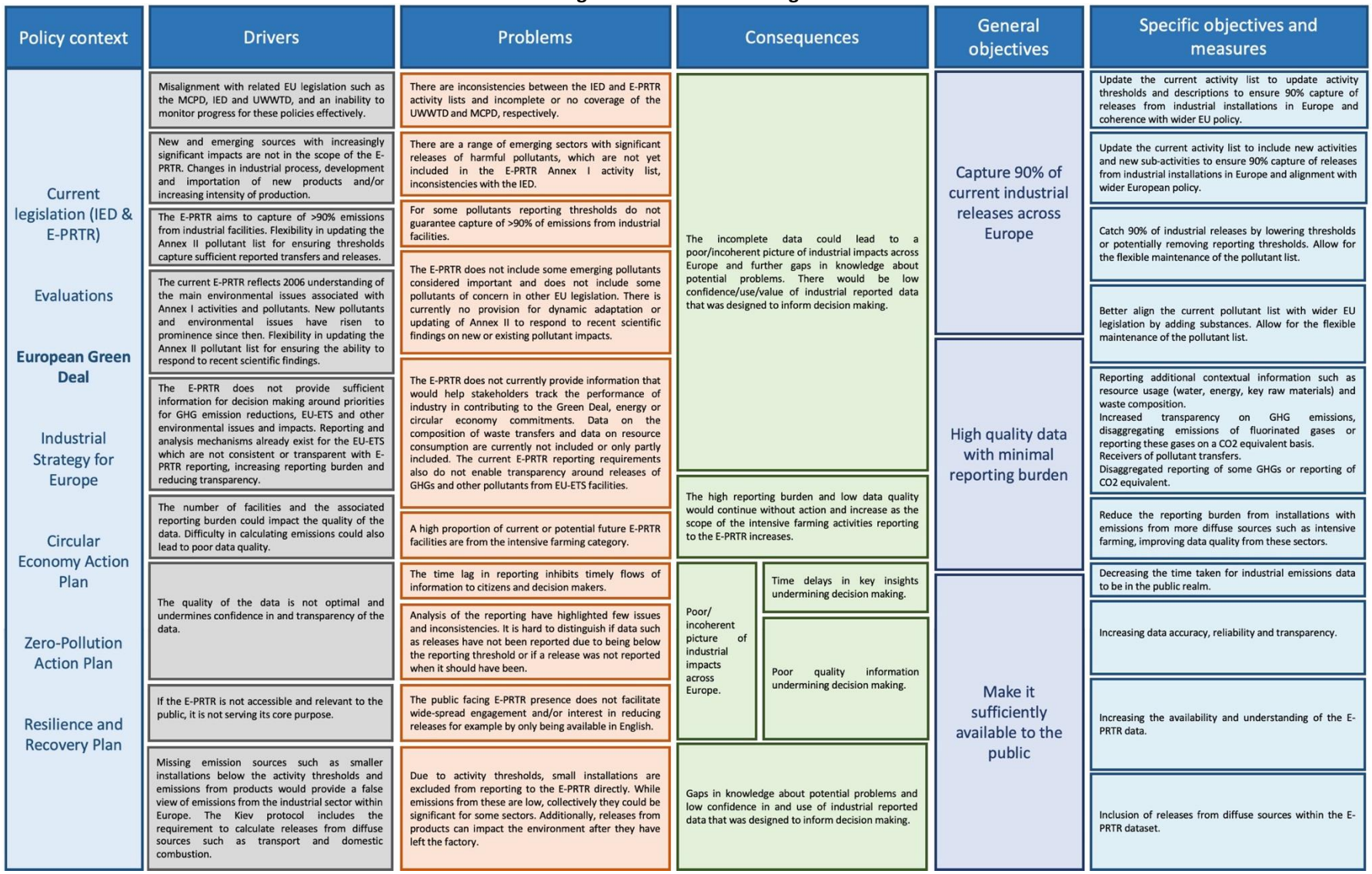
Table 3-1: Why should the EU act and what should be achieved?			
	How would the problem evolve without action?	***Why is action needed at the EU level?***	***Objectives for remediation***
circular economy and decarbonisation of industry	about potential problems. Additionally, there is a lower value of industrial reported data that was designed to inform decision making. Without action, this will continue to be the case.		transparency on GHG releases, disaggregating releases of fluorinated gases or reporting these gases on a CO_2 equivalent basis.
Problem 4a: Reporting modalities	The reporting burden and low data quality would continue without action and increase as the scope of the intensive farming activities reporting to the E-PRTR increases.	To improve the efficiency and quality of reporting across all Member States for decision making across Europe.	Reduce the reporting burden from installations with releases and increase the homogeneity of reported releases from more diffuse sources such as intensive farming improving data quality from these sectors.
Problem 4b: Time lag and data flows in reporting	A poor/incoherent picture of industrial impacts across Europe. Time delays in key insights and poor-quality information undermining decision making. Added burden in reporting poor quality or outdated data.	To improve the efficiency and quality of reporting across all Member States for decision making across Europe.	Decreasing the time taken for industrial releases and transfers data to be in the public realm.
Problem 4c: Inconsistent and incorrect reporting	A poor/incoherent picture of industrial impacts across Europe. Time delays in key insights and poor-quality information undermining decision making.	To improve the efficiency and quality of reporting across all Member States for decision making across Europe.	Increasing data accuracy, reliability and transparency.
Problem 5: Access to E-PRTR information	A poor/incoherent picture of industrial impacts across Europe. Poor quality information undermining decision making.	Action is required at the EU level as the E-PRTR is at the EU level. The E-PRTR also enables access to information from all MS, sectors and installations in a consistent manner.	Increasing the availability and understanding of the E-PRTR data.
Problem 6: Releases from diffuse sources and products	This problem is contributing to a poor/incoherent picture of industrial impacts across Europe, which will continue if not resolved. This could lead to gaps in knowledge about potential problems and low confidence in and use of industrial reported data that was designed to inform decision making.	To ensure a level playing field for industry and transparency for decision making across Europe.	Inclusion of releases from diffuse sources and products within the E-PRTR dataset.

Table 3-2: Intervention logic (detailed)									
Drivers									
Misalignment with related EU legislation such as the MCPD, IED and UWWTD and an inability to effectively monitor progress for these policies. The E-PRTR aims to capture >90% emissions from industrial facilities.	New and emerging sources with increasingly significant impacts are not within the scope of the E-PRTR. Changes in an industrial process, development and importation of new products and/or increasing intensity of production.	The E-PRTR aims to capture >90% emissions from industrial facilities. Flexibility in updating the Annex II pollutant list for ensuring thresholds capture sufficient reported transfers and releases.	The current E-PRTR reflects 2006 understanding of the main environmental issues associated with Annex I activities and pollutants. New pollutants and environmental issues have risen to prominence since then. Flexibility in updating the Annex II pollutant list for ensuring the ability to respond to recent scientific findings.	The E-PRTR does not provide sufficient information for decision making around priorities for GHG emission reductions, EU-ETS and other environmental issues and impacts (e.g. circular economy; air, water and soil pollution). Reporting and analysis mechanisms already exist for the EU-ETS, which are not consistent or transparent with E-PRTR reporting, increasing reporting burden and reducing transparency.	The number of facilities and the associated reporting burden could impact the quality of the data. Difficulty in calculating emissions could also lead to poor data quality.	The quality of the data is not optimal and undermines confidence in and transparency of the data.	The quality of the data is not optimal and undermines confidence in and transparency of the data.	If the E-PRTR is not accessible and relevant to the public, it is not serving its core purpose.	The E-PRTR is seen as an inventory of pollution from the industrial sector within Europe. Missing emission sources such as smaller installations below the activity thresholds and emissions from products would provide a false view of emissions from the industrial sector within Europe. The Kyiv protocol includes the requirement to calculate releases from diffuse sources such as transport and domestic combustion.
Problems									
Existing activity thresholds do not guarantee the capture of >90% emissions from industrial facilities There are inconsistencies between the IED and E-PRTR activity lists and incomplete or no coverage of the UWWTD and	There is a range of emerging sectors with significant releases of harmful pollutants, which are not yet included in the E-PRTR Annex I activity list. There are inconsistencies between the IED and E-PRTR activity lists.	For some pollutants, reporting thresholds do not guarantee the capture of >90% of emissions from industrial facilities. There is currently no provision for dynamic adaptation or updating of Annex II to respond to	The E-PRTR does not include some emerging pollutants considered important and does not include some pollutants of concern in other EU legislation. There is currently no provision for dynamic adaptation or updating of Annex II to respond to	The E-PRTR does not currently provide information that would help stakeholders track the performance of the industry in contributing to the Green Deal, energy or circular economy commitments. Data on the composition of waste transfers and	A high proportion of current or potential future E-PRTR facilities are from the intensive farming category.	The time lag in reporting inhibits timely flows of information to citizens and decision-makers.	Analysis of the reporting has highlighted a number of issues and inconsistencies. It is hard to distinguish if data such as releases have not been reported due to being below the reporting threshold or if a	The public-facing E-PRTR presence does not facilitate widespread engagement and/or interest in reducing releases, for example, by only being available in English.	As there are activity thresholds, small installations are excluded from reporting to the E-PRTR directly. While emissions from these smaller installations are low, collectively, these could be significant for some sectors.

Table 3-2: Intervention logic (detailed)									
MCPD, respectively.		recent scientific findings on new or existing pollutant impacts.	recent scientific findings on new or existing pollutant impacts.	data on resource consumption are currently not included or only partly included. The current E-PRTR reporting requirements also do not enable transparency around releases of GHGs and other pollutants from EU-ETS facilities.			release was not reported when it should have been.		Additionally, releases from products can impact the environment after they have left the factory. The Kyiv protocol also requires releases from diffuse sectors such as transport and domestic combustion to be calculated.
Consequences									
The incomplete data could lead to a poor/ incoherent picture of industrial impacts across Europe and further gaps in knowledge about potential problems. There would be low confidence/use/value of industrial reported data that was designed to inform decision making.					The high reporting burden and low data quality would continue without action and increase as the scope of the intensive farming activities reporting to the E-PRTR increases.	Poor/ incoherent picture of industrial impacts across Europe. Time delays in key insights undermining decision making.	A poor/ incoherent picture of industrial impacts across Europe. Poor quality information undermining decision making.	A poor/ incoherent picture of industrial impacts across Europe.	Gaps in knowledge about potential problems and low confidence in and use of industrial reported data that was designed to inform decision making.
General objectives									
Capture 90% of current industrial releases across Europe. High-quality data with minimal reporting burden. Make it sufficiently available to the public.									
Specific objectives and measures									
Update the current activity list to update activity thresholds and descriptions to ensure 90% capture of releases from industrial	**Update the current activity list to include new activities and sub-activities to ensure 90% capture of releases from**	**Catch 90% of industrial releases by lowering thresholds or potentially removing**	**Better align the current pollutant list with wider EU legislation by adding substances. Allow for the flexible**	**Reporting additional contextual information such as resource usage (water, energy, key**	**Reduce the reporting burden from installations with emissions from more**	**Decreasing the time taken for industrial emissions data to be in the public realm.**	**Increasing data accuracy, reliability and transparency.** • Below threshold confirmation	**Increasing the availability and understanding of the E-PRTR data.** • Improve promotion of the	**Inclusion of releases from diffuse sources within the E-PRTR dataset.** • Top-down calculation for

Table 3-2: Intervention logic (detailed)									
installations in Europe and coherence with wider EU policy. Revise capacity thresholds for: • Intensive livestock • Combustion plants • Landfills • Biological treatment of waste • Smitheries • Specific sub-sectors of the chemical industry • Independently operated wastewater treatment plants • UWWTP • Update the activity descriptions for: • Installations for gasification and liquefication • Cement production • Landfills • Combustion plants • Mining and quarrying	**industrial installations in Europe and align with wider European policy.** Include in the activity list: • Cattle farming • Mixed livestock farms • Upstream oil and gas • Data centres • Battery disposal and recovery • Plastic converters • Cold rolling and wire drawing • Textile finishing • Forging presses • Shipyards/dismantling • Metalworking • Intensive horticulture • Petrol storage • MgO production • CO2 capture • Additional subcategories for waste management	**reporting thresholds.** **Allow for the flexible maintenance of the pollutant list.** • Sunset list • Revise reporting thresholds for 11 air and 14 water pollutants • Remove pollutant thresholds • Legislative power to update pollutant lists and thresholds	**maintenance of the pollutant list.** • Addition of 53 pollutants to Annex II • Sunrise list	**raw materials) and waste composition.** **Increased transparency on GHG emissions, disaggregating emissions of fluorinated gases or reporting these gases on a CO_2 equivalent basis.** Require reporting of: • Energy use • Water use • Raw material use • Waste composition • Waste receivers for all waste • Receivers of pollutant transfers Disaggregated reporting of some GHGs or reporting of CO2 equivalent	**diffuse sources such as intensive farming improving data quality from these sectors** Top-down calculation methodology for intensive farming	• Reduce the reporting period to 3 months for all or some installations • Simultaneous reporting to EEA and CAs • Near real-time reporting for CEMs • Operators to establish a mandatory CMS • Incrementally improve the EEA reporting system	• Mandate sector-specific emission factors • Integrate IED monitoring with E-RPTR reporting • Use IED permits to mandate expected E-PRTR reporting • Guidance on indirect releases • Additional guidance on calculating emissions • Description field for accidental releases • Methodology reporting guidance • Alignment with EMAS regulation • Data reliability indicator • Remove reporting of releases to soil	availability of E-PRTR • Enhance website design and content • Provide guidance on how to access and use the data • Case studies/fact sheets on E-PRTR uses	diffuse emissions and other relevant activities • Calculate diffuse emissions from products • Calculate diffuse emissions from transport and domestic combustion

Figure 3-1: Intervention logic



4 Policy options to achieve the objectives

4.1 Baseline

4.1.1 Baseline development

The development of the baseline and analysis of options, including the development of baseline, was based on the principles set out in BR Guidelines Tool # 17. The baseline has been constructed in two stages: first, the current situation with the E-PRTR is defined based on the latest available data (2019); second, it has been considered how this may evolve into the future over the timescales for assessment.

The baseline is based on the following core elements:

- Number of reporting facilities broken down by sector, media and pollutant.
- Administrative burden (time/cost) for operators
- Administrative burden (time/cost) for Member States for data gathering and verification, enforcement and reporting to the Commission/EEA.
- Administrative burden (time/cost) for the Commission/EEA for data management, review, follow-ups with the Member States and updating the website.
- Data quality based on EEA verification activities.
- User statistics for the E-PRTR website.

The development over the assessment period is considered with respect to each of the problem areas defined above in Section 3. The main consideration is whether there are factors that could increase or decrease the problem. Overall, the baseline is expected to be a continuation of the current situation without much change. The number of reporting facilities is not expected to change significantly. There may be some changes in the number of pollutants that some facilities may report on (likely reduction) where actions are being taken under related legislation (in particular the IED) to reduce emissions. However, this is highly uncertain. Wider legislation that might be revised or introduced could mean that existing or new facilities have to monitor more pollutants or parameters, but with no changes to E-PRTR scope (activities, pollutants and associated thresholds), no significant changes to the current situation would be expected.

4.1.2 Baseline summary

This section provides an overview of the information used for the definition of the baseline.

1. Number of reporting installations broken down by sector, media and pollutant

The figures below present the current status of reporting to the E-PRTR. The baseline numbers were sourced from V4 of the EEA's industrial reporting database. The number of reporting facilities is based on data reported to the EU Registry, which is not impacted by pollutant thresholds, and where available, data reported for reporting year 2019 were used. However, 2019 data were not available for all countries so 2018 data were used for Italy, and 2017 data for Lithuania, Portugal and Slovakia. The number of releases and transfers was based on data reported to the integrated E-PRTR/LCP reporting and, as with the number of facilities, data from reporting year 2019 were used where available. However, 2018 data were the latest available for Italy, and 2017 data were used for Germany, Latvia, Lithuania, Portugal and Slovakia.

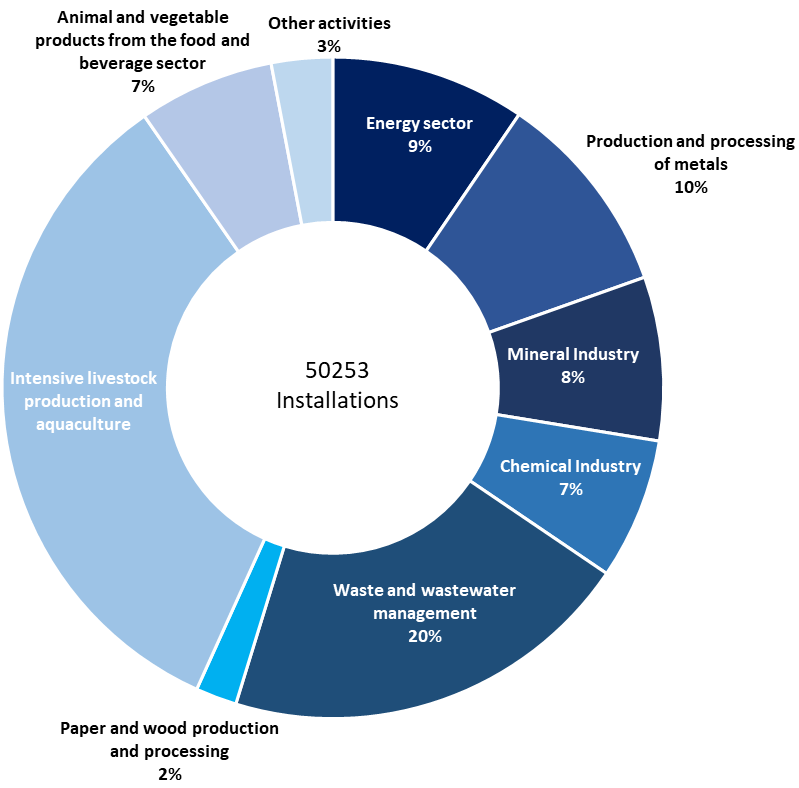


Figure 4-1: Sectoral breakdown of facilities reporting to the EU Registry / E-PRTR

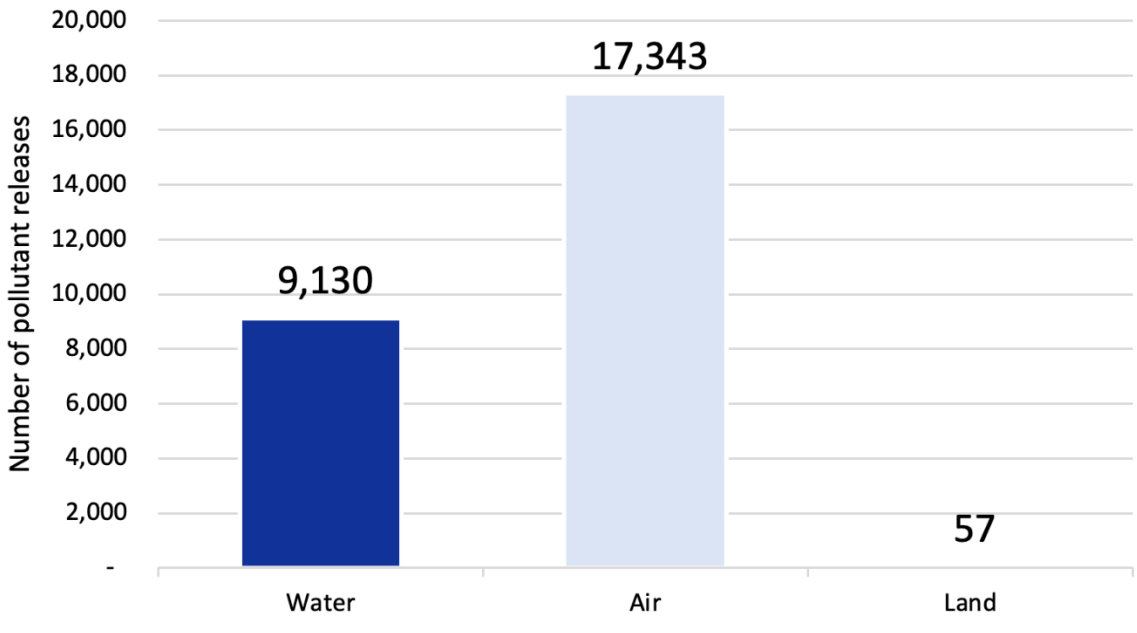


Figure 4-2: Annual number of pollutant releases reported by medium

2. Administrative burdens

The administrative burdens associated with the requirements of the E-PRTR Regulation derive from the following activities: data collection and reporting for the operators, quality assurance and data

management for Member States competent authorities and the EEA, with the latter bearing the costs for website maintenance too.

The baseline recurrent cost for an average or typical facility has been estimated at 50 hours or around €2,000 per year. The one-off costs are difficult to estimate. Facilities under the existing E-PRTR have incurred the one-off costs when they first came under the E-PRTR Regulation. If is it is assumed that the one-off costs are depreciated over 20 years, the annualised one-off costs for the average/typical facility could be in the order of €440. This is based on the assessment that the one-off costs are around three times the recurrent costs. Hence, the total annual costs for an average or typical facility could be in the order of €2,440. These costs are estimated to vary by +/- 50% depending on the activities concerned and complexity of the facilities e.g. numbers of processes, installations, pollutants to be reported etc. More details on the methodology and assumptions used to estimate the administrative burdens are presented in Section 4.2.

3. Data quality based on EEA verification activities

ICF et al. (2020) assessed the quality of reported information and drew some recommendations for its improvements. There are three method classes (measurement, "M"; calculation, "C"; or estimation, "E") used to categorise reported data. The type of release quantification method used (method class) can have a significant impact on the quality of values reported to the E-PRTR. Measurement and calculation are usually more accurate than estimation. However, over 50% of measurement and calculation reports are not transparent, and incompatible combinations of method class and methodology used are common. Variations in the methods used can also impact the quality of the time series of data in the E-PRTR and comparability between facilities. For the most commonly reported pollutants, methods remain stable over time, while for the least commonly reported pollutants, methods vary over time, sectors and facilities.

ICF et al. (2020) lists a number of recommendations for the improvement of the E-PRTR Guidance document and reporting tools. Some of the recommended actions have been assumed to be part of the baseline, as they would be and are being implemented even in the absence of new EU-level action. These are:

- Promote the use of sector-specific release factors for some activities;
- Provide guidance on methodology for calculating releases, especially indirect releases to water;
- Add completeness checks for the reporting of which methodology is used;
- Add a description field for accidental releases;
- Develop guidance on how to report M/C/E for multiple release sources;
- Add an indication of whether the facility is registered under the EMAS Regulation.

4. User statistics for the E-PRTR website

The supporting study to the evaluation of the E-PRTR Regulation (Amec and IEEP, 2016) analysed the access to the E-PRTR website. Between July 2011 and January 2014, a total of 221,712 sessions[20] were recorded, corresponding to an average of 242 sessions per day. Over a quarter of sessions were from new users, while around 9% of sessions corresponded to second visits and only around 2.4% of sessions to users visiting the site more than 200 times. Direct acquisition (sessions that accessed the website by typing the URL or from a previously saved bookmark) was the main acquisition channel,

[20] Amec and IEEP (2016): *Google defines a session as "a period time a user is actively engaged with the website" and as "the container for the actions a user takes on the site". In practical terms a session is equivalent to a user navigating the webpage until s/he leaves or becomes inactive.*

followed by referral from other websites and organic search (search on search engines). Sessions reaching the website from social media were only a minimal fraction.

It should be noted that the EEA launched a new portal in June 2021.

5. New activities

The table below shows the number of facilities for each potential new sector to be included under the E-PRTR broken down by different capacity thresholds.

Table 4-1: Number of additional facilities	
Threshold	**No of additional facilities above activity threshold**
Cattle farming	
Threshold >450 LSU	8,523
Threshold >300 LSU	26,624
Threshold >150 LSU	120,727
Battery production, disposal and recovery	
Threshold to be defined	70
Sub-category for forging presses, cold rolling & wire drawing	
Capacity threshold (forging presses, cold rolling) >10 t/h Capacity threshold (wire drawing) >2 t/h	350
Sub-sector for textile finishing	
Inclusion of textile finishing	76
Sub-activity for shipyards/dismantling	
Inclusion of shipyards/dismantling	6
MgO production in kilns	
Threshold > 50 t/day	25
CO_2 capture	
Include capture of CO_2 streams for geological storage with no threshold	9
Additional sub-categories and improved descriptions for 5(a) Installations for the recovery or disposal of hazardous waste & 5(b) Installations for the incineration of non-hazardous waste	
Ensure that disposal includes incineration/co-incineration and include recovery	0
Additional sub-category for temporary storage of hazardous waste	
Inclusion of temporary storage of hazardous waste	9

6. Revised activities

The table below shows the number of facilities that would be captured by changing the activity thresholds or the activity and sub-category definitions.

Table 4-2: Number of additional facilities	
Threshold	**No of additional facilities above activity threshold**
IRPP	
Threshold >450 LSU	8,647
Threshold >300 LSU	19,007
Threshold >150 LSU	40,064
Landfills	
Threshold < 10 tonnes per day	0
Smitheries	
No capacity threshold	733 (unclear how many report with current pollutant reporting thresholds)

Table 4-2: Number of additional facilities	
Threshold	**No of additional facilities above activity threshold**
Independently operated industrial wastewater treatment plants	
Remove the 10,000 m3/day capacity threshold	421
Installation for gasification and liquefaction	
Add sub-categories to include coal and "other fuels"	0
Installations for the production of cement	
Re-assign the sub-categories for cement production	0
Thermal power stations and other combustion installations	
Align activity description for 1(c) with aggregation rules of IED (legislative option)	0
Threshold >5 MWth	21,590
Threshold >20 MWth	4,946
Treatment and processing intended for the production of food and beverage products from: (i) Animal raw materials (other than milk) (ii) Vegetable raw materials	
Update the 8(b) activity description to include feed production	0
Urban wastewater treatment plants	
Threshold >2,000 p.e.	23,621
Threshold >20,000 p.e.	4,277

4.2 Screening of policy measures

One hundred and fifty-eight (158) initial (sub-)policy measures were developed. An initial screening was undertaken to test their suitability and whether or not they should be retained for more detailed analysis. Twenty-seven (27) were excluded from further analysis. The screening considered a set of criteria for determining which options to include or discard as set out in BR Guidelines Tool #17[21]. In relation to this study, the criteria have been interpreted as follows:

- **Legal feasibility**: Policy measures must respect and obligation from EU Treaties, any relevant international agreements and ensure and respect fundamental rights. Legal obligations incorporated in existing or secondary EU legislation must also be taken into account. In general, we would not expect legal feasibility to be a major issue.
- **Technical feasibility**: Technological and technical constrains may impact implementation, monitoring and/or enforcement of policy measures. While not directly technically unfeasible, there could be cases where monitoring or measurements of certain pollutants / parameters could be difficult.
- **Coherence with other EU policy objectives**: Policy measures should be coherent with other general EU policy objectives. Several of the problem/improvement areas come from a desire to increase coherence by aligning definitions of sectors/activities or reporting requirements.
- **Effectiveness and efficiency**: This has been interpreted as the potential increased reporting burden or costs of implementation that a policy measure may lead to. The main trade-off relevant for the majority of the options will be between covering a large share of the releases and facilities while not placing too high a reporting burden on a large number of facilities.
- **Proportionality:** Some measures may clearly have a poor balance in relation to the importance of the additional releases or contextual data compared to the costs of collecting them.
- **Political feasibility**: Measures that would clearly fail to garner the necessary political support for legislative adoption and/or implementation could also be discarded.

[21] https://ec.europa.eu/info/sites/default/files/file_import/better-regulation-toolbox-17_en_0.pdf

- **Relevance**: When it can be shown that two measures are not likely to differ materially in terms of their significant impacts or their distribution, only one should be retained.

The screening has been largely qualitative since it is not possible to conduct a detailed analysis of such a long list of measures. Some of the required information came from the recently completed Commission study on 'Review of E-PRTR implementation and related guidance' – other, more subjective and specific indicators (such as political feasibility) were informed by discussion with the Commission, the results of the public and/or targeted consultation(s), reviewing the responses to earlier consultations, and/or expert judgement. Each measure from the long list was given a corresponding colour: green, yellow or red; green when the measure fulfils the criteria, yellow when it is not clear, and red if the measure is not feasible. Where a measure is considered green across all the criteria then was retained. If marked red on a single criterion, then the measure was discussed with the Commission and excluded if deemed appropriate. Where a measure was marked as yellow (with or without green) then the measure was also retained for further assessment. The process was an iterative one, where the result of the impact assessment led to changes to the definition of the measures. This helped to further elaborate the measures in terms of what they would entail in practice and also to define the data assessment needs and to gather the associated data. The core data that were collected are:

- How to set appropriate capacity/activity thresholds – this was gathered as part of the baseline development, i.e. numbers of facilities within a given sector broken down by different activity/capacity bandings.
- Costs of monitoring/measuring/calculating and then reporting releases and transfers of the relevant pollutants and/or parameters (plus the extent to which it may already be gathered under other legislation, e.g. IED).
- The objective for the E-PRTR is to capture 90% of the releases from a certain sector/activity. For the long list of potential new sectors/activities/pollutants/parameters, data on the releases and other parameter levels and activity were gathered from a mix of sources, including:

  - Eurostat industry statistics.
  - Specific studies of the environmental impacts of the sector or the substance (some of which may be collated as part of the IED impact assessment).
  - National emission inventories.
  - Reporting under other EU legislation (e.g. IED).
  - Stakeholder consultation.

Table 4-3 presents the discarded policy measures along with the reason for being screened out. In addition, 14 policy measures, such as updates to guidance, were identified as baseline measures and therefore also not included in the more detailed analysis. Table 4-4 lists the policy measures retained for full assessment and summarises how they correlate to the problem areas and the five overall policy options (plus the baseline) that have been defined in the context of the parallel revisions of the E-PRTR Regulation and the IED, i.e.:

- Effectiveness: set of measures to ensure greater homogeneity of implementation and level of ambition across Member States;
- Innovation: set of measures to provide frontrunners the flexibility to test novel techniques;
- Resource use and chemicals: measures to encourage resource efficiency and reduced toxicity;
- Decarbonisation: more detailed GHG emissions reporting coupled with measures to empower sector-specific responses for achieving depollution and decarbonisation; and
- Sectoral scope: measures to widen the scope of both the E-PRTR Regulation and the IED.

Table 4-3: Discarded policy measures		
Problem Area	**Measure Title**	**Reason for screening out**
1a	Revise thresholds for biological treatment of waste	Analysis of PRTR data with activity thresholds below the E-PRTR show no facilities reporting releases or transfers undertaking biological treatment of waste below the current E-PRTR activity threshold. It is therefore anticipated that there will be a minimal increase in capture of releases/transfers with a potentially high increase in reporting burden to operators and Competent Authorities for the EU Registry dataflow.
1a	Revise activity thresholds for urban waste water treatment plants (1,000 p.e.)	The urban waste water treatment directive only defines requirements for plants over 2,000 p.e., therefore this policy would not only reduce coherence with this legislation it may be technically difficult for many Member States, due to not regulating facilities of this size. Additionally, this policy option could increase the reporting burden on operators and Competent Authorities substantially.
1a	Revise activity thresholds for urban waste water treatment plants (5,000 p.e.)	It is anticipated that no UWWTPs between 5,000 and 2,000 p.e would be required to report to the E-PRTR therefore this measure would not reduce the reporting burden in comparison to the threshold of 2,000 p.e and result in misalignment between the E-PRTR and UWWTP.
1a	Revise activity thresholds for urban waste water treatment plants (10,000 p.e.)	It is anticipated that only 4% of UWWTPs between 10,000 and 2,000 p.e would be required to report to the E-PRTR therefore this measure would not significantly reduce the reporting burden in comparison to the threshold of 2,000 p.e and result in misalignment between the E-PRTR and UWWTP.
1a	Revise activity thresholds for urban waste water treatment plants (50,000 p.e.)	Previous analysis estimated that reducing the threshold to 15,000 (p.e) would require an additional 1,300 - 6,000 facilities to report under the E-PRTR and capture 50% to 70% of releases from this sector (SR14 report). Reducing the threshold to 50,000 p.e would capture a lower proportion of releases from this sector and therefore not be an effective measure to increase the capture of releases to water from UWWTP.
1a	Expand activity scope of mining and quarrying activities (3(a) & 3(b)) to align with potential IED revision	The IED revision proposal suggests aligning the scope of this activity with the current E-PRTR scope therefore this option is no longer necessary.
1a	Revised thresholds for specific sub-sectors of activity 4 chemical industry	Small scale chemical facilities are unlikely to currently meet the pollutant reporting thresholds and therefore are unlikely to be currently reporting to the E-PRTR. It is therefore considered that this policy would not be an effective measure.
1b	Include mixed livestock farms	This measure overlaps too significantly with the policy option to update the activity thresholds of activity 7(a) to LSU (thresholds of 150, 300 and 450 LSU are being considered) and as such was discarded. Updating the threshold to LSU would also result in mixed livestock farms being included within scope of the E-PRTR.
1b	Include data centres in activity list	While data centres are potentially interesting in terms of energy usage the majority of releases from these installations is expected will be from combustion activities. However, while some will likely be regulated by the MCPD or even the LCPD and therefore fall under activity 1(c), especially is the threshold for this activity is reduced. However, many of the generators installed within these facilities are for back-up purposes only and would not be expected to be in use except for testing and emergencies so annual

Table 4-3: Discarded policy measures		
Problem Area	**Measure Title**	**Reason for screening out**
		releases are not anticipated to be high and likely below the ELVs specified in the combustion plant directives and E-PRTR pollutant release thresholds. As such this policy option may be technically difficult if emissions are not monitored from these sites and not result in many benefits with regards to additional capture of releases/transfers compared to the increased reporting burden.
1b	Include new activity of plastic convertors	The level of pollution produced by this activity is not well understood beyond releases of micro-plastics and as the European Plastics Convertors association (EuPC) identifies that there are around 50,000 medium and small plastic convertor businesses across Europe it is anticipated that the increased reporting burden would outweigh the benefits of capturing the potentially low number of releases and transfers from this activity.
1b	Include and additional sub activity for metal working	With the variety of activities that fall under metal working it is difficult to define a production-based throughput threshold and potentially EFs or methodology to measure emissions for these activities.
1b	Include intensive horticulture activities in activity list	While contextual information such as consumption levels may be useful from this activity, the majority of these facilities have a closed loop system and therefore releases are expected to be low. In addition, it is unknown if measurement methodologies and emission factors are available for this activity. As such the increased burden, and associated costs, are unlikely to be outweighed by the benefit of capture of a small number of releases from this activity.
1b	Include petrol storage	Depending on the reporting threshold, this could potentially result in a large number of additional facilities reporting to the E-PRTR. The additional VOC releases this would include within the E-PRTR is unlikely to outweigh the additional reporting burden and associated costs.
2a	Remove the pollutant reporting thresholds	This policy option would result in a large number of additional facilities, many of which would be SMEs, reporting to the E-PRTR but the benefit of the additional releases captured would not be significant. It is unlikely to garner the necessary political support.
2b	Include fluorinated ethers and alcohols in the Annex II pollutant list	This is a very broad pollutant group definition and therefore there are no harmonised methods of measurement for this group of pollutants, although there are methods for specific substances. Additionally, as the pollutant group definition is so broad it is not anticipated to increase the value of the E-PRTR dataset and as such the increased reporting burden, and associated costs, will outweigh the benefits.
2b	Additional pollutants for inclusion - Microplastics, i.e. materials consisting of solid polymer-containing particles, where ≥ 1% w/w of particles have (i) all dimensions 1nm ≤ x ≤ 5mm, or (ii), for fibres, a length of 3nm ≤ x ≤ 15mm and length to diameter ratio of >3.	There is no harmonised method for measurement of microplastics. A 2009 report from NOAA includes "Methods to isolate microplastics from surface waters (net tows, filters), sediments, and organisms are desperately needed before further progress can be made in this field."

Table 4-3: Discarded policy measures		
Problem Area	**Measure Title**	**Reason for screening out**
2b	Additional pollutants for inclusion - nitrogen trifluoride (NF3)	No measurement methodology was identified as such this pollutant should not be included in the Annex II pollutant list yet.
2b	Additional pollutants for inclusion - Total suspended particulate (TSP)	While this pollutant is already required to be monitored under the IED Annex II, TSP is the same as total dust. Particulate Matter of a small size is considered far more important to human health and PM_{10} is already included in the pollutant list. The addition of this outdated pollutant is therefore not expected to increase the value of the dataset and as such the increased reporting burden, and associated costs, will outweigh the benefits.
2c	Include combustion plants between 1 MW and 50 MW	Include combustion plants with a capacity of 1-50 MW in the activity list. This should include the aggregation rules of the MCPD (aggregate if waste gases go through a common stack or the competent authority judges them to).
4b	Reduce reporting period to 3 months for all facilities	While reducing the reporting period to three months from the end of the reporting year would decrease the time before the data is available to the public this is likely to reduce the data quality, which would go against the aim of the updating the E-PRTR legislation, or require a large increase in resource from MS competent authorities. This will be especially difficult for entities which are regulated at the more local level and where the data passes through a chain of competent authorities before being reported to the EEA. This increased burden on Competent Authorities will likely result in this option failing to get the necessary political support.
4b	Reduce reporting period to 3 months for some facilities	As with the previous sub option, this policy option is likely to reduce the data quality or require a large increase in resource from MS competent authorities, although the staggered approach would not require as large an increase in resource. This increased burden on Competent Authorities will likely result in this option failing to get the necessary political support.
4b	Require simultaneous direct reporting to EEA as well as to competent authorities	This policy option has the potential to help to reduce the reporting time lag however would require a significant increase in resource within the EEA in order to undertake the simultaneous QA. Additionally, the QA undertaken by CAs, especially the more local authorities, that are closer to the facilities reporting and have a better understanding of what is expected from them is more likely to identify errors than that done by the EEA. This measure could therefore reduce the E-PRTR data quality. This measure is also procedurally very complex and is therefore unlikely to garner the necessary political support.
4b	Near real time reporting for CEMs	This policy option could result in limited review of release data by operators and competent authorities and may result in different versions of release being published. It is unlikely to garner the necessary political support.
4b	Operators to establish a mandatory CMS	Operators to establish a mandatory chemical management system (CMS) as part of the environmental management system to include tracking and assessment of hazardous chemicals. It would not be possible to implement this policy option through the E-PRTR legislation.

Table 4-3: Discarded policy measures		
Problem Area	**Measure Title**	**Reason for screening out**
4c	Integrate IED monitoring with E-PRTR reporting	Integrate IED monitoring requirements in permits and align with E-PRTR reporting. Require that, where pollutants are required to be monitored within IED permits, the releases reported to the E-PRTR are based on those monitoring results and not calculated or estimated. It is anticipated that this policy option would fail to garner the necessary political support within the European Commission for legislative adoption.
4c	Mandate reporting of expected pollutants for specific installations	It is anticipated that this policy option would fail to garner the necessary political support within the European Commission for legislative adoption.
4c	Create a data reliability indicator	Defining and reporting objective data reliability criteria for different release quantification methods was judged to result in limited benefits compared to the costs of implementing such an indicator. It is unlikely to garner the necessary political support.
4c	Remove reporting of releases to soil	It is anticipated that this policy option would fail to garner the necessary political support for legislative adoption as there has been recent interest in pollution to soils.

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
Baseline	1a: Current activity thresholds and definitions	Provide guidance on aggregating 1(c) thermal power stations to align with IED aggregation rules [#12b] = **SWD Baseline**	The IED contains aggregation rules for the definition of LCPs (E-PRTR activity 1(c)). The E-PRTR activity description would be updated to explicitly include the same rules for aggregation. The rule is that plants will be considered a single combustion plant if they share a single stack (or can be judged to by the competent authority). Additionally, for determining if a plant is a large combustion plant, the plants below 15 MW are not included but would be included in the total rated thermal input, e.g. an entity where plant 1 = 20MW, plant 2 = 30 MW, plant 3 = 10 MW would be an LCP of 60 MW but one where plant 1= 10 MW, plant 2 = 10 MW, plant 3 = 30 MW it would not be considered an LCP. This policy option would be to update the guidance to specify this aggregation rule.
	4b - Time lag and data flows in reporting	Incrementally improve the EEA reporting system [#51] = **SWD Baseline**	Improve the EEA's system for reporting by refining and updating the data transfer templates and tools and guidance for MS CAs. Provide support to MS to use the XML reporting format and with developing their own facility-level reporting tools. Also, improve processes for automated submission checking and rapid turn-around of questions and answers with MS CA to fast-track the data submission process. While the online QA is already undergoing continuous improvement, this should continue in the future, with the checks being regularly evaluated for fitness and strictness.

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
	4c - Inconsistent and incorrect reporting	Promote the use of sector-specific release factors for some activities [#53] = **SWD Baseline**	Mandate use of sector-specific emission factors in some cases. The applicability would depend on the potential environmental impact, for example, sectors where measurement is not practicable.
		Provide guidance on methodology for calculating releases, especially indirect releases to water [#56] = **SWD Baseline**	Harmonise or provide guidance on the quantification of indirect releases to air, water and soil, i.e. releases that do not pass through a stack.
		Add completeness checks for the reporting of which methodology is used [#59] = **SWD Baseline**	The online QA for the EU Registry currently only checks to ensure that the method classification value of "WEIGH" is only used for waste. There are no further automatic checks on the methodology reporting (beyond one for completeness of reporting). Additional checks of the reporting of the methodology should be implemented in order to prevent the reporting of invalid combinations of methodCode and methodClassification.
		Add a description field for accidental releases [#60] = **SWD Baseline**	Include a description field for describing the incident and a link to the Seveso notifications under the eMARS where accidental releases occurred. This would be to prevent releases from being reported as accidental releases.
		Develop guidance on how to report M/C/E for multiple release sources [#61] = **SWD Baseline**	Additional reporting guidance on how to assign M/C/E facilities with several release sources.
		Add an indication of whether the facility is registered under the EMAS Regulation [#62] = **SWD Baseline**	E-PRTR reports for facilities registered under the Eco-Management and Audit Scheme (EMAS) Regulation may be considered more reliable. Competent authorities could use EMAS registration and quantification procedures to support E-PRTR reporting. Incorporate into E-PRTR reporting an indicator if a facility is registered under EMAS.
	5 - Access to EPRTR information	Improve promotion of availability of the E-PRTR [#65] = **SWD Baseline**	Changes to the current promotion and availability of the E-PRTR. DG ENV and EEA making other institutions aware of the data. Facilitate the availability and use of the E-PRTR for national inventories and/or national inventory review. Facilitate the mapping between E-PRTR and national inventory categories (NFR for Air Pollutants and CRF for GHGs). Include in the E-PRTR an assessment of the E-PRTR versus national inventory data and make this publicly available.
		Enhance website design and content, better links to national PRTRs [#66] = **SWD Baseline**	Changes to the website design and content. In particular, having the website text available in multiple languages. Also, develop more data viewers, e.g. see EEB industrial data viewer http://eipie.eu/projects/ipdv.
		Provide more guidance on how to access and use the data [#67] = **SWD Baseline**	Produce guidance/best practices on how to advertise the existence and use of the E-PRTR better in Member States. Produce public briefings on the data in the E-PRTR highlighting key aspects of the dataset (trends, top polluters, best improvers, etc.).

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
		Case studies/fact sheets on E-PRTR uses [#68] = **SWD Baseline**	Produce case studies/fact sheets on how E-PRTR has been used by MS, European agencies and institutions, NGOs and researchers.
	6 - Releases from diffuse sources and releases from products	Deliver Article 8 requirements by cross-referencing to other existing data sources on diffuse releases [#69 & 71] = **SWD Baseline**	Make use of other reporting mechanisms, such as for the NECD and WISE, to estimate releases from other anthropogenic sources not covered in Annex I such as agricultural activities, transport and domestic combustion in order to fulfil the Article 8 obligation. This exercise could be required every few years.
PO1 Effectiveness	1a: Current activity thresholds and definitions	Clarify that activity 3(b) covers upstream oil and gas facilities [#16] = **SWD E-PRTR#6**	While guidance provided by the Commission in 2011 stated that extraction of crude oil and natural gas fell under the underground mining and related operations activity, this policy option would create an explicit activity definition. This policy option has been proposed by the IED Impact Assessment, and therefore to ensure coherence between reporting, the exact threshold(s) and activity definition to be considered will be informed by this process.
		Remove 3(d) production of asbestos from activity list [#17]	Remove the production of asbestos from the activity list.
		Reword 5(d) landfills activity description to include flaring of vent gas [#11] = **SWD E-PRTR#8**	Include flaring of vent gas in the description to ensure reporters understand this should be included.
	2a: Existing pollutants and thresholds	Reduce reporting thresholds for some existing pollutants to better meet the aim of 90% capture [#33a-x / n=24] = **SWD E-PRTR#1**	Reduce reporting thresholds for some existing pollutants.
		Establish a 'sunset list' to remove pollutants that are no longer of concern [#32] = **SWD E-PRTR#5**	Creating a more dynamic mechanism to identify a list of pollutants for future removal due to them being longer relevant ("sunset list"). No pollutants were suggested for removal in the E-PRTR analysis report; however, 24 chemicals included in the pollutant list are no longer permitted to be used in Europe and therefore could potentially be removed in the future.
	4a: Reporting modalities	Add an option for top-down reporting for activity 7 (intensive livestock production and aquaculture) [#46] = **SWD E-PRTR#9**	Allowing a top-down calculation approach for intensive farming activities. This could be implemented using four methods: • MS reporting for the sector on a national level; • CAs using a top-down approach and reporting an average release for every farm; • Operators and CAs reporting livestock numbers only (via the productionVolume field) and emission calculations being done by the EEA;

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
			• Operators reporting livestock numbers to CAs and emission calculations being completed by the CAs.
	4c: Inconsistent and incorrect reporting	Introduce sub-facility reporting [#45] = **SWD E-PRTR#2**	Reporting releases/transfers on an activity basis instead of aggregating to the facility level.
		Add active operator confirmation that releases are below the reporting threshold [#52] = **SWD E-PRTR#3**	Require affirmation that expected pollutants for a sector are below the reporting threshold or not present at all and avoid the ambiguity of missing values.
		Mandate the M/C/E hierarchy [#58] = **SWD E-PRTR#4**	Mandate the MCE hierarchy for reporting releases, e.g. releases should be measured where possible, and calculation should take precedent overestimation.
PO2 Innovation	N/A	No measures retained	-
PO3 Circular Economy, Resource Efficiency and Safer Chemicals	2b: Additional pollutants	Establish a mechanism for dynamic updating to include additional pollutants of immediate interest and future interest (sunrise list) [#37] = **SWD E-PRTR#10**	Inclusion of a more dynamic mechanism to identify and include emerging pollutants of concern ("sunrise list"). This will include pollutants that have the potential to become important for environmental issues in Europe. This would be similar to the WFD watch-list process.
	3: Information to track progress towards the circular economy and decarbonisation of industry	Require the reporting of energy use [#38] = **SWD E-PRTR#11**	Require the reporting of energy use, which would allow assessment of energy and carbon efficiencies.
		Require the reporting of water use [#39] = **SWD E-PRTR#12**	Require the reporting of water use in order to allow for better assessment of the impacts of industry on the environment beyond pollution.
		Require the reporting of raw material use [#40] = **SWD E-PRTR#13**	Require the reporting of raw material use in order to be better able to assess energy and carbon efficiencies.
		Reporting waste composition of waste transfers [#41] = **SWD E-PRTR#14**	Require reporting of the composition of waste transfers using the Waste Framework Directive waste codes (EWC waste code).
		Improve tracking of waste transfers [#42] = **SWD E-PRTR#15**	Require the reporting of waste receivers for all waste transfers, not just transboundary hazardous waste transfers.
		Improve tracking of waste water transfers [#43] = **SWD E-PRTR#16**	Require the reporting of the receivers of wastewater transfers (as currently done for transboundary hazardous waste transfers).
	6 - Releases from diffuse sources and releases from products	Reporting releases from products [#70] = **SWD E-PRTR#17**	Make use of other reporting streams, such as for the NECD and WISE, and/or carry out a specific Commission study for the calculation of releases from products during consumer use, as advocated in Article 5(9) of the Aarhus Convention. This exercise could be required every few years.

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
PO4 Decarbonisation	3: Information to track progress towards the circular economy and decarbonisation of industry	Disaggregation of some currently reported GHGs (e.g. HFCs, PFCs) [#44a] = **SWD E-PRTR#18**	Reporting GHGs like HFCs and PFCs as specific pollutants instead of as a group.
		Require GHG releases to be also reported as CO_2 equivalent [#44b] = **SWD E-PRTR#18**	Reporting GHGs like HFCs and PFCs in a mass of CO_2e.
PO5 Industrial scope	1a: Current activity thresholds and definitions	Revise capacity thresholds for 7(a) IRPP [#1 – sub-options consider thresholds of 150, 300 and 450 LSU] = **SWD E-PRTR#21**	Reduce activity thresholds of poultry and pig farming to capture a higher proportion of pollutant releases from this activity. This policy option has been proposed by the IED Impact Assessment, and therefore to ensure coherence between reporting, the exact threshold(s) to be considered will be informed by this process.
		Revise capacity threshold for 5(d) landfills [#3] = **SWD E-PRTR#27**	Increase the coverage of landfill sites by decreasing the activity threshold to less than 10 tonnes per day. This policy option has been proposed by the IED Impact Assessment, and therefore to ensure coherence between reporting, the exact threshold(s) to be considered will be informed by that process.
		Revise capacity threshold for 2(c)(ii) smitheries [#5 – sub-options consider no calorific power threshold or a calorific power threshold of 5 MW] = **SWD E-PRTR#26**	Reduce the activity threshold for activity 2(c)(ii). It is currently 50 kJ per hammer, where the calorific power exceeds 20 MW. This will help to cover a larger proportion of the sector's releases, especially to air. This policy option has been proposed by the IED Impact Assessment, and therefore in order to ensure coherence between reporting, the exact threshold(s) to be considered will be informed by that process.
		Revise capacity threshold of 5(g) independently operated industrial waste water treatment plants to align with the IED activity description [#8] = **SWD E-PRTR#28**	Remove the 10,000 m^3/day capacity threshold for activity 5(g) - Independently operated industrial wastewater treatment plants which serve one or more activities of Annex I to align with the activity description of the IED.
		Include sub-categories for 1(b) installations for gasification and liquefaction to include coal and "other fuels" to better align with the IED sub-categories [#9] = **SWD E-PRTR#28**	Include sub-categories to include coal and "other fuels" to better align with the IED subcategories.
		Include product sub-categories for 3(c) cement production [#10] = **SWD E-PRTR#28**	Re-assign the subcategories for cement production to be product categorised as done in the IED, e.g. production of cement in rotary kilns and other kilns, production of lime in kilns etc. This may cause some time-series consistency issues for historical data.

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
		Align activity description for 1(c) thermal power stations with IED aggregation rules [#12a] = **SWD E-PRTR#28**	The IED contains aggregation rules for the definition of LCPs (E-PRTR activity 1(c)). The E-PRTR activity description would be updated to explicitly include the same rules for aggregation. The rule is that plants will be considered a single combustion plant if they share a single stack (or can be judged to by the competent authority). Additionally, for determining if a plant is a large combustion plant, the plants below 15 MW are not included but would be included in the total rated thermal input, e.g. an entity where plant 1 = 20 MW, plant 2 = 30 MW, plant 3 = 10 MW would be an LCP of 60 MW but one where plant 1 = 10 MW, plant 2 = 10 MW, plant 3 = 30 MW it would not be considered an LCP. This policy option would be to update the legislation to specify this aggregation rule.
		Reword 8(b) production of food and beverage products activity description to include feed products to align with the IED activity description [#72] = **SWD E-PRTR#28**	Align with IED activity definition by rewording 8(b) to include feed products.
		Revise capacity thresholds for 1(c) combustion plants to 5 MWth and for 5(f) UWWTPs to 2,000 p.e. [#2] = **SWD E-PRTR#29 and #30**	Include combustion plants with a capacity of 5-50 MW in the activity list. This should include the aggregation rules of the MCPD (aggregate if waste gases go through a common stack or the competent authority judges them to). Change capacity thresholds for UWWTP from 100,000 p.e. to 2,000 p.e to increase releases coverage.
		Revise capacity thresholds for 1(c) combustion plants to 20 MWth and for 5(f) UWWTPs to 20,000 p.e. [#2] = **SWD E-PRTR#29 and #30**	Include combustion plants with a capacity of 20-50 MW in the activity list. This should include the aggregation rules of the MCPD (aggregate if waste gases go through a common stack or the competent authority judges them to). Change capacity thresholds for UWWTP from 100,000 p.e. to 20,000 p.e to increase releases coverage.
	1b: Missing activities and sub-activities	Add intensive cattle farming [#15 – sub-options consider thresholds of 150, 300 and 450 LSU] = **SWD E-PRTR#20**	It is proposed to include an additional activity in Annex I of the E-PRTR covering intensive cattle farms. This policy option has been proposed by the IED Impact Assessment, and therefore to ensure coherence between reporting, the exact threshold(s) and activity definition to be considered will be informed by this process.
		Include battery production, disposal and recovery [#18] = **SWD E-PRTR#22**	Include battery production, disposal and recovery in the activity list. The link to the Batteries Directive will need to be considered. This policy option has been proposed by the IED Impact Assessment, and therefore in order to ensure coherence between reporting, the exact threshold(s) and activity definition to be considered will be informed by this process.

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
		Include an additional sub-sector for forging presses, cold rolling & wire drawing [#20] = **SWD E-PRTR#24**	Include an additional sub-sector for forging presses, cold rolling and wire drawing under activity 2 (production and processing of metals). This policy option has been proposed by the IED Impact Assessment, and therefore in order to ensure coherence between reporting, the exact threshold(s) and activity definition to be considered will be informed by this process.
		Inclusion of an additional 9(a) sub-sector for textile finishing [#21] = **SWD E-PRTR#25**	Inclusion of textile finishing in the activity list under activity 9 (other activities). This would potentially be reassigning the activity code for "plants for the pre-treatment (operations such as washing, bleaching, mercerisation) or dyeing of fibres or textiles" as 9(a)(i) and creating the additional activity 9(a)(ii) for textile finishing. This policy option has been proposed by the IED Impact Assessment, and therefore to ensure coherence between reporting, the exact threshold(s) and activity definition to be considered will be informed by this process.
		Include an additional 9(d) sub-activity for shipyards / dismantling [#23] = **SWD E-PRTR#28**	Include an additional sub-activity under 9 (other activities) for shipyards/dismantling. Currently, only building of ships and painting or removal of paint from ships is included in the activity list as 9(e). This policy option has been proposed by the IED Impact Assessment, and therefore to ensure coherence between reporting, the exact threshold(s) and activity definition to be considered will be informed by this process.
		Add MgO production in kilns with a threshold of 50 t/day to 3(c) so as to align with IED activity 3.1(c) [#27] = **SWD E-PRTR#28**	Include MgO production in Kilns with a threshold of 50 t/day to align with IED activity 3.1(c).
		Include capture of CO_2 streams for geological storage with no threshold so as to align with IED activity 6.9 [#28] = **SWD E-PRTR#28**	Include capture of CO_2 streams for geological storage with no threshold to align with IED activity 6.9.
		Add additional sub-categories and improved descriptions for 5(a) & 5(b) waste treatments so as to align with the IED activity descriptions and ensure reporters know that disposal includes incineration/co-incineration. Additionally, include recovery in the activity definition [#29] = **SWD E-PRTR#28**	Align categories 5(a) and 5(b) with the IED activity descriptions to ensure reporters know that disposal includes incineration/co-incineration. Specifically, this would involve the introduction of subcategories to match IED activities 5.1 and 5.2(b) and, additionally, include recovery in the definition.

Table 4-4: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures			
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID]***	**Description**
		Add an additional hazardous waste sub-category for temporary storage so as to align with IED activity 5.6 temporary storage of hazardous waste [#30] = **SWD E-PRTR#28**	IED activity 5.6 - temporary storage of hazardous waste is not included in the E-PRTR activities list and should be considered for inclusion.
		Establish a dynamic mechanism to identify and include emerging activities of concern ('sunrise list' for activities) [#31] = **SWD E-PRTR#31**	Inclusion of a more dynamic mechanism to identify emerging sectors of concern ("sunrise list"). This will include sectors that have the potential to become important for environmental issues in Europe. This would be similar to the WFD watch-list process and the proposed E-PRTR sunrise prevision for pollutants.
*Notes: *This table refers to two different numbering of the policy measures considered: the numbers used in this report (between [#]) and the numbering used in the Commission Staff Working Document. The numbering changes because the SWD combines E-PRTR policy measures with IED policy measures.*			

5 Impacts of the policy options

5.1 Identification and screening of impacts

This section details the impacts of each policy option across specific impact categories structured by overall problem area. All key economic, environmental, and social impacts of the policy measures across the core stakeholders – public authorities (including Member State competent authorities, the EEA and European Commission), industry (large and smaller businesses) and citizens and workers – have been identified, mapped, and screened. A rapid assessment of the expected absolute and relative magnitude of the impacts and their likelihood was carried out in line with Tool #19 of the Better Regulation Toolbox.[22] When selecting the most relevant and significant impacts, the following criteria were considered:

- The **relevance** of the impact within the intervention logic developed for the evaluation: this assesses whether the impact is relevant to assess the direct contribution of the policy options to the objectives for amending the Regulation.
- The expected absolute **magnitude** of the expected impacts.
- The relative size of expected **impacts for specific stakeholders:** this considers whether any of the impacts will be particularly relevant and significant for specific stakeholder groups, even if the impact overall may be small. In particular, this considers whether impacts will be concentrated on specific Member States or industry and whether it will add to the existing regulatory burden for any specific stakeholder group. Given the characteristics of the sectors involved in reporting to the E-PRTR impacts on SMEs are not expected to be significant, however this will be further investigated and may be particularly relevant in the context of inclusion of any additional sectors e.g. cattle farms.
- The **importance for Commission's horizontal objectives and policies**: this considers whether the impact is relevant to determine any trade-offs between the objectives for amending the Regulation and other EU objectives and policies.

The outcome of this step is the final list of impacts that have been examined, indicating whether they are likely to be positive or negative (using the following signs: ++, +, o, -, --) and which stakeholder groups they are most likely to impact. Colour coding is used to summarise the impacts for individual measures referring to the direction (positive or negative) and size (small or large) of any expected impacts (see Table 5-1).

Table 5-1: Coding used to present expected impacts

--	-	O	+	++	U
Strongly negative	Weakly negative	No or limited impact	Weakly positive	Strongly positive	Unclear

The result of this screening is that ten economic, environmental, and social impact categories were selected for in-depth impact assessment (outlined in Table 5-2).

[22] European Commission. TOOL#19 Identification-screening of impacts (europa.eu)

Table 5-2: Significant impacts for in-depth assessment and those that have been screened out			
Impact category	**Significance**	**Impact on key stakeholder groups**	**Justification for inclusion / exclusion**
Economic impacts included			
Administrative burdens on businesses	--	Industrial operators	The E-PRTR and any potential revisions have cost implications for industrial operators related to the monitoring and reporting of environmental data. They may increase for existing operators if new pollutants/parameters and/or lower reporting thresholds are adopted. However, there may also be some benefits with more advanced digital technologies and/or top-down reporting for some sectors.
Operation / conduct of SMEs	- / O	SMEs are not a significant part of the affected sectors.	The impact is not expected to be significant as the E-PRTR activity and reporting thresholds typically exclude smaller operations. This was also confirmed as part of the IED evaluation (recognising that there is significant alignment on activities between the two instruments). However, as some of the policy measures may consider revising or removing reporting thresholds as well as including new activities (e.g. cattle) this impact has been retained in the assessment where relevant for specific options.
Public authorities: Change in costs to authorities for administrative, compliance and enforcement activities	-	Member State competent authorities (at local, regional and/or national levels depending on PRTR responsibilities).	Changes to the scope and focus of the E-PRTR will have impacts for Member State authorities in terms of data collection, verification, management, reporting and enforcement activities.
Public authorities: Change in costs to the Commission / EEA	-	European Commission / EEA	Changes to the scope and focus of the E-PRTR will have impacts for the EEA primarily in terms of data collection, reviews, management and website activities.
Environmental impacts included			
The climate	+	No specific group is impacted	One of the policy measures assessed considers the refinement of reporting of GHG releases to the E-PRTR. Furthermore, the potential for reporting on resource use (e.g. energy) has also been assessed. Whilst such options will not directly impact on emissions of GHG and energy use, indirectly they provide an incentive to improve performance as the data will be publicly available enabling benchmarking across sectors / Member States.
Efficient use of resources	+	No specific group is impacted	Some of the policy measures assessed include improvements for reporting on waste data and potential for reporting on resource use. Whilst such options will not directly impact on resource use, indirectly they provide an incentive to improve performance as the data will be publicly available enabling benchmarking across sectors / Member States.

Table 5-2: Significant impacts for in-depth assessment and those that have been screened out			
Impact category	**Significance**	**Impact on key stakeholder groups**	**Justification for inclusion / exclusion**
Quality of natural resources / fighting pollution (water, soil, air etc.)	++	No specific group is impacted	Whilst the E-PRTR in its current form, as well as with any of the potential revisions to be assessed, does not directly cause industrial facilities to reduce pollution, indirectly it provides an incentive to improve performance as the data is / will be publicly available enabling benchmarking across sectors / Member States.
Reducing and managing waste	+	No specific group is impacted	One of the policy options for assessment includes improvements for reporting on waste data. Whilst such options will not directly impact on resource use, indirectly they provide an incentive to improve performance as the data will be publicly available enabling benchmarking across sectors / Member States.
Social impacts included			
Reduced health impacts due to lower pollutant emissions	+	Public	Improved public data on plant performance should provide incentive to reduce emissions and improve compliance with existing permitting requirements.
Governance, participation and good administration: Improved public access to information	++	Public	The fundamental objective of the E-PRTR is to make available to the public data on the environmental performance of industrial facilities across the EU. Any potential revisions would only improve the quality and quantity of data available.
Impacts excluded			
International environmental impacts	O	No specific group is impacted	Whilst the E-PRTR and any potential policy options for assessment do not require reductions in pollution directly, indirectly the data can provide an incentive for facilities to improve performance. This is true within the EU but may also provide an incentive for operators outside of the EU as they can see how European plants perform and what level of environmental protection is possible. However, the impacts on operators outside of the EU are expected to be minimal.
Functioning of the internal market and competition	O	Industrial operators	Whilst the E-PRTR and any potential revisions in scope and focus would have cost implications for industrial operators, these are expected to be minimal relative to overall operating costs and would therefore have very limited, if any, impacts on overall competition.
Macroeconomic environment	O	Industrial operators primarily	Whilst the E-PRTR and any potential revisions in scope and focus would have cost implications for industrial operators, these are expected to be minimal relative to overall operating costs and would therefore have very limited, if any, impacts on employment and overall profitability.
Innovation and research	+	Industrial operators, Member State authorities, monitoring	Potential improvements in reporting modalities could help drive innovation in the collection, management and reporting of environmental data under the E-PRTR. However, such impacts are unlikely to be significant. Potential efficiency gains

Table 5-2: Significant impacts for in-depth assessment and those that have been screened out			
Impact category	**Significance**	**Impact on key stakeholder groups**	**Justification for inclusion / exclusion**
		equipment suppliers, EEA	have been considered under administrative burdens.
Technological development / digital economy	+	Industrial operators, Member State authorities, monitoring equipment suppliers, EEA	Potential improvements in reporting modalities could help drive innovation in the collection, management and reporting of environmental data under the E-PRTR. However, such impacts are unlikely to be significant. Potential efficiency gains have been considered under administrative burdens.
Operating costs and conduct of business	-	Industrial operators	The E-PRTR Regulation and any potential revisions have cost implications for industrial operators related to the monitoring and reporting of environmental data. These have been shown to be low relative to overall operating costs. They have been assessed under administrative burdens hence why this specific impact is excluded.

5.2 Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures

Across each of these specific categories, a range of costs and benefits have been considered and, where possible, quantified. For the E-PRTR, the most important impacts relate to administrative costs and the benefits associated with access to information (including improvements in the data being reported, greater coverage of activities, pollutants and other parameters). These have been considered relative to the baseline.

The following sections outline the analysis structured by policy option and measures within each problem area. The table below summarises how the E-PRTR policy measures correlate to the E-PRTR problem areas and overall policy options.

Table 5-3: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures		
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID] = SWD measure ID**
Baseline	**1a: Current activity thresholds and definitions**	Provide guidance on aggregating 1(c) thermal power stations to align with IED aggregation rules [#12b] = **SWD Baseline**
	4b - Time lag and data flows in reporting	Incrementally improve the EEA reporting system [#51] = **SWD Baseline**
	4c - Inconsistent and incorrect reporting	Promote the use of sector-specific release factors for some activities [#53] = **SWD Baseline**
		Provide guidance on methodology for calculating releases, especially indirect releases to water [#56] = **SWD Baseline**
		Add completeness checks for the reporting of which methodology is used [#59] = **SWD Baseline**
		Add a description field for accidental releases [#60] = **SWD Baseline**
		Develop guidance on how to report M/C/E for multiple release sources [#61] = **SWD Baseline**
		Add an indication of whether the facility is registered under the EMAS Regulation [#62] = **SWD Baseline**

Table 5-3: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures		
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID] = SWD measure ID**
	5 - Access to EPRTR information	Improve promotion of availability of the E-PRTR [#65] = **SWD Baseline**
		Enhance website design and content, better links to national PRTRs [#66] = **SWD Baseline**
		Provide more guidance on how to access and use the data [#67] = **SWD Baseline**
		Case studies/fact sheets on E-PRTR uses [#68] = **SWD Baseline**
	6 - Releases from diffuse sources and releases from products	Deliver Article 8 requirements by cross-referencing to other existing data sources on diffuse releases [#69 & 71] = **SWD Baseline**
PO1 Effectiveness	**1a: Current activity thresholds and definitions**	Clarify that activity 3(b) covers upstream oil and gas facilities [#16] = **SWD E-PRTR#6**
		Remove 3(d) production of asbestos from activity list [#17]
		Reword 5(d) landfills activity description to include flaring of vent gas [#11] = **SWD E-PRTR#8**
	2a: Existing pollutants and thresholds	Reduce reporting thresholds for some existing pollutants to better meet the aim of 90% capture [#33a-x / n=24] = **SWD E-PRTR#1**
		Establish a 'sunset list' to remove pollutants that are no longer of concern [#32] = **SWD E-PRTR#5**
	4a: Reporting modalities	Add an option for top-down reporting for activity 7 (intensive livestock production and aquaculture) [#46] = **SWD E-PRTR#9**
	4c: Inconsistent and incorrect reporting	Introduce sub-facility reporting [#45= **SWD E-PRTR#2**]
		Add active operator confirmation that releases are below the reporting threshold [#52] = **SWD E-PRTR#3**
		Mandate the M/C/E hierarchy [#58] = **SWD E-PRTR#4**
PO2 Innovation	**N/A**	No measures retained
PO3 Circular Economy, Resource Efficiency and Safer Chemicals	**2b: Additional pollutants**	Establish a mechanism for dynamic updating to include additional pollutants of immediate interest and future interest (sunrise list) [#37] = **SWD E-PRTR#10**
	3: Information to track progress towards the circular economy and decarbonisation of industry	Require the reporting of energy use [#38] = **SWD E-PRTR#11**
		Require the reporting of water use [#39] = **SWD E-PRTR#12**
		Require the reporting of raw material use [#40] = **SWD E-PRTR#13**
		Reporting waste composition of waste transfers [#41] = **SWD E-PRTR#14**
		Improve tracking of waste transfers [#42] = **SWD E-PRTR#15**
		Improve tracking of wastewater transfers [#43] = **SWD E-PRTR#16**
	6 - Releases from diffuse sources and releases from products	Reporting releases from products [#70] = **SWD E-PRTR#17**
PO4 Decarbonisation	**3: Information to track progress towards the circular economy and decarbonisation of industry**	Disaggregation of some currently reported GHGs (e.g. HFCs, PFCs) [#44a] = **SWD E-PRTR#18**
		Require GHG releases to be also reported as CO_2 equivalent [#44b] = **SWD E-PRTR#19**
PO5 Industrial scope	**1a: Current activity thresholds and definitions**	Revise capacity thresholds for 7(a) IRPP [#1 – sub-options consider thresholds of 150, 300 and 450 LSU] = **SWD E-PRTR#21**
		Revise capacity threshold for 5(d) landfills [#3] = **SWD E-PRTR#27**

Table 5-3: Mapping of policy options, E-PRTR problem areas and E-PRTR policy measures		
Policy option	**E-PRTR problem areas**	**E-PRTR policy measures [#measure ID] = SWD measure ID**
		Revise capacity threshold for 2(c)(ii) smitheries [#5 – sub-options consider no calorific power threshold or a calorific power threshold of 5 MW] = **SWD E-PRTR#26**
		Revise capacity threshold of 5(g) independently operated industrial waste water treatment plants to align with the IED activity description [#8] = **SWD E-PRTR#28**
		Include sub-categories for 1(b) installations for gasification and liquefaction to include coal and "other fuels" to better align with the IED sub-categories [#9] = **SWD E-PRTR#28**
		Include product sub-categories for 3(c) cement production [#10] = **SWD E-PRTR#28**
		Align activity description for 1(c) thermal power stations with IED aggregation rules [#12a] = **SWD E-PRTR#28**
		Reword 8(b) production of food and beverage products activity description to include feed products to align with the IED activity description [#72] = **SWD E-PRTR#28**
		Revise capacity thresholds for 1(c) combustion plants to 5 MWth and for 5(f) UWWTPs to 2,000 p.e. [#2] = **SWD E-PRTR#29 and #30**
		Revise capacity thresholds for 1(c) combustion plants to 20 MWth and for 5(f) UWWTPs to 20,000 p.e. [#2] = **SWD E-PRTR#29 and #30**
	1b: Missing activities and sub-activities	Add intensive cattle farming [#15 – sub-options consider thresholds of 150, 300 and 450 LSU] = **SWD E-PRTR#20**
		Include battery production, disposal and recovery [#18] = **SWD E-PRTR#22**
		Include an additional sub-sector for forging presses, cold rolling & wire drawing [#20] = **SWD E-PRTR#24**
		Inclusion of an additional 9(a) sub-sector for textile finishing [#21] = **SWD E-PRTR#25**
		Include an additional 9(d) sub-activity for shipyards / dismantling [#23] = **SWD E-PRTR#28**
		Add MgO production in kilns with a threshold of 50 t/day to 3(c) so as to align with IED activity 3.1(c) [#27] = **SWD E-PRTR#28**
		Include capture of CO_2 streams for geological storage with no threshold so as to align with IED activity 6.9 [#28] = **SWD E-PRTR#28**
		Add additional sub-categories and improved descriptions for 5(a) & 5(b) waste treatments so as to align with the IED activity descriptions and ensure reporters know that disposal includes incineration/co-incineration. Additionally, include recovery in the activity definition [#29] = **SWD E-PRTR#28**
		Add an additional hazardous waste sub-category for temporary storage to align with IED activity 5.6 temporary storage of hazardous waste [#30] = **SWD E-PRTR#28**
		Establish a dynamic mechanism to identify and include emerging activities of concern ('sunrise list' for activities) [#31] = **SWD E-PRTR#31**
Notes: This table refers to both the numbering used in this report (between [#]) and the numbering used in the Commission Staff Working Document.		

5.3 Assessment of significant impacts

5.3.1 Approach and assumptions

As for the baseline, the main economic impacts related to policy measures for the revision of the E-PRTR Regulation relate to administrative burden i.e. data collection, reporting and Quality Assurance (plus EEA data management and website maintenance). The EU Standard Cost Model applies to administrative costs such as reporting costs. It estimates costs of a given reporting provision as:

Administrative cost = Σ P x Q

where P (for Price) = Tariff x Time;

and where Q (for Quantity) = Number of businesses x Frequency

In relation to the reporting under the E-PRTR, the costs elements are:

- Tariff = hour salary for relevant staff
- Time = hours to perform the reporting activity
- Number of businesses = number of facilities that have to report
- Frequency: once per year expect for measures/options including more frequent reporting

At the generic level, reporting activities also comprise one-off costs, which relate to adapting the data collection, calculation and reporting systems, training, instruction and similar activities needed to enable the annual reporting. For one-off costs, the frequency is one; otherwise, the costs are estimated with the same formula used for recurrent reporting costs.

Table 5-4 describes the assumptions and values used for the definition of the baseline and the options assessment.

Table 5-4: General assumptions for economic impacts

Element	Value	Reference
Salary rate	40 EUR/hour	Rate for professionals - Eurostat data
Discount rate	4%	Better Regulation Guidelines
Lifetime of one-off activities	20 years (unless specified for a particular activity)	Expert assumption – used for annualising one-off costs.

For annualization of one-off costs, the technical or economic lifetime of the investment typically provides the guiding value. For changes to data collection and reporting requirements, there is no simple lifetime to use as a basis for the annualization. Changes to reporting systems will last for as long as the system is applied. If a company changes its IT system used for the reporting, it is unlikely that the costs will be significantly affected by the number of pollutants or parameters that are being reported. This would suggest that a long lifetime should be applied. On the other hand, staff turnover could mean that one-off costs should be repeated within a shorter period. It should be noted that the parallel study on the revisions to the IED has also used a lifetime of 20 years as the default value.

The assumption of 20 years is a medium-term to long term lifetime and intended to balance the different factors, while also ensuring consistency with the assessment of IED measures.

The specific administrative costs include the following elements:

- Business: Reporting by facilities

- Member State CAs: Data checking and QA
- EEA

  - Data checking
  - Publishing new data or revising webpages by EEA

Data and approach for each stakeholder type are presented below.

Reporting costs for business

Changes to the reporting costs of facilities depend on the specific measure, but three generic situations can be distinguished:

1. A facility comes under scope of the E-PRTR for the first time and has to start reporting.
2. Existing facilities have to report additional pollutants.
3. Existing facilities have to report new parameters.

For each generic situation, the unit costs of reporting for a facility have been estimated.

1. New facilities have to report

The time required for reporting for a facility that is under the E-PRTR is estimated based on the time required for the current scope of the Regulation. Review of the results from the evaluation points to around 22 hours per operator (facility) per year. Findings from the targeted stakeholder survey (TSS) suggests resource use that is slightly higher than this estimate.

There are specific data from the Netherlands that have estimated the total costs for all operators at €12m per year. As the Netherlands have about 3,400 facilities, the average annual costs per facility is in the order of €3,500. This is somewhat higher and corresponds on average to about 70 hours per facility per year.

It is assumed that the average for an EU facility is somewhere between the 22 and 70 hours referenced above. Hence, we apply 50 hours as representing a medium complexity facility, where complexity for a reporting facility is determined at a sector level considering factors such as likely number of activities and processes per facility, number of plants / installations, number of stacks, number of pollutants to be reported per environmental media and number of waste / wastewater transfers. It is assumed that low level of complexity requires half the resources as the medium level, while high complexity is double the hours used for medium complexity reporting. The estimated hours per facility is therefore:

- Low complexity reporting: 0.5*50 hours = 25 hours
- Medium complexity reporting: 50 hours
- High complexity reporting: 2* 50 hours = 100 hours

There is limited evidence on the start-up costs for new facilities/activities. It is assumed that the start-up costs (one-off costs) are three times the annual costs.

Based on these assumptions, the follow unit costs were estimated for a new facility being brought into the scope of the E-PRTR. These unit costs are applied to assess changes in activity thresholds and adding new activities, both leading to new facilities having to report.

Table 5-5: Unit costs for new facilities in €			
Level of complexity	**One-off costs in €**	**Recurrent costs in € per year**	**Total annual costs in €**
Low	3,000	990	1,210
Medium	5,900	1,980	2,410
High	11,900	3,950	4,830

The unit costs are used to estimate the reporting costs which are administrative costs. Given that the reporting is beyond what is "normal" business operation, the administrative costs can be categorised as an administrative burden. The terms reporting costs, administrative costs and administrative burden are used to express the economic impact on business and all express the same costs.

2. *Existing facilities have to report new pollutant/pollutant threshold changes*

The above unit costs are applied to new facilities coming in scope. For additional pollutants, the reporting costs will also increase for the existing facilities that might have to report an additional pollutant. There are two categories:

- Existing activity and existing pollutant where the reporting threshold is changed
- Existing activity where a new pollutant has to be reported

When changing reporting thresholds for existing pollutants, it is assumed only a very marginal increase in the annual reporting costs. Existing facilities have to check whether they emit above or below the threshold so they should have the data ready: the additional cost is in adding one more data point to the annual report. Hence, it is assumed that there are no one-off costs but only the annual burden of reporting the existing pollutant(s). It is assumed that this requires one additional hour of work per year.

In case of a new pollutant the assumptions are different, as the facility operator will not already be assessing releases of that pollutant for the E-PRTR. In total, there are about 100,000 data points on individual releases and transfers being reported annually[23] which means that each facility on average reports only two values. Operators will have to consider additional pollutants to those currently reported to verify whether these are below the reporting thresholds. For most pollutants, this verification may be a one-off exercise and may not have to be repeated every year. Only when a facility reports for the first time, the operator may have to consider most or all pollutants. Only if the activity changes significantly (either in nature or volume), the operator may have to reconsider a longer list of pollutants. It is assumed that, on average, facility operators consider ten pollutants every year for reporting. This is based on a review of the Spanish PRTR which has no reporting thresholds. Facilities report, on average, on five air and five water pollutants, so ten in total.

It means that the annual reporting cost per pollutant is about five hours (50 hours in total and ten pollutants). The pollutants that are being considered for inclusion are typically related to other legislation. It is therefore likely that facilities already monitor or calculate these emissions. However, it is assumed that some changes to existing data collection, calculation and reporting systems may be required initially upfront to enable annual reporting. Evidence on how much time is required for these upfront changes is very limited. It is assumed, based on expert judgement, that these one-off changes equate to three times the annual recurrent time and costs for reporting.

[23] Extracts from the E-PRTR database. Sum of pollution releases, pollution transfers and waste transfers.

Table 5-6: Costs for new pollutants or new thresholds for existing pollutants				
Type of change	**One-off**		**Recurrent**	
	Hours	**Costs in €**	**Hours**	**Costs in € per year**
Existing pollutant with new threshold	0	0	1	40
New pollutant	15	600	5	200

3. *Cost for new parameters – water use, energy, raw materials etc. – and changes to reporting of GHGs and at activity level*

The last type of change relevant for industry include the reporting of other parameters. They include use of energy, water and raw materials, as well as a set of minor changes to the reporting of waste releases and transfers and reporting at activity level.

The costs of reporting these parameters have been assessed relative to the costs of reporting pollutants covered by the current scope. Energy and water use are assumed to be similar to the current pollutants and therefore, the additional reporting costs will be equivalent to including a new pollutant. For other raw materials, their reporting is assumed to be much more complex. There are multiple raw materials, potentially used across multiple processes and activities so collecting data on their use and reporting it is assumed to be more onerous than the other parameters.

Table 5-7 presents the assumptions used for the assessment.

Table 5-7: Costs for new parameters, changes to reporting of GHGs and reporting at activity level		
Parameter	**Scaling factor (relative to new pollutant estimates)**	**Justification**
Energy use	1	Assumed to be equivalent to having to report a new pollutant - all data should already be collated and easy to report
Water use	1	
Other raw materials	5	Will vary in complexity significantly between and within different sectors depending on number of factors e.g. products, processes etc.
Parameter	**Scaling factor (relative to existing pollutant estimates)**	**Justification**
Waste composition	0.5	Already reporting on waste transfer - this would just add waste composition information which should be readily available.
Waste transfer tracking improvements	0.5	Already reporting on waste transfer - this would just add where transfer goes to.
Pollutant transfer (wastewater) tracking improvement	0.5	Already reporting on waste transfer - this would just add where transfer goes to.
Reporting GHGs like HFCs and PFCs as specific pollutants instead of as a group.	0.25	Already being reported – this would just require some additional time for reporting the data at a more disaggregated level.
Reporting GHGs like HFCs and PFCs in mass of CO2e.	0.25	Already being reported – this would just require some additional time for reporting the data in different units.
Reporting releases/transfers and other applicable fields on an activity	2	Already likely to be calculated / measured at this level but adding more complexity in terms of reporting.

Table 5-7: Costs for new parameters, changes to reporting of GHGs and reporting at activity level		
Parameter	**Scaling factor (relative to new pollutant estimates)**	**Justification**
basis instead of aggregation to the facility level.		

Validation of cost estimates and assumptions through stakeholder focus group

The estimated unit costs and supporting assumptions have been tested and validated with stakeholders during focus group discussions. Stakeholders generally felt that the order of magnitude seems right, but there could be very complex installations where the reporting costs could be higher than those estimated. It was also noted in the focus group discussion that, in addition to the level of complexity of the facility, the degree of automated reporting, and therefore the IT infrastructure, is an important factor. Gathering data manually can be very time consuming, so the presence of automated systems (often in the more complex facilities) reduces the reporting costs. There are no data on which type of facilities has or is more likely to have such automated reporting systems.

Data management by Member State CAs

The cost drivers for changes in the costs for Member State CAs are also:

- Changes in the number of reporting facilities.
- Changes to the number of pollutants being reported.

Costs incurred due to changes in the number of reporting facilities

Data from the TSS covers estimates from 12 Member States. They provide a basis for assessing the average costs. Though not all Member States are represented, the data cover both small and large Member States as well as the regions.

Based on these data, the average number of working days per facility has been calculated. The estimate is 0.4 working day per installation, which is equivalent to about 2.8 hours per installation.[24] The resource use for CAs can be estimated using similar assumptions to those used for operators: low level of complexity implies half the number of hours than for the average facility and high level of complexity means twice the resource use. For one-off costs, it is assumed that these are three times the annual costs.

These unit costs are applied to estimate the burden for CAs when new facilities within an existing activity start reporting to the E-PRTR e.g. if the activity threshold is reduced.

Table 5-8: Unit costs for CAs when new facilities within an existing activity are reporting			
Level of complexity	**One-off costs in €**	**Recurrent costs in € per year**	**Total annual costs in €**
Low	170	60	70
Medium	330	110	130
High	660	220	270

[24] Derived applying the average number of working hours in EU of 36.2 hours per week.

Where a new activity is to be added – for example cattle farming – the one-off costs for CAs are expected to be higher than for an existing activity as more changes will be required to existing data flows and to set up the relevant QA tools etc. Here it is assumed that the one-off costs are two times higher (Table 5-9).

Table 5-9: Unit costs for CAs for a new activity adding new facilities

Level of complexity	One-off costs in €	Recurrent costs in € per year	Total annual costs in €
Low	330	60	80
Medium	660	110	160
High	1,320	220	320

The change of reporting thresholds for pollutants implies that more facilities may have to report emissions and therefore additional time would be needed by CAs to check the reported data. The inclusion of new pollutants to Annex II implies that there may be one-off costs for CAs to establish how they will check reported data for new pollutants as well as recurring annual costs for checking new pollutants.

The specific cost estimates are derived in the following way: based on the average costs for CAs per facility and upscaling to the total number of around 50,000 facilities, the total CA costs for the 27 Member States can be estimated at €5.5m per year. Currently, 91 pollutants and around 100,000 data points are reported, resulting in costs of €60,000 per pollutant per year and of €55 per data point per year.

For the inclusion of new pollutants, the costs for CAs will depend on how many facilities are likely to report emissions of the added pollutants. In addition, if in one revision several new pollutants are added, the costs will not be proportional to the number of new pollutants. It is assumed that the costs of adding new pollutants will be €6,000 per pollutant per year. Furthermore, for adding a new pollutant, it is assumed that there will be a one-off cost which is estimated as three times the annual costs.

Table 5-10: Unit costs for CAs for existing pollutant with new threshold and new pollutant

	One-off costs		Recurrent costs	
	Unit	Costs in €	Unit	Costs in € per year
Existing pollutant with new threshold	No one-off costs	0	Cost per facility reporting	55
New pollutant	Cost per pollutant	18,000	Cost per pollutant	6,000

Data management by EEA

The activities that the EEA performs in relation to the E-PRTR includes:

- Managing the IT systems
- Developing and maintaining the reporting tools
- QA/QC of the data reported by Member States
- Support to Member States
- Use of data and publication.

The estimates of resources and costs are presented in the table below.

Table 5-11: Unit costs for CAs for a new activity adding new facilities		
Activity	**Resource use in FTE**	**Costs in €**
IT	1	100,000
Reporting tools	0.2	18,750
QA/QC	0.9	93,750
Support to MS	0.4	37,500
Use of data and publication	1.0	100,000
Total	3.5	350,000

While the management of IT systems is not affected by any of the considered measures, the other activities might be affected. The costs are defined for the same type of changes assessed for the industries and Member State CAs.

Given that the EEA does not check data from individual installations, it is assumed that adding facilities will not increase the EEA costs. Only if new pollutants / activities are added, there will be minor costs for adapting the database, etc. This cost is estimated at around €2,800. It is based on the costs for IT, reporting tools, support to MS and use of data.

It is assumed that the inclusion of new activities, new pollutants and new parameters may require some one-off costs. These are estimated in the following way: the resource used for all the activities are added excluding only the costs of the QA/QC process, as this is automated. The total costs of the other activities are €256,250 per year. There are 91 pollutants being reported and it is assumed that the costs of adding a new activity, pollutant or parameter will require costs in the order of €256,250 divided by 91. The assumptions for the EEA are presented in Table 5-12.

Table 5-12: Unit costs EEA	
Type of change	**One-off costs in €**
More facilities reporting	No additional costs
Changing activity thresholds	No additional costs
Changing thresholds for pollutants	No additional costs
Adding new activity	2,816
Adding new pollutants	2,816
Adding new parameters	2,816

5.3.2 PO1: Effectiveness, information access and simplification

E-PRTR problem area 1a: Current activity thresholds and definitions

The definitions of some activities require clarification to improve reporting.

Clarify that activity 3b covers upstream oil and gas facilities [#16] = SWD E-PRTR#6

Description of the measure

This measure would entail the addition of upstream oil and gas industries to the Annex I activity list. Whilst guidance provided by the Commission in 2011 stated that extraction of crude oil and natural gas fell under the underground mining and related operations activity this policy option would create an explicit activity definition for this activity. It would also align with the potential expansion in scope of the IED.

Economic impacts

Three specific categories of economic impacts were selected for an in-depth assessment of the policy measures for the revision of the E-PRTR Regulation. These include impacts on administrative burdens on businesses, operation / conduct of SMEs and public authorities (broken down into impacts for authorities for administrative, compliance and enforcement activities and for the European Commission / EEA). Overall, this measure is likely to have **weakly negative economic impacts** as it primarily relates to a clarification of the existing scope of the Regulation. No impacts for SMEs are expected as a result of this measure.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative**.

Around 1,300 additional facilities may be captured by this measure and required to report to the E-PRTR. This is expected to be the maximum potential number affected as some of these facilities are likely to fall below the existing reporting thresholds although exactly how many this may affect is unclear. The number of additional facilities was calculated using the number of oil and gas fields within Germany and extrapolating to the EU27 using European production of primary energy statistics.[25] While Member States have previously been advised to report facilities extracting oil under activity 3(a), analysis of the data reported to the E-PRTR shows only 121 facilities have done so (these have been removed from the extrapolated figure).

Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total additional one-off costs are expected to be around €7.8m and recurrent costs of €2.6m per year leading to **total annualised costs of around €3.2m per year** for operators.

Public authorities

Overall impacts on public authorities are expected to be **weakly negative**. This includes additional time for QA for both Member State public authorities and the EEA although this is expected to be limited as some facilities already report.

Based on the estimated number of facilities impacted and the cost assumptions described in Section 1.3, the total additional one-off costs for **public authorities** are expected to be around €0.44m and recurrent costs of €0.15m per year leading to **total annualised costs of around €0.18m per year**.

Impacts for the **EEA** are expected to be **minimal** considering that some facilities already report data so minimal changes would be required to the data and QA flows or website.

Environmental impacts

Four specific categories of environmental impacts were selected for an in-depth assessment of the policy measures for the revision of the E-PRTR Regulation. These include impacts on the climate, efficient use of resources, quality of natural resources / fighting pollution and reducing and managing waste. Overall, this measure is likely to have **weakly positive environmental impacts** as, whilst it primarily relates to a clarification of the existing scope of the Regulation, a large number of additional facilities are expected to report.

[25] EU27 production data: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Energy_production,_2008_and_2018.png
DE oil/gas exploration fields in 2018: https://www.lbeg.niedersachsen.de/download/144280/Erdoel_und_Erdgas_in_der_Bundesrepublik_Deutschland_2018.pdf

Increasing the number of facilities reporting will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of the sector as it enables better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). This would primarily impact on emissions of air and water pollutants and potentially GHGs. Limited or no impacts would be expected for resource use or waste. Additional emissions of up to 100kt of NOx and 50kt of NMVOCs could potentially be captured within E-PRTR based on a rough approximation of emissions per facility[26].

Social impacts

Two specific categories of social impacts were selected for an in-depth assessment of the policy measures for the revision of the E-PRTR Regulation. These include reduced health impacts due to lower pollutant emissions and governance, participation and good administration (as a result of improved public access to information). Overall, this measure is likely to have **weakly positive social impacts** as, whilst it primarily relates to a clarification of the existing scope of the Regulation, a large number of additional facilities are expected to report.

As discussed above, increasing the number of facilities reporting could potentially help to improve environmental performance of the sector which would have positive impacts for health. Furthermore, increasing the level of data available on performance of the sector improves public access to information potentially enabling greater participation in environmental decision making.

Remove 3(d) production of asbestos from activity list [#17]

This measure would entail the removal of asbestos from the activity list as it is no longer relevant for the EU. This measure is likely to have **no economic, environmental or social impacts** although the removal of an activity may simplify the overall data reporting flow, albeit very limited overall.

Reword 5(d) landfills activity description to include flaring of vent gas [#11] = SWD E-PRTR#8

Description of the measure

Include flaring of vent gas in the description to ensure reporters understand this should be included.

Economic impacts

Overall, this measure is likely to have **no or limited economic impacts.** Though, it will lead to a greater number of facilities (estimated to be 742) having to report emissions data for the air pollutants where the reporting thresholds could be reduced, the additional costs are limited. Facilities of this activity should already be reporting to the E-PRTR, therefore only existing facilities would have to report additional releases. The number of facilities affected has been determined to be the current number of facilities reporting releases/transfers and activity 5(d) (either as main or other activity). However, it is uncertain how many may already be reporting flaring of vent gas within their estimates or may be below the relevant reporting thresholds. Therefore, this number is expected to be the maximum likely number affected (and associated impacts discussed below). No impacts for SMEs are foreseen with this measure as all facilities that may be impacted are likely to be already reporting to E-PRTR and the existing reporting and activity thresholds should ensure that SMEs are not captured.

Administrative burdens on businesses

[26] Emissions per facility based on information provided in the IED Impact Assessment

Overall impacts on administrative burdens for businesses are expected to be **limited**.

Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, recurrent costs are estimated at around €0.15m per year and there are no one-off costs (as it is existing facilities). Costs are relatively limited as all facilities that would have to report additional data should already be reporting to E-PRTR.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**. The additional costs for the CAs are estimated at €56,000 as there may be a very slight increase in QA time for Member State public authorities. No additional costs are expected for the EEA.

Environmental impacts

Overall, this measure is likely to have **limited or weakly positive environmental impacts** as it will increase the coverage of reported emissions data for the activity (air pollutants and greenhouse gases). Refining the activity definition should improve the level and overall completeness of data on releases available within the E-PRTR for landfills, potentially helping to improve environmental performance of the sector as it enables better comparison of performance across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). Limited or no impacts would be expected for resource use or waste.

Social impacts

Overall, this measure is likely to have **limited or weakly positive social impacts** as emissions coverage for the activity will be expanded. As discussed above, improving data coverage for the activity could potentially help to improve environmental performance of the sector which would have positive impacts for health. Furthermore, increasing the level of data available for the activity improves public access to information potentially enabling greater participation in environmental decision making.

E-PRTR problem area 2a: Existing pollutants and thresholds

The Annex II pollutant list is out of date. Reporting thresholds require adjusting for existing pollutants or groups of pollutants to improve the capture of industrial releases as some reporting thresholds do not guarantee capture of 90% of releases from industrial facilities.

Reduce reporting thresholds for some existing pollutants to better meet the aim of 90% capture [#33a-x / n=24] = SWD E-PRTR#1

Description of the measure

11 pollutants to air and 14 to water were identified (presented below in Table 5-13), in the E-PRTR implementation review report[27], as having a threshold too high to capture 90% of releases. The threshold for these pollutants can be lowered to achieve this.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts** as it will lead to a greater number of facilities having to report emissions data for the air and water pollutants where the reporting thresholds could be reduced. The pollutants where thresholds could be reduced and the likely number of facilities that could be impacted (i.e. required to report) is presented below in Table

[27] https://circabc.europa.eu/w/browse/b4eacd6d-4425-479a-a225-77306de6b060

5-13. These estimates are based primarily on the analysis undertaken as part of the E-PRTR implementation review report.

Table 5-13: Pollutants where thresholds could be reduced and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
1a	As and compounds	As and compounds releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 12 kg to achieve this.	63
1b	Cu and compounds	Cu and compounds releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 38 kg to achieve this.	121
1c	F and inorganic compounds	F and inorganic compounds releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 3942 kg to achieve this.	13
1d	NMVOC	NMVOC releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 49590 kg to achieve this.	564
1e	NH3	NH3 releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 447 kg to achieve this.	11138
1f	Cd and compounds	Cd and compounds releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 7 kg to achieve this.	20
1g	PM10	PM10 releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 17309 kg to achieve this.	330
1h	1,1,2,2-tetrachloroethane	1,1,2,2-tetrachloroethane releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 1 kg to achieve this.	265
1i	Cr and compounds	Cr and compounds releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 57 kg to achieve this.	18
1j	DEHP	DEHP releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 4 kg to achieve this.	31
1k	Vinyl Chloride	Vinyl Chloride releases to air was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 1289 kg to achieve this.	40
1l	Total Phosphorous	Total Phosphorous releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 2042 kg to achieve this.	1566
1m	Pb and compounds	Pb and compounds releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 11 kg to achieve this.	329
1n	TOC	TOC releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 41381 kg to achieve this.	1085
1o	Cu and compounds	Cu and compounds releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 48 kg to achieve this.	50
1p	Total Nitrogen	Total Nitrogen releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 26233 kg to achieve this.	764

Table 5-13: Pollutants where thresholds could be reduced and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
1q	Zn and compounds	Zn and compounds releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 86 kg to achieve this.	818
1r	HCH	HCH releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 0.7 kg to achieve this.	4
1s	Aldrin	Aldrin releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 0.9 kg to achieve this.	3
1t	Anthracene	Anthracene releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 0.4 kg to achieve this.	67
1u	Chlorpyrifos	Chlorpyrifos releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 0.1 kg to achieve this.	40
1v	Diuron	Diuron releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 0.004 kg to achieve this.	990
1w	Isoproturon	Isoproturon releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 0.1 kg to achieve this.	87
1x	Trichloroethylene	Trichloroethylene releases to water was identified as having a threshold that did not cover 90% of emissions (using Weibull analysis). The threshold for these pollutants can be lowered to 5 kg to achieve this.	18
1	**ALL**	**Total number of facilities that would have to report an additional pollutant**	**18,424**

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative**.

Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total recurrent costs are expected to be around €0.7m per year. Costs are relatively limited as all facilities that would have to report with changes in reporting thresholds should already be measuring or calculating emissions of these pollutants to determine if they are above or below the existing reporting thresholds.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **very limited**. A reduction in reporting thresholds for these pollutants could result in some smaller facilities having to report although the existing activity thresholds should ensure that it is minimal.

Public authorities

Overall impacts on public authorities are expected to be between **strongly or weakly negative**. This includes additional time for QA for Member State public authorities.

Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total recurrent costs are expected to be around €1m per year for Member State public authorities. Costs are moderate as no new activities would be reporting and the pollutants are all

already captured within the data flows and tools, but additional data points being reported will increase costs.

Impacts for the **EEA** are expected to be **minimal** considering that these pollutants are already captured under E-PRTR so no (or limited) changes would be required to the data and QA flows or website. The only difference would be a larger volume of data to process and QA although the tools for this are automated.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it will increase the coverage of reported emissions data for several air and water pollutants.

Reducing the reporting thresholds so that more facilities report will improve the level of data on emissions available within the E-PRTR for the specific pollutants described above (90% capture), potentially helping to improve environmental performance of the sector as it enables better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (because of access to information). Limited or no impacts would be expected for climate (GHG emissions), resource use or waste.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as a large number of additional facilities are expected to report and emissions coverage for a number of air and water pollutants will be expanded.

As discussed above, increasing the number of facilities reporting and improving data coverage for some pollutants could potentially help to improve environmental performance of the sector which would have positive impacts for health. Furthermore, increasing the level of data available for specific pollutants improves public access to information potentially enabling greater participation in environmental decision making.

Establish a 'Sunset list' to remove pollutants that are no longer of concern [#32] = SWD E-PRTR#5

Description of the measure

Creating a more dynamic mechanism to identify a list of pollutants for future removal due to them being longer relevant ("sunset list"). No pollutants were suggested for removal in the E-PRTR implementation review report however 24 substances included in the pollutant list are no longer permitted to be used in Europe and therefore could potentially be removed in the future.

Economic impacts

Overall, this measure is likely to have **limited or weakly positive economic impacts** as it will remove pollutants that are no longer relevant potentially simplifying to a limited extent the review and reporting processes for operators and Member State authorities. No impacts on SMEs are expected with this measure.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **limited or weakly positive**.

If the removal of these pollutants leads to a small time saving (maximum of 0.5 hours per facility) for operators each year (i.e. due to not having to consider if they are relevant for the facility) then savings of around €1m per year could be realised. In practice it is unlikely to be as high as this as operators will know which pollutants are relevant for their facility and therefore will not need to check each year.

Public authorities

Overall impacts on public authorities are expected to be very **limited**. This includes some potential time savings for Member State public authorities and some costs for the EEA and/or European Commission for reviewing / maintaining the sunset list.

For **Member State public authorities** the savings are likely to be very limited, perhaps a maximum of 1 hour per year per authority through not having to consider these pollutants (equating to a reduction of around €1,000 per year overall).

Impacts for the **EEA and/or European Commission** are expected to be **minimal** related to the time and costs to review, maintain and implement the sunset list with some potential limited savings through not having to include the pollutants in their data flows. Overall net time impacts are estimated to be around 5 additional man-days of effort equating to only around €2,250 per year (assuming one FTE has a cost of €100,000[28]).

Environmental impacts

Overall, this measure is likely to have **no environmental impacts** as it only involves the removal of pollutants and no change to the overall level of data reported.

Social impacts

Overall, this measure is likely to have **no social impacts** as it only involves the removal of pollutants and no change to the overall level of data reported.

E-PRTR problem area 4a: Reporting modalities

For some categories of activity, in particular intensive farming, reporting releases can be a significant burden on reporters due to the number of facilities and difficulties in quantifying releases accurately. Estimates using a top-down approach for some diffuse industrial sectors (where there is a large number of smaller operators such as in intensive farming) may reduce the reporting burden and improve data quality.

Option for top-down reporting for activity 7 (intensive livestock production and aquaculture) [#46] = SWD E-PRTR#9

Description of the measure

Allowing a top-down calculation approach for activity 7 (intensive livestock production and aquaculture) should help to reduce administrative burdens for operators, some of which may be SMEs. This could be implemented using four methods (some of which could be combined):

- Member States reporting for the sector at a national level.
- Competent Authorities using a top-down approach and reporting an average release for every facility.

[28] Taken from the E-PRTR Evaluation.

- Operators and Competent Authorities reporting livestock numbers / aquaculture capacity only (via the productionVolume field) and emission calculations being done by the EEA.
- Operators reporting livestock numbers / aquaculture capacity to Competent Authorities and emission calculations being completed by the Competent Authorities.

Economic impacts

Overall, this measure is likely to have **strongly positive economic impacts** as it will significantly reduce the reporting burden on facilities in some sectors. There are currently 16,882 facilities captured under activity 7 (i.e. IRPP and aquaculture) based on the latest available E-PRTR data for each MS.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **strongly positive**. To estimate the potential impacts of the measure it was necessary to first estimate the current burden associated with reporting to the E-PRTR before then estimating the costs associated with a top-down approach. Based on the estimated number of facilities impacted (16,882) and the cost assumptions described in Section 5.3.1, the current annualised costs are estimated to be around €20.4m per year. Assuming that operators would still need to report some limited information each year (e.g. on activity levels to enable a top-down calculation) then these costs would fall to around €3.4m per year, a saving of around €17.0m (overall reduction of 83%). A similar saving (%) would be anticipated if top-down reporting were to be applied to other activities, e.g. if cattle were to be included within E-PRTR.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **weakly positive**. Whilst the activity and reporting thresholds help to ensure that most SMEs are not captured under the E-PRTR Regulation or required to report, some may still be captured within activity 7 and would benefit from a top-down reporting approach.

Public authorities

Overall impacts on public authorities are expected to be **limited**. There would be some additional burden to undertake the top-down estimation but also savings through not having to QA release data for individual facilities. Overall, these would be likely to cancel each other out with no net increase or decrease in burden.

Environmental impacts

Overall, this measure is likely to have **limited or no environmental impacts** as it only impacts on the calculation and reporting mechanism rather than the overall level of data reported.

Social impacts

Overall, this measure is likely to have **no social impacts** as it only impacts on the calculation and reporting mechanism rather than the overall level of data reported.

E-PRTR problem area 4c: Inconsistent and incorrect reporting

There are inconsistencies and potential issues with the reported E-PRTR data resulting in poor accuracy, incomplete and in-transparent data, including:

Inconsistent pollutant reporting and quantification methods used by facilities in the same sector.

A lack of clarity on whether data is absent due to incomplete reporting or non-applicability or below threshold for a particular facility.

Poor administrative information on location, methodology used and tagging of release or transfer.

Sub-facility reporting [#45] = SWD E-PRTR#2

Description of the measure

This measure would entail reporting releases/transfers on an activity basis instead of aggregating to the facility level. The benefits of reporting at this level would be greater granularity of data enabling better matching to individual activities, e.g. for assessing impacts of different BAT conclusions for specific sectors.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts** as the measure would entail some additional effort by operators and Member State competent authorities to report and check data at this granularity. However, these are expected to be limited as it is likely the releases are already measured, calculated, or estimated at this level. No impacts on operation / conduct of SMEs are anticipated as existing activity and reporting thresholds would still apply.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative.** Only facilities reporting waste transfers, pollutant transfers and pollutant releases (latest year) whom also have at least one additional activity to the main activity are likely to be impacted by this measure. Based on the estimated number of facilities impacted (1,025) and the cost assumptions described in Section 5.3.1, the additional recurrent costs are estimated to be around €81,000 per year.

Public authorities

Overall impacts on public authorities are expected to be **weakly negative** as some additional QA would be required due to an increase in the level of data being reported. Based on the estimated number of facilities impacted (1,025) and the cost assumptions described in Section 5.3.1, the additional recurrent costs are estimated to be around €114,000 per year.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it will increase the granularity of reported data for a number of facilities. This enables better matching of data to individual activities e.g. for assessing impacts of different BAT conclusions for specific sectors. This could potentially help to improve environmental performance of some activities as it enables better comparison of performance of activities across the EU (including relative to BAT conclusions) as well as greater engagement of citizens in environmental decision-making (as a result of access to information).

Social impacts

Overall, this measure is likely to have **weakly positive social impacts.** As discussed above, increasing the granularity of data for some facilities could potentially help to improve environmental performance of some sectors which would have positive impacts for health. Furthermore, increasing the granularity of data available improves public access to information potentially enabling greater participation in environmental decision making.

Add active operator confirmation that releases are below the reporting threshold [#52] = SWD E-PRTR#3

Description of the measure

Require affirmation that expected pollutants for a sector are below the reporting threshold or not present at all and avoid the ambiguity of missing values. This would improve the overall clarity and quality of the data within the register.

Economic impacts

Overall, this measure is likely to have **limited or weakly negative economic impacts** as the measure would entail some additional effort by operators to report. However, these are expected to be limited as operators should already be checking if their releases of pollutants are above or below the reporting thresholds.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative.** As described above, operators should already be checking if they are above or below reporting thresholds for each pollutant thus the only additional burden would be to specify this within their annual reporting.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **limited**. Some SMEs may be required to confirm that releases are below the reporting threshold although how many this may affect is uncertain (the existing activity thresholds typically exclude the majority of SMEs within individual sectors.

Public authorities

No impacts on public authorities are expected.

Environmental impacts

Overall, this measure is likely to have **limited environmental impacts** as it will increase the overall clarity and quality of data available. This enables better use of the data for e.g. assessment of performance of different facilities and/or sectors. This could potentially help to improve environmental performance of some activities as it enables better comparison of performance of activities across the EU (including relative to BAT conclusions) as well as greater engagement of citizens in environmental decision-making (as a result of access to information).

Social impacts

Overall, this measure is likely to have **limited social impacts.** As discussed above, increasing the granularity of data for some facilities could potentially help to improve environmental performance of some sectors which would have positive impacts for health. Furthermore, increasing the granularity of data available improves public access to information potentially enabling greater participation in environmental decision making.

Mandate the M/C/E hierarchy [#58] = SWD E-PRTR#4

Description of the measure

Mandate the MCE hierarchy for reporting releases, e.g. releases should be measured where possible and calculation should take precedent over estimation.

Economic impacts

Overall, this measure is likely to have **limited or weakly negative economic impacts** as the measure would entail some additional effort for those operators that may not already be measuring or calculating their releases for reporting to E-PRTR. However, the overall impacts of the measure are highly uncertain. No impacts on the operation / conduct of SMEs are anticipated.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative.** As described above, it would only impact on those operators that may not already be measuring or calculating their releases. It is uncertain how many facilities this may impact.

Public authorities

No impacts on public authorities are expected.

Environmental impacts

Overall, this measure is likely to have **limited environmental impacts** as it will increase the overall quality of data available. This enables better use of the data for e.g. assessment of performance of different facilities and/or sectors. This could potentially help to improve environmental performance of some activities as it enables better comparison of performance of activities across the EU (including relative to BAT conclusions) as well as greater engagement of citizens in environmental decision-making (as a result of access to information).

Social impacts

Overall, this measure is likely to have **limited social impacts.** As discussed above, increasing the quality of data for some facilities could potentially help to improve environmental performance of some sectors which would have positive impacts for health. Furthermore, increasing the granularity of data available improves public access to information potentially enabling greater participation in environmental decision making.

5.3.3 PO2: Innovation

All measures of relevance to PO2 Innovation were screened out.

5.3.4 PO3: Circular Economy, Resource Efficiency and Safer Chemicals

E-PRTR problem area 2b: Additional pollutants

Recent analysis of science and emerging environmental and health issues (including media specific policies and legislation) have identified new pollutants of concern emitted by industrial activities that are not in the E-PRTR Annex II list. It is important that industry reports on these pollutants and the pollutants are assigned appropriate thresholds.

Establish a mechanism for dynamic updating to include additional pollutants of immediate interest and future interest (sunrise list) [#37] = SWD E-PRTR#10

Description of the measure

This measure would entail the inclusion of a more dynamic mechanism to identify and include emerging pollutants of concern ("sunrise list") within the Regulation e.g. enabling the Commission to identify and include new pollutants in the future via delegated acts. This could include pollutants which have the potential to become important for environmental issues in Europe. This would be similar to the WFD watch-list process.

An additional 48 pollutants of immediate interest have already been identified as part of the E-PRTR analysis report and suggested by the Water Framework Directive as priority (hazardous) substances.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts** as it will lead to a greater number of facilities having to report emissions data for the air and water pollutants which would be added now or in the future. The pollutants which could be added now and the likely number of facilities that could be impacted (i.e. required to report) is presented below in Table 5-14. These estimates are based on a range of sources, as described in the description field for each case.

Table 5-14: Pollutants which could be added to Annex II pollutant list now and number of facilities that could be affected

#	Pollutant	Description	# facilities impacted
10a	2-Ethoxyethanol / ethylene glycol monoethyl ether	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	3
10b	Acetaldehyde	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	369
10c	Aclonifen	This pollutant is a herbicide and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10d	Acrolein	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	75
10e	Acrylamide	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	11
10f	Acrylic acid and its water-soluble salts	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	44

Table 5-14: Pollutants which could be added to Annex II pollutant list now and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
10g	Acrylonitrile	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	23
10h	Antimony and compounds (as Sb)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	73
10i	Beryllium and compounds (as Be)	Analysis of the NRW PRTR shows releases of beryllium are mainly from sectors 5(b) and 2(e). The number of facilities that would be reporting releases of beryllium has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	355
10j	Bifenox	This pollutant is a plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10k	Bisphenol-A	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	69
10l	Carbamazepine	This is a pharmaceutical and therefore the most likely potential source is UWWTP. The number of facilities reporting this pollutant was therefore determined to be UWWTP reporting releases and transfers. Only the UWWTP reporting releases/transfers have been included as it was assumed only those reporting other releases would also reported releases of this.	892
10m	Black carbon (BC)	The sectors identified as most important to black carbon emissions were determined to be: 1(a)-(f), 2(a)-(e), 3(g), 5(b), 6(a), 9(d). The number of facilities that would be reporting releases of black carbon has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	2,410
10n	Carbon disulphide	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	129
10o	Chromium (VI) compounds (as Cr)	Analysis of the BREFs identified the following sectors as most applicable to emissions of chromium (VI): 2(e), 5(a), 3(e), 3(f), 6(c), 9(c), 5(g), 9(a), 2(c)(i), 2(c)(iii), 2(f), 3(g), 2(f), 4(b). The number of facilities that would be reporting releases of Cr(VI) has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	1,248
10p	Cobalt and compounds (as Co)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	124
10q	Cybutryne	The sectors identified as most applicable to this pollutant were determined to be: 4(d) & 9(e). The number of facilities that would be reporting releases of Cr(VI) has therefore been calculated to be the number of facilities reporting releases to the current reporting flow	28

Table 5-14: Pollutants which could be added to Annex II pollutant list now and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
		from these sectors. Source: https://chemicalwatch.com/65602/un-agency-considering-international-ban-on-antifouling-cybutryne	
10r	Cypermethrin	This pollutant is a plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10s	Dichlorvos	This pollutant is a plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10t	Dicofol	This pollutant is a plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10v	Formaldehyde (formalin)	Analysis of the NRW PRTR identified the sectors most applicable to formaldehyde releases as: 1(c), 3(e), 3(f), 4(a)(ii), 6(b). The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	1,652
10w	Glyphosate	This pollutant is a plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10x	Hexabromocyclododecane (HBCDD)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	1
10y	Hydrogen sulphide	Analysis of the NRW PRTR shows the sectors most applicable to releases of H2S are: 1(d), 3(f), 2(e). The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	239
10z	Macrolide antibiotics (azithromycin, clarithroymycin, erythromycin)	These are pharmaceuticals and therefore the most likely potential source is UWWTP. The number of facilities reporting this pollutant was therefore determined to be UWWTP reporting releases and transfers. Only the UWWTP reporting releases/transfers have been included as it was assumed only those reporting other releases would also reported releases of this.	892

Table 5-14: Pollutants which could be added to Annex II pollutant list now and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
10aa	Manganese and compounds (as Mn)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	892
10ac	n-Hexane	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	480
10ad	Neonicotinoids (Imidacloprid, Thiacloprid, Thiamethoxam, Acetamiprid, Clothianidin)	These pollutants are active substances in plant health products and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10af	Nicosulfuron (herbicide)	This pollutant is an active substance in plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10ag	Per- and Polyfluoroalkyl Substances (PFAS) all PFAS as a group, or	The only sector found to be applicable for this pollutant is activity 9(a) due to its inclusion in the textile (TXT) BREF. The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from this sector.	68
10ah	Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	The only sector found to be applicable for this pollutant is activity 9(a) due to its inclusion in the textile (TXT) BREF. The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from this sector.	68
10ai	Perfluorooctane sulfonic acid (PFOS), its salts and perfluorooctane sulfonyl fluoride (PFOSF)	The only sector found to be applicable for this pollutant is activity 9(a) due to its inclusion in the textile (TXT) BREF. The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from this sector.	68
10aj	Perfluorooctanoic acid (PFOA), its salts and PFOA-	The only sector found to be applicable for this pollutant is activity 9(a) due to its inclusion in the textile (TXT) BREF. The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from this sector.	68

Table 5-14: Pollutants which could be added to Annex II pollutant list now and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
	related compounds		
10ak	PM2.5	It was assumed that facilities reporting PM10 would also report PM2.5 and therefore the number of facilities reporting PM10 was used as a proxy for the number of facilities anticipated to report PM2.5.	338
10al	Polychlorinated naphthalenes	The sectors identified as applicable for releases of this pollutant are: 1(c), 5(b), 2(a), 2(b), 2(e), 4(a). The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	1,609
10am	Pyrethroids (Bifenthrin, Deltamethrin, Esfenvalerate, Permethrin)	This pollutant is a plant health product and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10an	Quinoxyfen	This pollutant is an active substance in plant health products and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20
10ao	Selenium and compounds (as Se)	Analysis of BREFs identified the sectors most relevant for this pollutant as: 3(e), 3(f) and 3(g). The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	298
10aq	Silver (biocide)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	62
10ar	Sulfamethoxazole	This is a pharmaceutical and therefore the most likely potential source is UWWTP. The number of facilities reporting this pollutant was therefore determined to be UWWTP reporting releases and transfers. Only the UWWTP reporting releases/transfers have been included as it was assumed only those reporting other releases would also reported releases of this.	892
10as	Sulphates	1(c), 3(e), 5(a), 5(b), 5(c), 4(b)(iv), 4(b)(v) identified as the relevant sectors from BREFs. This is the number of facilities reporting emissions to the current reporting flow from these sectors.	2,138
10at	Terbutryn	This pollutant is an active substance in plant health products and therefore it was assumed only facilities under activity 4(d) could potentially release this pollutant. The number of facilities reporting these releases was therefore determined using facilities currently reporting releases/transfers. Only those reporting releases/transfers were included as it was assumed if they weren't reporting any other releases/transfers it was unlikely to be reporting releases/transfers of this pollutant.	20

Table 5-14: Pollutants which could be added to Annex II pollutant list now and number of facilities that could be affected			
#	**Pollutant**	**Description**	**# facilities impacted**
10au	Thallium and compounds (as Tl)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	12
10av	Tin and tin compounds (as Sn)	Analysis of BREFs identified the sectors most relevant for this pollutant as sectors: 3(e), 3(f), 2(c)(i), 2(c)(iii), 2(f), 3(g). The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	599
10ax	Total suspended solids (TSS)	Analysis of BREFs identified the sectors most applicable to this pollutant as: 1(c), 1(a), 3(e), 4(a), 5(a), 5(b), 5(c), 6(a), 6(b), 6(c), 6(a), 6(b), 6(c), 8(a), 9(c), 5(g), 2(c)(i), 2(c)(iii), 2(f), 8(b)(i), 2(c)(ii), 2(d), 2(e)(ii), 4(b)(iv), 4(b)(v). The number of facilities that would be reporting releases of this pollutant has therefore been calculated to be the number of facilities reporting releases to the current reporting flow from these sectors.	3,419
10ay	Triclosan	This is a biocide used in consumer products and therefore the most likely potential source is UWWTP. The number of facilities reporting this pollutant was therefore determined to be UWWTP reporting releases and transfers. Only the UWWTP reporting releases/transfers have been included as it was assumed only those reporting other releases would also reported releases of this.	892
10az	Vanadium and compounds (as V)	Numbers of additional facilities and existing facilities reporting additional releases was determined using TRI data and extrapolated to EU27. While the TRI data includes additional sectors to the E-PRTR only sectors within scope of the E-PRTR, were included in the analysis.	285
10aaa	17-beta-Estradiol (E2); 17-alpha-Ethinylestradiol (EE2); Estrone (E1)	These substances are in consumer products and therefore the most likely potential source is UWWTP. The number of facilities reporting this pollutant was therefore determined to be UWWTP reporting releases and transfers. Only the UWWTP reporting releases/transfers have been included as it was assumed only those reporting other releases would also reported releases of this.	892
10	**ALL**	**Total number of facilities that would have to report one or more new pollutant (Note 1)**	**21,937**
Note 1: In reality the total number of facilities that would be impacted by the inclusion of the pollutants listed in the table would be far less as some facilities and sectors would be impacted more than others i.e. have to report more than one additional pollutant. However, the likely changes in burden would be similar overall as costs have been estimated based on unit costs/burden per additional pollutant that a facility has to report.			

In addition to additional data collection and reporting for operators, there would also be time required for the European Commission and/or EEA to maintain the sunrise list and identify pollutants of emerging concern.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative**.

Operators will have to check whether their facilities are likely to release any of the pollutants and, If so, measure, calculate and/or estimate releases to see whether they are above or below the reporting thresholds (to be specified). If they are above the threshold then the data would need to be reported. Some initial time would be required to set up the appropriate data capture, calculation and reporting

mechanisms up front. Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the one-off costs are estimated to be €13.2m and recurrent costs are expected to be around €4.4m per year. Total annualised costs are €5.4m per year.

Additional costs would be incurred by operators in the future if the sunrise list were to lead to the inclusion of additional pollutants.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **very limited**. The existing activity thresholds already help to exclude smaller facilities where there may be SMEs. Appropriate reporting thresholds would also need to be established for any new pollutants to ensure that smaller facilities (potentially including SMEs) would not be required to report.

Public authorities

Overall impacts on **public authorities** are expected to be **weakly negative**. This includes additional time for QA for both Member State public authorities and the EEA as well as some initial upfront time to amend the existing data flow and QA systems to incorporate new pollutants.

Based on the estimated number of facilities impacted by the new pollutants to be included and the cost assumptions described in Section 5.3.1, the one-off costs are expected to be around €0.9m and total recurrent costs around €0.3m per year for **Member State public authorities**. Total annualised costs are around €0.4m per year.

Impacts for the **EEA** are expected to be **limited** and primarily relate to some initial upfront time to update the data and QA flows and website to accommodate the new pollutants. These costs are estimated to be around €135,000 (annualised costs of around €17,000 per year). The EEA and/or European Commission would also incur some additional costs for maintaining the sunrise list and identifying and reviewing potential emerging pollutants. This is assumed to cost around €15,000 per year (assuming consultants are used to assess specific pollutants) with a further 30 man days every 5 years to develop and agree a proposal for new pollutant(s) (equating to annualised costs of around €2,600 per year).

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it will increase the coverage of air and water pollutants that are reported to the E-PRTR. It will also ensure that the E-PRTR pollutant list can be updated as and when emerging pollutants are identified helping to support the objectives of wider environmental policies such as IED, WFD, UWWTD etc.

Increasing the pollutant coverage will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of the sector as it enables better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). Limited or no impacts would be expected for resource use or waste.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as a large number of additional facilities are expected to report on these new pollutants and emissions coverage within E-PRTR will be expanded.

As discussed above, increasing the number of pollutants reported could potentially help to improve environmental performance of those sectors impacted which would have positive impacts for health. Furthermore, including new pollutants improves public access to information potentially enabling greater participation in environmental decision making.

E-PRTR problem area 3: Information to track progress towards the circular economy and decarbonisation of industry

The European Green Deal commits the Commission to revise EU measures to address industrial pollution to make them more consistent with climate, energy and circular economy policies. This will contribute towards the zero-pollution agenda. The Green Deal commits, inter alia:

- Adopting an action plan towards a zero-pollution ambition.
- Revising EU measures to address pollution from large industrial plants, including both the IED and the E-PRTR.

The E-PRTR, in combination with related legislation such as the IED, has untapped potential for contributing to the EU's circular economy objectives by providing transparency on industrial performance:

There is a benefit in the reporting of additional data on resource consumption, e.g. use of energy, water, raw materials. This also has linkages with options under consideration in the IED revision, e.g. mandatory application of BAT-AEPLs related to resource consumption.

There is also no transparency around the transfer of pollutants in the data reported to the E-PRTR. The E-PRTR needs proper tracking of pollutants in transfers and their storage, export or final release (particularly waste and wastewater).

Additionally, the European Union has committed to reach net GHG emissions of 55% of 1990 levels by 2030. The E-PRTR offers a mechanism to efficiently track progress with the reduction of GHG emissions from a range of GHG intensive activities. Transparent integration between E-PRTR and EU-ETS reporting is needed to provide stakeholders with sufficiently transparent information for decision making. Although the verified emissions under EU ETS are publicly available, any underlying background information on activity levels is not. Such information forms part of the confidential verification reports and is not available for public scrutiny. With suitable provisions the E-PRTR could provide relevant background data for benchmarking and assessing industrial environmental performance within and across sectors.

Require the reporting of energy use [#38] = SWD E-PRTR#11

Description of the measure

This measure would require operators to report energy use of their facilities. This would allow the assessment of energy efficiency and benchmarking of facilities across the EU (within a sector), particularly when combined with production volume data which will soon be required under E-PRTR. A reporting threshold could be developed to exclude smaller facilities from having to report.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.**

The number of facilities that would be required to report this additional data has been assumed to be the number of facilities reporting releases or transfers in the latest year, which is 28,268.

Administrative burdens on businesses

Overall impacts on administrative burdens on businesses are expected to be **weakly negative**. Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total one-off costs are expected to be around €17m and the recurrent costs are expected to be around €5.6m per year, giving overall annualised costs of around €6.9m. Costs are relatively limited as all facilities are likely to have this information readily available.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **very limited**. All facilities, including SMEs, are likely to have this information readily available and the existing reporting and activity thresholds help to exclude most SMEs from reporting.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**. Whilst there may be a very slight increase in QA time for both Member State public authorities and the EEA, it is expected to be very limited and less than €10,000 per year in total (annualised costs).

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may enable benchmarking of the environmental performance of different industrial activities and facilities, more precisely allowing the assessment of energy efficiency. It may facilitate authorities in assessing progress against Sustainable Development Goals, EU Green Deal and circular economy goals and in identifying activities for further action. It may also improve corporate accountability on environmental management and ultimately result in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

Require the reporting of water use [#39] = SWD E-PRTR#12

Description of the measure

Require the reporting of water use to allow for better assessment of the impacts of industry on the environment beyond pollution. This would allow the assessment of water use efficiency and benchmarking of facilities across the EU (within a sector), particularly when combined with production volume data which will soon be required under E-PRTR. A reporting threshold could be developed to exclude smaller facilities from having to report.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.**

The number of facilities that would be required to report this additional data has been assumed to be the number of facilities reporting releases or transfers in the latest year, which is 28,268.

Administrative burdens on businesses

Overall impacts on administrative burdens on businesses are expected to be **weakly negative**. Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total one-off costs are expected to be around €17m and the recurrent costs are expected to be around €5.6m per year, giving overall annualised costs of around €6.9m. Costs are relatively limited as all facilities are likely to have this information readily available.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **very limited**. All facilities, including SMEs, are likely to have this information readily available and the existing activity thresholds help to exclude most SMEs from reporting.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**. Whilst there may be a very slight increase in QA time for both Member State public authorities and the EEA, it is expected to be very limited and less than €10,000 per year in total (annualised costs).

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may enable benchmarking of the environmental performance of different industrial activities and facilities, more precisely allowing the assessment of water consumption. It may facilitate authorities in assessing the progress against Sustainable Development Goals, EU Green Deal and circular economy goals and in identifying activities for further action. It may also improve corporate accountability on environmental management and ultimately result in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

Require the reporting of raw material use [#40] = SWD E-PRTR#13

Description of the measure

Require the reporting of raw material use to be better able to assess energy and carbon efficiencies. This would allow the assessment of resource efficiency and benchmarking of facilities across the EU (within a sector), particularly when combined with production volume data which will soon be required under E-PRTR. A reporting threshold could be developed to exclude smaller facilities from having to report.

Economic impacts

Overall, this measure is likely to have **strongly negative economic impacts.**

The number of facilities that would be required to report this additional data has been assumed to be the number of facilities reporting releases or transfers in the latest year, which is 28,268.

Administrative burdens on businesses

Overall impacts on administrative burdens on businesses are expected to be **strongly negative**. Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total one-off costs are expected to be around €84.8m and the recurrent costs are expected to be around €28.3m per year, giving overall annualised costs of around €34.5m. Costs are higher than collecting and reporting for other contextual information as the gathering of data about raw material use will depend on a number of factors such as types of products and processes, presence of multiple installations, etc. The complexity will vary significantly between and within sectors.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **limited**, as the complexity (in terms of types of products and processes, installations, etc.) of the facilities that may have to report is likely to be lower than for large companies. Furthermore, the existing activity thresholds help to exclude most SMEs from reporting.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**[29]. Whilst there may be a slight increase in QA time for both Member State public authorities and the EEA, it is expected to be limited, although higher than for other contextual information. The estimated one-off costs for competent authorities are in the order of €0.09m and the recurrent costs are expected to be around €0.03m, giving overall annualised costs of around €0.04m. Costs for the EEA are expected to be limited.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may enable benchmarking of the environmental performance of different industrial activities and facilities. It may facilitate authorities in assessing the progress against Sustainable Development Goals, EU Green Deal and circular economy goals and in identifying activities for further action. It may also improve corporate accountability on environmental management and ultimately result in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

Reporting waste composition of waste transfers [#41] = SWD E-PRTR#14

Description of the measure

Require reporting of the composition of waste transfers using the Waste Framework Directive waste codes (EWC waste code).

Economic impacts

[29] This assessment is uncertain and will be further validated. It is likely that there could be higher costs for Member State CAs in checking the reported data.

Overall, this measure is likely to have **weakly negative economic impacts.** It is expected that around 21,455 facilities will be impacted by this measure, i.e. all facilities in the industrial reporting database currently reporting waste transfers.

Administrative burdens on businesses

Overall impacts on administrative burdens on businesses are expected to be **limited.** Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the recurrent costs are expected to be around €0.4m per year.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **limited**.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**. Whilst there may be a slight increase in QA time for both Member State public authorities and the EEA, it is expected to be limited. The estimated recurrent costs are expected to be around €0.6m. Costs for the EEA are expected to be very limited.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may enable a better understanding of waste flows. It may facilitate authorities in assessing the progress against Sustainable Development Goals, EU Green Deal and circular economy goals. It may also improve corporate accountability on environmental management and waste management more in general, ultimately resulting in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

Improve tracking of waste transfers [#42] = SWD E-PRTR#15

Description of the measure

Require the reporting of waste receivers for all waste transfers, not just transboundary hazardous waste transfers.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.** It is expected that around 21,398 facilities will be impacted by this measure, i.e. all facilities in the industrial reporting database currently reporting non-transboundary transfers.

Administrative burdens on businesses

Overall impacts on administrative burdens on businesses are expected to be **weakly negative.** Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the recurrent costs are expected to be around €0.4m per year.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **limited**.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**. Whilst there may be a slight increase in QA time for both Member State public authorities and the EEA, it is expected to be limited. The estimated recurrent costs are expected to be around €0.6m. Costs for the EEA are expected to be very limited.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may enable a better understanding of waste flows. It may facilitate authorities in assessing the progress against Sustainable Development Goals, EU Green Deal and circular economy goals. It may also improve corporate accountability on environmental management and waste management more in general, ultimately resulting in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

Improve tracking of waste water transfers [#43] = SWD E-PRTR#16

Description of the measure

Require the reporting of the receivers of waste water transfers (as currently done for transboundary hazardous waste transfers).

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.**

It is expected that around 1,496 facilities will be impacted by this measure, i.e. all facilities in the industrial reporting database currently reporting waste water transfers.

Administrative burdens on businesses

Overall impacts on administrative burdens on businesses are expected to be **weakly negative.** Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the recurrent costs are expected to be negligible (around €0.03m per year) as operators should have this information available already.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **very limited**.

Public authorities

Overall impacts on **public authorities and the EEA** are expected to be **limited**. Whilst there may be a slight increase in QA time for both Member State public authorities and the EEA, it is expected to be very limited. The estimated recurrent costs for both public authorities and the EEA are expected to be negligible.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may enable a better understanding of waste water flows and reduce potential double-counting. It may facilitate authorities in assessing the progress against Sustainable Development Goals, EU Green Deal and circular economy goals. It may also improve corporate accountability on environmental management and waste management more in general, ultimately resulting in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

E-PRTR problem area 6: Releases from diffuse sources and releases from products

Many new and emerging products contain pollutants that are released once these products have left the factory and are then used or disposed of. The Aarhus Convention states that releases from diffuse sources such as transport and residential combustion should be incorporated too.

Reporting releases from products [#70] = SWD E-PRTR#17

Description of the measure

Make use of other reporting streams, such as for the NECD and WISE, and/or carry out a specific Commission study for the calculation of releases from products during consumer use, as advocated in Article 5(9) of the Aarhus Convention. This exercise could be required every few years.

Economic impacts

Overall, this measure is likely to have **no or limited impacts.**

The burden falls on the Commission and/or EEA, who would have to calculate releases using available data or outsource the calculations to an external contractor.

Administrative burdens on businesses

The measure would not have any impact on businesses.

Operation / conduct of SMEs

No impacts on SMEs.

Public authorities

Overall impacts on **the Commission** are expected to be **limited**. Assuming that the Commission would commission a study every three years with a budget of €0.15m, the overall annualised costs would be around €0.05m.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it may complement environmental footprint information relating to industrial activities' outputs (products). It may facilitate authorities in assessing the progress against EU Green Deal and circular economy goals. It may also improve corporate accountability on environmental management and waste management, ultimately resulting in an improvement in environmental performance.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as it will improve transparency and access to environmental information enabling effective public participation in environmental decision-making. As the measure could lead to an improvement in the environmental performance of facilities and of the industrial activities overall, it may also have positive impacts for health.

5.3.5 PO4: Decarbonisation

E-PRTR problem area 3: Information to track progress towards the circular economy and decarbonisation of industry

Currently, operators must report releases of HFCs and PFCs as groups but reporting releases of individual compounds of these groups would provide better information, as the global warming potential varies greatly between compounds. The quality and completeness of information could also be improved by requiring GHG releases to be also reported as CO_2 equivalent.

Disaggregation of some currently reported GHGs (e.g. HFCs, PFCs) [#44a] = SWD E-PRTR#18

Description of the measure

This measure would require the reporting of GHGs like HFCs and PFCs as specific, individual pollutants instead of as a group.

Economic impacts

Overall, this measure is likely to have **limited economic impacts** as it would only result in a slight increase in the level of information that would be required to be reported which should be available to operators already. No impacts for SMEs are expected as a result of this measure.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **limited**. This measure has been assumed to only impact facilities currently reporting HFCs and PFCs. Based on the estimated number of facilities impacted (326) and the cost assumptions described in Section 5.3.1, the additional recurrent costs are expected to be around €3,200 per year for operators. This is based on the assumption that the data is already available to operators so just requires a small amount of additional time to report the data disaggregated.

Public authorities

Overall impacts on public authorities are expected to be **limited**. This includes some very limited additional time for QA for both Member State public authorities and the EEA although this is expected to be minimal as the data is already reported but at an aggregated level.

Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total additional recurrent costs for **public authorities** are expected to be around €4,500 per year.

Impacts for the **EEA** are expected to be **minimal** considering that the data is already reported but at a more aggregated level so minimal changes would be required to the data and QA flows or website.

Environmental impacts

Overall, this measure is likely to have **limited environmental impacts** as it only provides similar data but in a more disaggregated format. Reporting GHG data disaggregated by pollutant should indirectly support better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). However, such a change would only affect a small number of facilities so the additional data provided would be limited.

Social impacts

Overall, this measure is likely to have **limited social impacts** for the same reasons as discussed above under environmental impacts.

Require GHG releases to be also reported as CO_2 equivalent [#44b] = SWD E-PRTR#19

Description of the measure

This measure would require the reporting of GHGs like HFCs and PFCs in mass of CO_2e.

Economic impacts

Overall, this measure is likely to have **limited economic impacts** as it would only result in a slight increase in the steps that operators would have to take to be able to report data to the E-PRTR i.e. after measuring, calculating or estimating GHG releases, operators would have to estimate CO_2e using relevant factors before reporting. No impacts for SMEs are expected as a result of this measure.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **limited**. This measure has been assumed to only impact facilities currently reporting HFCs and PFCs and to a limited extent. Based on the estimated number of facilities impacted (326) and the cost assumptions described in Section 5.3.1, the additional recurrent costs are expected to be around €3,200 per year for operators. This is based on the assumption that the data is already available to operators so just requires a small amount of additional time to apply CO_2e factors.

Public authorities

Overall impacts on public authorities are expected to be **limited**. This includes some very limited additional time for QA for both Member State public authorities and the EEA although this is expected to be minimal as the data is already reported but at an aggregated level. Based on the estimated number of facilities impacted and the cost assumptions described in Section 5.3.1, the total additional recurrent costs for **public authorities** are expected to be around €4,500 per year.

Impacts for the **EEA** are expected to be **minimal** considering that the data is already reported but in different units so minimal changes would be required to the data and QA flows or website.

Environmental impacts

Overall, this measure is likely to have **limited environmental impacts** as it only provides similar data but in a different, more comparable format. Reporting GHG data in CO_2e should indirectly support better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). However, such a change would only affect a small number of facilities so the additional data provided would be limited.

Social impacts

Overall, this measure is likely to have **limited social impacts** for the same reasons as discussed above under environmental impacts.

5.3.6 PO5: Industrial scope

E-PRTR problem area 1a: Current activity thresholds and definitions

There is a lack of completeness in the reporting under identified activities in the E-PRTR. The E-PRTR is not capturing the targeted percentage (90%) of releases from industrial activities currently defined in the reporting requirements. The original aim of the E-PRTR was to capture 90% of industrial releases for each pollutant. In addition, the definitions and thresholds of some activities are inconsistent with the IED and other legislation such as the MCPD and UWWTD. Industrial activities operating in Europe have evolved since the E-PRTR came into force and therefore the thresholds for the activity list in Annex I needs to be reviewed and updated to ensure 90% data capture today. The reporting thresholds do not guarantee capture of 90% of releases and transfers from industrial facilities.

Revise capacity thresholds for 7(a) IRPP [#1 – sub-options consider thresholds of 150, 300 and 450 LSU] = SWD E-PRTR#21

Description of the measure

Reduce activity thresholds of poultry and pig farming in order to capture a higher proportion of pollutant releases from this activity. A revision in the activity threshold for this activity under the IED is also under consideration so it will be important to maintain coherence. The thresholds being assessed are 150, 300 and 450 LSU. It is important to note that thresholds in LSU could result in mixed livestock farms also being within scope of the E-PRTR if the thresholds applied to pig and poultry farms rather than individually.

Economic impacts

Overall, this measure is likely to have **strongly negative economic impacts** as it means that more facilities will have to report. The lower the threshold, the more facilities might have to report leading to more negative economic impacts. The total economic impacts have been estimated to comprise additional costs of between €11m and €20m per year.

Administrative burdens on businesses

The overall impact on the administrative burdens on businesses is assessed as **strongly negative**.

The administrative costs for business are presented in the table. It is builds on the unit costs presented in Section 5.3.1. The administrative costs are calculated as the unit costs times the estimated number facilities that will have to report.

For the lowest thresholds – 150 LSU – none of the facilities between 150 and 300 LSU is assessed to have emissions above the pollution thresholds. Hence, they will not have to report any data. If

pollution thresholds are lowered so that all facilities above the activity thresholds will have to report, the reporting costs could be significantly higher.

Table 5-15: Administrative costs for business from revised capacity thresholds for IRPP in €m						
Alternative capacity thresholds for IRRP	**No of additional facilities above activity threshold**	**Share that will report**	**Additional number of facilities reporting**	**One off costs**	**Recurrent costs**	**Total annual costs**
Threshold >450 LSU	8,647	100%	8,647	25.6	8.5	10.4
Threshold >300 LSU	19,007	80%	15,206	45.0	15.0	18.3
Threshold >150 LSU	40,064	38%	15,206	45.0	15.0	18.3

It should be noted that measure #46 on the use of top-down reporting would reduce the administrative burden significantly (by around 85% or more depending on the mechanism applied).

Operation / conduct of SMEs

The impact on the operation/conduct of SMEs is assessed as **weakly negative**. Most facilities in the IRPP sector are SMEs and probably a large share of those that could come within scope under a revised lower activity threshold will be small or micro-companies. With the current thresholds for pollutants, relatively few of the smallest farms would have to report. The reporting costs per facility is moderate so the operation of the farms is unlikely to be significantly affected. However, some negative impacts can still be expected.

It should be noted that measure 46 on the use of top-down reporting would reduce the effects on the operation of the SMEs significantly.

Public authorities

Overall, the impacts on public authorities are **weakly negative**. For public authorities the economic impacts include the additional costs related to managing the data reported from the facilities. With lowered activity thresholds for IRRP, there would be more facilities reported as presented above. The additional costs for CAs have been estimated using the unit costs per facility times the number of reporting facilities; see Section 5.3.1 for details on the approach and assumptions. The administrative costs are estimated to the be in order of €1m to €2m per year.

Table 5-16: Administrative costs for CAs from revised capacity thresholds for IRPP in €m						
Alternative capacity thresholds for IRRP	**No of additional facilities above activity threshold**	**Share that will report**	**Additional number of facilities reporting**	**One off costs**	**Recurrent costs**	**Total annual costs**
Threshold >450 LSU	8,647	100%	8,647	2.9	1.0	1.2
Threshold >300 LSU	19,007	80%	15,206	5.0	1.7	2.0
Threshold >150 LSU	40,064	38%	15,206	5.0	1.7	2.0

No impacts for the **EEA** are expected as the checking of data is fully automated and therefore independent of the number of facilities reporting for an existing activity.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts.** Increasing the number of facilities reporting will improve the level of data on emissions available within the E-PRTR,

potentially helping to improve environmental performance of the sector as it enables better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (because of access to information).

Social impacts

Overall, this measure is likely to have **weakly positive social impacts.** As discussed above, increasing the number of facilities reporting could potentially help to improve environmental performance of the sector which would have positive impacts for health. Furthermore, increasing the level of data available on performance of the sector improves public access to information potentially enabling greater participation in environmental decision making.

Revise capacity threshold for 5(d) landfills [#3] = SWD E-PRTR#27

Description of the measure

Increase the coverage of landfill sites by decreasing the activity threshold to less than 10 tonnes per day. This policy measure is being considered as part of the IED revision and therefore in order to ensure coherence between reporting the threshold(s) to be considered will be consistent.

Economic impacts

Overall, this measure is likely to have **no or limited negative economic impacts** as it is not expected to increase the number of reporting facilities with any significant number. No impacts for SMEs are expected as a result of this measure.

Administrative burdens on businesses

The number of additional facilities that might have to report has not been possible to quantify at this stage. It is expected to be very limited and therefore leading to limited additional administrative costs.

The impact on the administrative burden is assessed as **no or limited** impact.

Operation / conduct of SMEs

The affected number of SMEs have not been assessed. Given that impact on the administrative cost is estimated to be very limited, we assess that there will be **no or limited impacts** on the conduct of SMEs.

Public authorities

The impact on public authorities is assessed to be **no or limited impact**. Given that only a few additional facilities could be reporting, the additional costs of checking data and preparing the data submission will be very low.

Environmental impacts

The environmental impacts are assessed to be **no or limited impacts**. Given that only a few additional facilities could be reporting, the additional data will not change the coverage of the emissions and therefore not improve the decisions basis.

Social impacts

The social impacts are assessed to be **no or limited impacts**. Given that only a few additional facilities could be reporting, the additional data will not change the coverage of the emissions and therefore not improve the decisions basis.

Revise capacity threshold for 2(c)(ii) smitheries [#5 – sub-options consider no calorific power threshold or a calorific power threshold of 5 MW] = SWD E-PRTR#26

Description of the measure

Reduce the activity threshold for activity 2(c)(ii) to 20 kj and with either no calorific power threshold or where the calorific power exceeds 5MW. The current threshold is 50 kj per hammer, where the calorific power exceeds 20 MW. This measure will help to cover a larger proportion of the sectors emissions, especially to air. This policy option has been proposed by the IED Impact Assessment as a change to the IED and therefore in order to ensure coherence between reporting the threshold(s) to be considered will be consistent.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.** It is expected to increase the number of reporting facilities with around 700 facilities (assuming no capacity threshold) although it is unclear how many would be required to report with current pollutant reporting thresholds. This is potentially a large increase compared to the current number of smitheries reporting. Some of the additional facilities might be SMEs and therefore, there is a risk of negative impacts on the SMEs.

Administrative burdens on businesses

Overall, the impact on administrative costs is **weakly negative**.

The impact on administrative burden is estimated using the approach and assumptions presented in Section 5.3.1 and summarised in the table below.

Table 5-17: Administrative costs for business from revised capacity thresholds for smitheries in €M

	No of additional facilities above activity threshold	Share that will report	Additional number of facilities reporting	One off costs	Recurrent costs	Total annual costs
Revise capacity threshold for 2(c)(ii) smitheries	733	100%	733	4.3	1.4	1.8

Operation / conduct of SMEs

Overall, the impacts on the operation/conduct of SMEs are assessed as **weakly negative**. Some of the facilities that could come under scope with the changed activity threshold would be SMEs. They will face additional administrative costs although a number of these may be operating below the pollutant reporting thresholds so may not be required to report. The level of the administrative burden from reporting is moderate. Though the facilities will experience additional costs of the order estimated above, these costs are not expected to affect the operation or conduct of the SMEs in the industry.

Public authorities

Overall, this measure is assessed to have **no or limited impacts** on public authorities. The additional costs for CAs have been estimated using the unit costs per facility times the number of reporting

facilities; see Section 5.3.1 for details on the approach and assumptions. The administrative costs are estimated at only €0.1m per year.

Table 5-18: Administrative costs for CAs from revised capacity thresholds for smitheries in €M						
	No of additional facilities above activity threshold	**Share that will report**	**Additional number of facilities reporting**	**One off costs**	**Recurrent costs**	**Total annual costs**
Revise capacity threshold for 2(c)(ii) smitheries	733	100%	733	0.2	0.1	0.1

No impacts for the **EEA** are expected as the checking of data is fully automated and therefore independent of the number of facilities reporting for an existing activity.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts.** Increasing the number of facilities reporting will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of the sector as it enables better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). Given that, currently, only few smitheries are above the activity threshold, the change will significantly improve the coverage of the reporting from the sector.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts.** As discussed above, increasing the number of facilities reporting could potentially help to improve environmental performance of the sector which would have positive impacts for health. Furthermore, increasing the level of data available on performance of the sector improves public access to information potentially enabling greater participation in environmental decision making.

Various other capacity threshold/definitions changes with limited impacts

Description of the measure

There are a number of additional measures which are about changing various activity definitions and/or thresholds but which are not expected to have any significant impacts; they are listed below. The overall purpose of these changes is to increase the alignment with the IED.

Table 5-19: List of measures with revised capacity thresholds and definitions			
#	**Name**	**Description**	**# of facilities impacted**
[#8] = **SWD E-PRTR# 28**	Revise capacity threshold for activity 5(g)	Remove the 10,000 m3/day capacity threshold for activity 5(g) independently operated industrial wastewater treatment plants to align with the IED activity description	421[30]

[30] Of the 421 impacted facilities, it is estimated that 90 are new facilities, while the 331 are existing facilities that may have to report water pollutants.

Table 5-19: List of measures with revised capacity thresholds and definitions			
#	**Name**	**Description**	**# of facilities impacted**
[#9] = **SWD E-PRTR# 28**	Include sub-categories for 1(b) installations for gasification and liquefaction	Add sub-categories to include coal and "other fuels" to better align with the IED subcategories.	0
[#10] = **SWD E-PRTR# 28**	Include product sub-categories for 3(c) cement production	Re-assign the subcategories for cement production to be product categorised as done in the IED, e.g. production of cement in rotary kilns and other kilns, production of lime in kilns etc. This may cause some timeseries consistency issues for historical data.	0
[#12a] = **SWD E-PRTR# 28**	Align activity description for 1(c) with aggregation rules of IED (legislative option)	The IED contains aggregation rules for the definition of LCPs (E-PRTR activity 1(c)). The E-PRTR activity description would be updated to explicitly include the same rules for aggregation.	0
[#72] = **SWD E-PRTR# 28**	Reword 8(b) production of food and beverage products activity description to include feed products	Update the 8(b) activity description to include feed production in order to align with the activity description under the IED	0
Total			421

Economic impacts

Overall, these measures are likely to have **no or limited economic impacts.** They are only expected to increase the number of reporting facilities marginally.

Administrative burdens on businesses

The impact on the administrative burdens is assessed as **weakly negative**. Given that in most cases, the measures do not lead to any new facilities having to report, the administrative costs are limited. Only of the measures will potentially lead to an additional 90 new facilities having to report. This measure also impacts about 331 existing facilities that will have to report a few more pollutants. The total administrative costs are estimated at around €0.3m per year.

Operation / conduct of SMEs

Overall, the measures are assessed to have **no or limited impacts** on the operation of SMEs. Given the very limited additional administrative costs, the measures will not impact SMEs. Firstly, few SMEs are expected to be affected by the measures and secondly, where there could be SMEs affected, the additional costs are very limited.

Public authorities

Overall, the measures will have **no or limited** impacts on public authorities. The additional costs for public authorities will be very limited. As there are only few additional facilities that may have to report and that the checking of the data in relation to the revised definitions is also only requiring few additional resources. The additional costs for CAs are estimated at around €12,000 per year.

Environmental impacts

The environmental impacts are assessed to be **no or limited impacts**. Given that only a few additional facilities could be reporting, the additional data will not change the coverage of the emissions and therefore not improve the decisions basis. The changes to definitions etc. will also only very marginally change the quality of the reported data but will ensure coherence with the IED.

Social impacts

The social impacts are assessed to be **no or limited impacts**. Given that only a few additional facilities could be reporting, the additional data will not change the coverage of the emissions and therefore not improve the decisions basis.

Revise capacity thresholds for 1(c) combustion plants to 5 MWth and for 5(f) UWWTPs to 2,000 p.e. [#2] = SWD E-PRTR#29 and #30

Description of the measure

This measure considers (near) full alignment with the scope of the MCPD and UWWTD through a revision of the capacity thresholds for combustion plants to 5MWth and UWWTPs to 2,000 p.e.

For MCPs, this should include the aggregation rules of the MCPD (aggregate if waste gases go through a common stack or the competent authority judges them to). A further measure to include full alignment with the MCPD (i.e. 1-50MWth plants) was screened out due to the significant number of plants in the 1-5MWth category and potential impacts on SMEs.

For UWWTPs, the current threshold is set at 100,000 p.e.. Changing the threshold to 2,000 p.e. will increase the coverage of emissions from UWWTPs and align the E-PRTR with the scope of the UWWTD.
Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.** Changes to the capacity threshold for combustion plants and UWWTPs could potentially increase the number of reporting facilities quite significantly. However, with the current reporting thresholds for pollutants, not all facilities passing the capacity threshold will actually have to report. The number of MCPs that will have to report is uncertain as the plants often have low emissions. There are a large number of back-up plants and/or plants which only run for a small number of hours each year. The total economic impacts covering the costs for business and public authorities are around €8m as total annual costs.

Administrative burdens on businesses

This measure is assessed to have a **weakly negative impact** on the administrative burden for business.

The administrative costs for business are presented in the table below. It builds on the unit costs presented in the Section 5.3.1 and is calculated as the unit costs multiplied by the estimated number of facilities that will have to report[31,32]. Assessing the emissions from different sized plants has shown that only a small percentage of the MCPs above the revised thresholds will have to report. Similarly, for UWWTPs, with the current reporting thresholds for pollutants it is unlikely that all facilities will have to report. A rough assessment has been done focused on the reporting of nitrogen and

[31] https://ec.europa.eu/environment/air/clean_air/index.htm

[32] Number of facilities estimated based on the Waterbase-UWWTD https://www.eea.europa.eu/data-and-maps/data/waterbase-uwwtd-urban-waste-water-treatment-directive-7

phosphorus. The share that is likely to have to report has been assessed and the estimated number of additional facilities that may have to report is presented in the table below.

The estimated administrative costs are therefore around €7.5m per year. Should some of the relevant pollutant thresholds be lowered then the number of facilities would increase, and the administrative costs would increase proportionally.

Table 5-20: Administrative costs for business from revised capacity thresholds for combustion and urban wastewater treatment in €M

Capacity thresholds for combustion and UWWTPs	No of additional facilities above activity threshold	Share that will report	Additional number of facilities reporting	One off costs	Recurrent costs	Total annual costs
MCPs 5-50MWth	21,590	10%	2,159	6.4	2.1	2.6
UWWTP 2,000 p.e.	23,621	17%	4,028	11.9	4.0	4.9

Operation / conduct of SMEs

Though some of the MCPs and UWWTPs considered for inclusion could be small, they are typically owned and managed by larger entities. Most UWWTPs are municipal so they are publicly owned and if there are private operations, it is typically large companies. Therefore, few of the operators will be SMEs and the impact on the operation of SMEs can be assessed as **limited**.

Public authorities

The impacts on public authorities can therefore be assessed as **weakly negative.** The additional costs for CAs have been estimated using the unit costs per facility multiplied by the number of reporting facilities; see Section 5.3.1 for details on the approach and assumptions. The measure will potentially add a large number of additional facilities although not all are likely to have to report based on the current pollutant reporting thresholds. The total annual administrative costs for CAs are estimated at €0.4m.

Table 5-21: Administrative costs for CAs from revised capacity thresholds for combustion and UWWTPs in €M

Capacity thresholds for combustion and UWWTPs	No of additional facilities above activity threshold	Share that will report	Additional number of facilities reporting	One off costs	Recurrent costs	Total annual costs
MCPs 5-50MWth	21,590	10%	2,159	0.4	0.1	0.15
UWWTP 2,000 p.e.	23,621	17%	4,028	0.7	0.2	0.3

No impacts for the **EEA** are expected as the checking of data is fully automated and therefore independent of the number of facilities reporting for an existing activity.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts.** Increasing the number of facilities reporting will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of the sectors as it enables better comparison of performance of the sectors across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information). It would also improve alignment with the MCPD and UWWTD.

Social impacts

Overall, this measure is likely to have **positive social impacts.** As discussed above, increasing the number of facilities reporting could potentially help to improve environmental performance of the sectors which would have positive impacts for health. Furthermore, increasing the level of data available on performance of the sectors improves public access to information potentially enabling greater participation in environmental decision making.

Revise capacity thresholds for 1(c) combustion plants to 20 MWth and for 5(f) UWWTPs to 20,000 p.e. [#2] = SWD E-PRTR#29 and #30

Description of the measure

This measure considers partial alignment with the scope of the MCPD and UWWTD through a revision of the capacity thresholds for combustion plants to 20MWth and UWWTPs to 20,000 p.e.

For MCPs, this should include the aggregation rules of the MCPD (aggregate if waste gases go through a common stack or the competent authority judges them to).For UWWTPs, the current threshold is set at 100,000 p.e.. Changing the threshold to 20,000 p.e. will increase the coverage of emissions from UWWTPs and bring the E-PRTR closer to the definitions of the UWWTD. The UWWTD defines treatment standards and emission limit values for UWWTPs above 2,000 p.e.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts.** Changes to the capacity threshold for combustion plants and UWWTPs could potentially increase the number of reporting facilities quite significantly. However, with the current reporting thresholds for pollutants, not all facilities passing the capacity threshold will actually have to report. The number of MCPs that will have to report is uncertain as the plants often have low emissions. There are a large number of back-up plants and/or plants which only run for a small number of hours each year.

The total economic impacts covering the costs for business and public authorities are around €5m as total annual costs.

Administrative burdens on businesses

This measure is assessed to have a **weakly negative impact** on the administrative burden for business.

The administrative costs for business are presented in the table below. It builds on the unit costs presented in the Section 5.3.1 and is calculated as the unit costs multiplied by the estimated number of facilities that will have to report[33,34]. Assessing the emissions from different sized plants has shown that only a certain proportion of the MCPs above the revised threshold will have to report. Similarly, for UWWTPs, with the current reporting thresholds for pollutants it is unlikely that all facilities will have to report. A rough assessment has been done focused on the reporting of nitrogen and phosphorus and the share that is likely to have to report has been assessed and the estimated number of additional facilities that may have to report is presented in the table below.

[33] https://ec.europa.eu/environment/air/clean_air/index.htm

[34] Number of facilities estimated based on the Waterbase-UWWTD https://www.eea.europa.eu/data-and-maps/data/waterbase-uwwtd-urban-waste-water-treatment-directive-7

The estimated administrative costs are therefore €4.8m per year. Should some of the relevant pollutant thresholds be lowered then the number of facilities would increase, and the administrative costs would increase proportionally.

Table 5-22: Administrative costs for business from revised capacity thresholds for combustion and urban wastewater treatment in €M

Capacity thresholds for combustion and UWWTPs	No of additional facilities above activity threshold	Share that will report	Additional number of facilities reporting	One off costs	Recurrent costs	Total annual costs
MCPs 20-50MWth	4,946	25%	1,236	3.7	1.2	1.5
UWWTP 20,000 p.e.	4,277	64%	2,756	8.2	2.7	3.3

Operation / conduct of SMEs

Though some of the MCPs and UWWTPs considered for inclusion could be small, they are typically owned and managed by larger entities. Most UWWTPs are municipal so they are publicly owned and if there are private operations, it is typically large companies. Therefore, few of the operators will be SMEs and the impact on the operation of SMEs can be assessed as **limited**.

Public authorities

The impacts on public authorities can therefore be assessed as **weakly negative.** The additional costs for CAs have been estimated using the unit costs per facility multiplied by the number of reporting facilities; see Section 5.3.1 for details on the approach and assumptions. The measure will potentially add a large number of additional facilities although not all are likely to have to report based on the current pollutant reporting thresholds. The total annual administrative costs for CAs are estimated at €0.3m.

Table 5-23: Administrative costs for CAs from revised capacity thresholds for combustion and UWWTPs in €M

Capacity thresholds for combustion and UWWTPs	No of additional facilities above activity threshold	Share that will report	Additional number of facilities reporting	One off costs	Recurrent costs	Total annual costs
MCPs 20-50MWth	4,946	25%	1,236	0.2	0.07	0.08
UWWTP 20,000 p.e.	4,277	64%	2,756	0.5	0.2	0.2

No impacts for the **EEA** are expected as the checking of data is fully automated and therefore independent of the number of facilities reporting for an existing activity.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts.** Increasing the number of facilities reporting will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of the sectors as it enables better comparison of performance of the sectors across the EU as well as greater engagement of citizens in environmental decision-making (because of access to information). It would also improve alignment with the MCPD and UWWTD.

Social impacts

Overall, this measure is likely to have **positive social impacts.** As discussed above, increasing the number of facilities reporting could potentially help to improve environmental performance of the sectors which would have positive impacts for health. Furthermore, increasing the level of data available on performance of the sectors improves public access to information potentially enabling greater participation in environmental decision making.

E-PRTR problem area 1b: Missing activities and sub-activities

The original aim of the E-PRTR was to capture 90% of industrial releases for each pollutant. Industry in Europe has changed since the E-PRTR came into force in 2006 with new activities becoming more widespread. Therefore, the activity list in Annex I needs to be updated. Missing activities mean that the E-PRTR does not provide a complete picture of releases and transfers and cannot be used as a tool to fully understand impacts and ensure coherent environmental policy. Furthermore, the IED is being revised so it will be important to maintain coherence with any future scope.

Cattle farming [#15 – sub-options consider thresholds of 150, 300 and 450 LSU] = SWD E-PRTR#20

Description of the measure

There is no activity covering intensive cattle and it is proposed to include an additional activity in Annex I of the E-PRTR covering these farms. This policy option has been proposed for inclusion within the IED and therefore to ensure coherence between reporting the exact threshold(s) and activity definition to be considered will be informed by that process. There are alternative activity thresholds being considered. They all relate to the number of livestock units (LSU). In line with the IED revision, the following thresholds are being assessed:

- 150 LSU;
- 300 LSU; and
- 450 LSU.

Economic impacts

Overall, the economic impacts are **strongly negative**. The measure will increase the number of reporting facilities and potentially with a large number.

The annual costs have been estimated to be in the order of €11 – 23m, primarily for operators but also MS CAs. This based on the estimated number of additional facilities would be required to report which is estimated to vary between around 9,000 up to 18,000 facilities.

Administrative burdens on businesses

Overall, the impacts on the administrative burden for business are **strongly negative**.

The administrative costs for business are presented in the table below. It builds on the unit costs presented in Section 5.3.1. The administrative costs are calculated as the unit costs multiplied by the estimated number of facilities that will have to report[35].

[35] Data on number of facilities are based on Ricardo (2021) *Updating of available information for undertaking the assessment of impacts for a possible modification of the IED with regard to aspects of intensive agriculture.*

Table 5-24: Administrative costs for business from alternative capacity thresholds for cattle in €m						
Alternative capacity thresholds for cattle	**No of additional facilities above activity threshold**	**Share that will report**	**Additional number of facilities reporting**	**One off costs**	**Recurrent costs**	**Total annual costs**
Threshold >450 LSU	8,523	100%	8,523	25.2	8.4	10.3
Threshold >300 LSU	26,624	66%	17,574	52.1	17.4	21.2
Threshold >150 LSU	120,727	15%	17,574	52.1	17.4	21.2

The alternative thresholds could potentially lead to a significant number of additional facilities being captured. However, an assessment of likely emissions from farms of different sizes has shown that no or few facilities below 300 LSU are expected to have to report under current NH_3 and CH_4 reporting thresholds, and only around 66% above 300 LSU (based on a worst-case assessment of likely emissions i.e. using the highest emission factors to estimate farm level emissions).

It should be noted that if NH_3 and/or CH_4 reporting thresholds are reduced, then the total number of facilities could increase. As a result, the administrative costs would increase proportionally with the number of facilities. In contrast, if measure #46 on the use of top-down reporting were to be applied to cattle then this would reduce the administrative burden significantly (by around 85% or more depending on the mechanism applied).

Operation / conduct of SMEs

Overall, the impact on the operation/conduct of SMEs is assessed as **weakly negative**.

Most facilities in the cattle sector are SMEs and probably a large share of those that could come within scope would be small or micro-companies. With the current thresholds for pollutants, relative few of the smallest farms would have to report. The reporting costs per facility is moderate so the operation of the farms is unlikely to be significantly affected. Still some negative impacts can be expected.

It should be noted that measure 46 on the use of top-down reporting would reduce the effects on the operation of the SMEs significantly.

Public authorities

The impacts on public authorities are assessed as **strongly negative**.

For public authorities the economic impacts include the additional costs related to managing the data reported from the facilities. With adding cattle farms to the scope of the E-PRTR, there would be significantly more facilities reported as presented above. The additional costs for CAs have been estimated using the unit costs per facility multiplied by the number of reporting facilities; see Section 5.3.1 for details on the approach and assumptions.

The administrative costs are estimated to the be in order of €1m to €2m per year.

Table 5-25: Administrative costs for CAs from alternative capacity thresholds for cattle in €m						
Alternative capacity thresholds for cattle	**No of additional facilities above activity threshold**	**Share that will report**	**Additional number of facilities reporting**	**One off costs**	**Recurrent costs**	**Total annual costs**
Threshold >450 LSU	8,523	100%	8,523	2.8	0.5	0.7
Threshold >300 LSU	26,624	66%	17,574	5.8	1.0	1.4

Table 5-25: Administrative costs for CAs from alternative capacity thresholds for cattle in €m						
Alternative capacity thresholds for cattle	**No of additional facilities above activity threshold**	**Share that will report**	**Additional number of facilities reporting**	**One off costs**	**Recurrent costs**	**Total annual costs**
Threshold >150 LSU	120,727	15%	17,574	5.8	1.0	1.4

The impact on the **EEA** is estimated to be relatively **limited**[36]. The additional annual costs are estimated at less than 1,000 EUR. This includes costs associated with adding a new activity to the database and reporting tools. As QA/QC of data is automated, the additional facilities and additional data being reported should not add to the costs.

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts.** Including cattle and increasing the number of facilities reporting will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of the cattle sector as it enables better comparison of performance of the sector across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information).

It should be noted that with the current pollutant thresholds, only a proportion of emissions from the cattle sector will be reported.

Social impacts

Overall, this measure is likely to have **weakly positive social impacts.** As discussed above, the inclusion of the cattle sector in E-PRTR could potentially help to improve environmental performance of the sector which would have positive impacts for health. Furthermore, increasing the level of data available on performance of the sector improves public access to information potentially enabling greater participation in environmental decision making. Like the case for the environmental impacts, adding reporting from only the largest cattle farms means that not all the emissions are covered by the reporting.

Various other measures with limited impacts

Description of the measures

There are several additional measures which are about changing various definitions and adding activities to achieve better alignment and coherence with the IED – both in its current version and the changes proposed for a revised IED. They are listed below, and they are not expected to have any significant impacts on costs and benefits.

Table 5-26: List of measures with revised capacity thresholds and definitions				
Category	**#**	**Measure**	**Description**	**# of facilities impacted**
Align with potential revised IED scope	[#18] = **SWD E-PRTR#22**	Include battery production, disposal and recovery	Include battery production, disposal and recovery in activity list. This measure is being considered as part of the IED revision and therefore to ensure coherence between reporting the exact threshold(s) and activity	70

[36] EEA costs associated with some measures are under revision in collaboration with the EEA and may be revised.

Table 5-26: List of measures with revised capacity thresholds and definitions				
Category	**#**	**Measure**	**Description**	**# of facilities impacted**
			definition to be considered will be informed by that process.	
	[#20] = **SWD E-PRTR#24**	Include an additional sub-sector for forging presses, cold rolling & wire drawing	Include an additional sub-sector for forging presses, cold rolling, with a capacity threshold of 10 t/h, and wire drawing, with a capacity threshold of 2 t/h, under activity 2. This measure is being considered as part of the IED revision.	350[37]
	[#21] = **SWD E-PRTR#25**	Inclusion of an additional sub-sector for textile finishing	Inclusion of textile finishing in the activity list under activity 9 (Other activities). Rename the current activity 9(a) to activity 9(a)(i) - Plants for the pre-treatment (operations such as washing, bleaching, mercerisation) or dyeing of fibres or textiles (a current activity) and include an additional sub activity of 9(a)(ii) Textile finishing with the same threshold as the current 9(a) activity. This measure is being considered as part of the IED revision.	76
	[#23] = **SWD E-PRTR#28**	Include an additional sub-activity for shipyards / dismantling	Include an additional sub-activity under 9 - Other activities for shipyards / dismantling. Currently only building of and painting or removal of paint from ships is included in the activity list (9(e))). This measure is being considered as part of the IED revision.	6
Align with current IED scope	[#27] = **SWD E-PRTR#28**	Include MgO production	Include MgO production in klns with a threshold of 50 t/day to align with IED activity 3.1(c).	25
	[#28] = **SWD E-PRTR#28**	Include CO_2 capture	Include capture of CO_2 streams for geological storage with no threshold to align with IED activity 6.9.	9
	[#29] = **SWD E-PRTR#28**	Additional sub-categories and improved descriptions for 5(a) & 5(b)	Align these categories with the IED activity descriptions to ensure reporters know that disposal includes incineration/co-incineration (subcategories to match IED activities 5.1 and 5.2(b). Additionally, include recovery in the activity definition.	0
	[#30] = **SWD E-PRTR#28**	Additional hazardous waste sub-category for temporary storage	IED activity 5.6 - temporary storage of hazardous waste is not included in the E-PRTR activities list and should be considered for inclusion.	9
	All			545

Economic impacts

[37] This measure would expand the existing scope and is expected to cover around 250-450 facilities. The range of forge presses, cold rolling and wiredrawing facilities is based on information found in the 2001 and 2019 BREFs for Ferrous Metals Processing. Detailed data outlining the capacity of forge presses, cold rolling and wire drawing installations was not found. The mid-point of the range has been included within the analysis of the measure.

Overall, these measures are likely to have **no or limited economic impacts.** They are only expected to increase the number of reporting facilities marginally.

Administrative burdens on businesses

Overall, the measures are assessed to have **no or limited** impacts on administrative burdens.

Given that in most cases, the measures only lead to a small number of new facilities having to report, the administrative costs are limited. Only the measures which potentially could lead to an additional 350 new facilities having to report would increase reporting costs. The total administrative costs for **all** the measures are estimated at around €1.3m per year.

Operation / conduct of SMEs

Overall, the measures are assessed to have **no or limited impacts** on the operation of SMEs. Given the very limited additional administrative costs, the measures will not impact the operation of SMEs. Firstly, few SMEs are expected to be affected by the measures and secondly, where there could be SMEs affected, the additional costs are very limited.

Public authorities

Overall, the measures will have **no or limited impacts** on public authorities. The additional costs for public authorities will be very limited and they are estimated at €37,000 per year. As there are only a limited number of additional facilities that may have to report and the checking of the data in relation to the revised definitions is also only requiring few additional resources.

Environmental impacts

The environmental impacts are assessed to be **no or limited impacts**. Given that only a few additional facilities could be reporting, the additional data will not change the coverage of the emissions and therefore not improve the decisions basis. The changes to definitions of included activities will also only very marginally change the quality of the reported data but will ensure coherence with the IED.

Social impacts

The social impacts are assessed to be **no or limited impacts**. Given that only a few additional facilities could be reporting, the additional data will not change the coverage of the emissions and therefore not improve the decisions basis.

Establish a dynamic mechanism to identify and include emerging activities of concern ('sunrise list' for activities) [#31] = SWD E-PRTR#31

Description of the measure

This measure would entail the inclusion of a more dynamic mechanism to identify and include emerging activities of concern ("sunrise list") within the Regulation e.g. enabling the Commission to identify and include new activities in the future via delegated acts.

Economic impacts

Overall, this measure is likely to have **weakly negative economic impacts** as it will lead to a greater number of activities being captured under E-PRTR in the future and more facilities having to report release and transfer data. Some additional activities for inclusion and existing activities with revised thresholds and/or definitions have already been identified and included under other measures (with

associated assessment of impacts). It is unknown what further activities may be included in the future and thus it is not possible to assess the impacts that may be incurred.

In addition to additional data collection and reporting for operators, there would also be time required for the European Commission and/or EEA to maintain the sunrise list and identify activities of emerging concern.

Administrative burdens on businesses

Overall impacts on administrative burdens for businesses are expected to be **weakly negative** for any new activities included in the future although the scale of such impacts is unclear at this stage.

Operators in any new activities will have to measure, calculate and/or estimate releases to see whether they are above or below the reporting thresholds. If they are above the threshold then the data would need to be reported. Some initial time would also be required to set up the appropriate data capture, calculation and reporting mechanisms up front.

Operation / conduct of SMEs

Overall impacts on SMEs are expected to be **very limited**. Appropriate activity thresholds would need to be established for any new activities to ensure that smaller facilities (potentially including SMEs) would not be required to report.

Public authorities

Overall impacts on **public authorities** are expected to be **weakly negative**. This includes additional time for QA of data for any new activities for both Member State public authorities and the EEA as well as some initial upfront time to amend the existing data flow and QA systems to incorporate new activities.

The EEA and/or European Commission would incur some additional costs for maintaining the sunrise list and identifying and reviewing potential emerging activities. This is assumed to cost around €15,000 per year (assuming consultants are used to assess specific activities) with a further 30 man-days every 5 years to develop and agree a proposal for new activity(ies) (equating to annualised costs of around €2,600 per year).

Environmental impacts

Overall, this measure is likely to have **weakly positive environmental impacts** as it will increase the coverage of activities that are reporting to the E-PRTR. It will ensure that the E-PRTR activity list can be updated as and when emerging activities are identified helping to support the objectives of wider environmental policies such as IED, WFD, UWWTD etc.

Increasing the activity coverage will improve the level of data on emissions available within the E-PRTR, potentially helping to improve environmental performance of those activities being included as it enables better comparison of performance across the EU as well as greater engagement of citizens in environmental decision-making (as a result of access to information).

Social impacts

Overall, this measure is likely to have **weakly positive social impacts** as the emissions coverage within E-PRTR will be expanded. As discussed above, increasing the number of activities and facilities reporting could potentially help to improve environmental performance of those activities included

which would have positive impacts for health. Furthermore, including new activities improves public access to information potentially enabling greater participation in environmental decision making.

6 Comparison of the options

This section seeks to highlight the key aspects of the impact assessment relevant for supporting decision-making on the choice of options and sub-options to include in the preferred package.

6.1 Costs per facility

The various options and policy measures considered as part of the impact assessment will affect facilities very differently. The option with the highest cost impacts for a large number of facilities would be Option PO3 "Circular Economy, Resource Efficiency and Safer Chemicals" and the policy measures of reporting on energy, water and raw materials. These policy measures would affect all reporting facilities. The recurrent costs for Option 3 are estimated to about €1,400 for an average facility. The one-off costs have been estimated and annualised to be around €300. The total annual cost would then increase by €1,700. For a facility that would have to report on new pollutants and energy, water and raw materials, the annual reporting costs could increase by around 80%.

Under PO5 and the aligning of activity thresholds or inclusion of new activities, many new facilities could be brought into scope. They are generally lower complexity facilities (e.g. medium combustion plants) and are estimated to incur additional annual costs in the order of €1,220. For many of the other options or sub-options, only a few facilities will be impacted by each sub-option.

An assessment of each of the main options is presented below.

Table 6-1: Cost assessment per facility

Option	Type of policy measure	Effect for existing facilities or new facilities in scope	Typical change in annual costs	Percentage compared to baseline
Baseline	Average facility		≈€2440 per facility	NA
PO1	Changing pollutants thresholds	Additional costs for existing facilities	€40 per facility	<2% increase
	Sunset list	Saving for existing facilities	€20 per facility	<1% savings
PO3	Additional pollutants	Additional costs for existing facilities	€250 per facility	≈10% increase
	Reporting of energy, water and raw materials	Additional costs for existing facilities	Costs of €1,700 per facility	≈70% increase
PO4		No change for typical facility	NA	NA
PO5	Changing activity thresholds or inclusion of new activities	Additional facilities being included with annual costs lower than the average facility as typically considered lower complexity than typical E-PRTR facility	≈€1,220 per facility	NA – applicable to new facilities only.

6.2 Option comparison and recommended option

This subsection brings together the impact assessment results of all policy measures (Table 6-3). For some of the measures, the additional administrative costs have been estimated. Where costs are quantitative, the correspondence to the qualitative assessment of impacts are as set out in the

following table (based on annualised costs). Costs have been annualised using a discount rate of four percent over a 20-year period.

Table 6-2: Relation between qualitative and quantitative assessment of impacts					
Colour coding	--	-	O	+	++
Qualitative	Strongly negative	Weakly negative	No or limited impact	Weakly positive	Strongly positive
Quantitative – business	> - €10m	- €1m to - €10m	0 to -€1m	0 to €1m	> €10m
Quantitative – public authorities	> - €1m	- €0.1m to - €1m	0 to -€0.1m	0 to €0.1m	> €1m

The recommended option is composed of all those measures with favourable cost-benefit profiles, which were determined by comparing the quantitative and qualitative evidence on economic, environmental and social impacts, identifying the trade-offs among various stakeholder groups, the synergies between the policy measures, and assessing their proportionality.

Table 6-3: Option comparison (€ million)									
E-PRTR policy measures [#measure ID] = SWD measure ID*	**Economic impacts**						**Environmental impacts**	**Social impacts**	**Preferred measure?**
	Businesses			**Administrations**					
	One-off	**Recurrent**	**Total annualised**	**One-off**	**Recurrent**	**Total annualised**			
PO1 Effectiveness									
Clarify that activity 3(b) covers upstream oil and gas facilities [#16] = **SWD E-PRTR#6**	7.84	2.61	3.19	0.44	0.15	0.18	Weakly positive	Weakly positive	Y
Remove 3(d) production of asbestos from activity list [#17]	0	0	0	0	0	0	-	-	N
Reword 5(d) landfills activity description to include flaring of vent gas [#11]= **SWD E-PRTR#8**	0	0	0	0	0	0	Weakly positive	Weakly positive	Y
Reduce reporting thresholds for some existing pollutants to better meet the aim of 90% capture [#33a-x / n=24] = **SWD E-PRTR#1**	0	0.73	0.73	0	1.02	1.02	Weakly positive	Weakly positive	Y
Establish a 'sunset list' to remove pollutants that are no longer of concern [#32]= **SWD E-PRTR#5**	0	-0.99	-0.99	0	-0.001	-0.001	-	-	Y
Add an option for top-down reporting for activity 7 (intensive livestock production and aquaculture) [#46]= **SWD E-PRTR#9**	0	-16.97	-16.97	0	0	0	-	-	Y
Introduce sub-facility reporting [#45= **SWD E-PRTR#2**]	0	0.08	0.08	0.01	0.11	0.12	Weakly positive	Weakly positive	Y
Add active operator confirmation that releases are below the reporting threshold [#52] = **SWD E-PRTR#3**	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	-	-	Y
Mandate the M/C/E hierarchy [#58] = **SWD E-PRTR#4**	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	-	-	Y
PO2 Innovation									
No measures retained	-	-	-	-	-	-	-	-	-
PO3 Circular Economy, Resource Efficiency and Safer Chemicals									

Table 6-3: Option comparison (€ million)									
E-PRTR policy measures [#measure ID] = SWD measure ID*	**Economic impacts**						**Environmental impacts**	**Social impacts**	**Preferred measure?**
	Businesses			**Administrations**					
	One-off	**Recurrent**	**Total annualised**	**One-off**	**Recurrent**	**Total annualised**			
Establish a mechanism for dynamic updating to include additional pollutants of immediate interest and future interest (sunrise list) [#37] = **SWD E-PRTR#10**	13.16	4.39	5.36	1.01	0.31	0.38	Weakly positive	Weakly positive	Y
Require the reporting of energy use [#38] = **SWD E-PRTR#11**	16.96	5.65	6.9	0.02	0.01	0.007	Weakly positive	Weakly positive	Y
Require the reporting of water use [#39] = **SWD E-PRTR#12**	16.96	5.65	6.9	0.02	0.01	0.007	Weakly positive	Weakly positive	Y
Require the reporting of raw material use [#40] = **SWD E-PRTR#13**	84.80	8.27	34.51	0.11	0.03	0.03	Weakly positive	Weakly positive	Y
Reporting waste composition of waste transfers [#41] = **SWD E-PRTR#14**	0	0.42	0.42	0.001	0.59	0.59	Weakly positive	Weakly positive	N
Improve tracking of waste transfers [#42] = **SWD E-PRTR#15**	0	0.42	0.42	0.001	0.59	0.59	Weakly positive	Weakly positive	N
Improve tracking of waste water transfers [#43] = **SWD E-PRTR#16**	0	0.03	0.03	0.001	0.04	0.04	Weakly positive	Weakly positive	N
Reporting releases from products [#70] = **SWD E-PRTR#17**	0	0	0	0.15	0	0.01	Weakly positive	Weakly positive	N
PO4 Decarbonisation									
Disaggregation of some currently reported GHGs (e.g. HFCs, PFCs) [#44a] = **SWD E-PRTR#18**	0	0.003	0	0	0.003	0.004	-	-	Y
Require GHG releases to be also reported as CO_2 equivalent [#44b] = **SWD E-PRTR#19**	0	0.003	0	0	0.003	0.004	-	-	N
PO5 Industrial scope									
Alignment with current IED scope									
Revise capacity threshold of 5(g) independently operated industrial waste water treatment plants to align	0.53	0.24	0.28	0.03	0.01	0.01	-	-	Y

Table 6-3: Option comparison (€ million)									
E-PRTR policy measures [#measure ID] = SWD measure ID*	**Economic impacts**						**Environmental impacts**	**Social impacts**	**Preferred measure?**
	Businesses			**Administrations**					
	One-off	**Recurrent**	**Total annualised**	**One-off**	**Recurrent**	**Total annualised**			
with the IED activity description [#8] = **SWD E-PRTR#28**									
Include sub-categories for 1(b) installations for gasification and liquefaction to include coal and "other fuels" to better align with the IED sub-categories [#9] = **SWD E-PRTR#28**	0	0	0	0	0	0	-	-	Y
Include product sub-categories for 3(c) cement production [#10] = **SWD E-PRTR#28**	0	0	0	0	0	0	-	-	Y
Align activity description for 1(c) thermal power stations with IED aggregation rules [#12a] = **SWD E-PRTR#28**	0	0	0	0	0	0	-	-	Y
Reword 8(b) production of food and beverage products activity description to include feed products to align with the IED activity description [#72] = **SWD E-PRTR#28**	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	-	-	Y
Add MgO production in kilns with a threshold of 50 t/day to 3(c) so as to align with IED activity 3.1(c) [#27] = **SWD E-PRTR#28**	0.15	0.05	0.06	0.01	0.003	0.003	-	-	Y
Include capture of CO_2 streams for geological storage with no threshold so as to align with IED activity 6.9 [#28] = **SWD E-PRTR#28**	0.05	0.02	0.02	0.003	0.001	0.001	-	-	Y
Add additional sub-categories and improved descriptions for 5(a) & 5(b) waste treatments so as to align with the IED activity descriptions and ensure	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	-	-	Y

Table 6-3: Option comparison (€ million)									
E-PRTR policy measures [#measure ID] = SWD measure ID*	**Economic impacts**						**Environmental impacts**	**Social impacts**	**Preferred measure?**
	Businesses			**Administrations**					
	One-off	**Recurrent**	**Total annualised**	**One-off**	**Recurrent**	**Total annualised**			
reporters know that disposal includes incineration/co-incineration. Additionally, include recovery in the activity definition [#29] = **SWD E-PRTR#28**									
Add an additional hazardous waste sub-category for temporary storage so as to align with IED activity 5.6 temporary storage of hazardous waste [#30] = **SWD E-PRTR#28**	0.05	0.02	0.02	0.003	0.001	0.001	-	-	Y
Alignment with potential revised IED scope									
Revise capacity thresholds for 7(a) IRPP [#1a 150 LSU] = **SWD E-PRTR#21**	45.05	15.02	18.33	5.03	1.68	2.04	Weakly positive	Weakly positive	Y
Revise capacity thresholds for 7(a) IRPP [#1b 300 LSU] = **SWD E-PRTR#21**	45.05	15.02	18.33	5.03	1.68	2.04	Weakly positive	Weakly positive	N
Revise capacity thresholds for 7(a) IRPP [#1c 450 LSU] = **SWD E-PRTR#21**	25.62	8.54	10.42	2.86	0.95	1.16	Weakly positive	Weakly positive	N
Revise capacity threshold for 5(d) landfills [#3] = **SWD E-PRTR#27**	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	Not quantified	-	-	N
Revise capacity threshold for 2(c)(ii) smitheries [#5 – sub-options consider no calorific power threshold or a calorific power threshold of 5 MW] = **SWD E-PRTR#26**	4.35	1.45	1.77	0.24	0.08	0.1	Weakly positive	Weakly positive	Y
Add intensive cattle farming [#15a 150 LSU] = **SWD E-PRTR#20**	52.06	17.35	21.18	5.81	0.97	1.39	Weakly positive	Weakly positive	Y
Add intensive cattle farming [#15b 300 LSU] = **SWD E-PRTR#20**	52.06	17.35	21.18	5.81	0.97	1.39	Weakly positive	Weakly positive	N
Add intensive cattle farming [#15c 450 LSU] = **SWD E-PRTR#20**	25.25	8.42	10.27	2.82	0.47	0.68	Weakly positive	Weakly positive	N

Table 6-3: Option comparison (€ million)									
E-PRTR policy measures [#measure ID] = SWD measure ID*	**Economic impacts**						**Environmental impacts**	**Social impacts**	**Preferred measure?**
	Businesses			**Administrations**					
	One-off	**Recurrent**	**Total annualised**	**One-off**	**Recurrent**	**Total annualised**			
Include battery production, disposal and recovery [#18] = **SWD E-PRTR#22**	0.41	0.14	0.17	0.02	0.01	0.01	-	-	Y
Include an additional sub-sector for forging presses, cold rolling & wire drawing [#20] = **SWD E-PRTR#24**	2.07	0.69	0.84	0.12	0.04	0.04	-	-	N
Inclusion of an additional 9(a) sub-sector for textile finishing [#21] = **SWD E-PRTR#25**	0.45	0.15	0.18	0.03	0.01	0.01	-	-	N
Include an additional 9(d) sub-activity for shipyards / dismantling [#23] = **SWD E-PRTR#28**	0.04	0.01	0.01	0.002	0.001	0.001	-	-	Y
Alignment with MCPD and UWWTD									
Near to full alignment with MCPD and UWWTD (5-50MWth and 2,000 p.e.) [#2] = **SWD E-PRTR#29**	18.33	6.11	7.45	1.02	0.34	0.41	Weakly positive	Positive	N
Partial alignment with scope of MCPD and UWWTD by focusing on largest facilities (20-50MWth and 20,000 p.e.) [#2] = **SWD E-PRTR#30**	11.83	3.94	4.81	0.66	0.22	0.26	Weakly positive	Positive	Y
Establish a dynamic mechanism to identify and include emerging activities of concern ('sunrise list' for activities) [#31] = **SWD E-PRTR#31**	0	0	0	0	0.02	0.02	Weakly positive	Weakly positive	Y
Preferred option	**254**	**65**	**86**	**13**	**5**	**6**	**Weakly positive**	**Weakly positive**	
Notes: This table refers to both the numbering used in this report (between [#]) and the numbering used in the Commission Staff Working Document.									

7 Monitoring and evaluation of impacts

The main objectives of the recommended option are to:

1. Increase the E-PRTR coverage of pollutant releases and transfers from industrial activities;
2. Increase the usefulness of E-PRTR data by complementing them with data on resource consumption, to support stakeholders to track the performance of the industry in contributing to the Green Deal, energy or circular economy commitments;
3. Increase the alignment of the E-PRTR with the IED, MCPD and UWWTD.

This section proposes some indicators to track progress against these objectives, and monitor changes brought about by policy intervention.

7.1 Increase E-PRTR coverage

The proposed key indicator is defined as

> *Completeness rates (in percentage) of reported releases per sector, broken down by Member State, environmental media and pollutant*

Weibull analysis, as used in ICF et al. (2020), can be used to populate this indicator. This approach, also called life data analysis, fits a statistical distribution[38] to E-PRTR reported measurements to estimate the quantity of unreported below-threshold releases, assuming that these follow the same distribution. The fitted curve can infer the threshold and number of facilities that are needed to capture 90% of releases, as well as calculate the capture rate for each pollutant.

7.2 Increase E-PRTR usefulness

The aim of the E-PRTR Regulation is to facilitate public participation in environmental-decision making. While to measure the achievement of this objective is difficult, some proxies can be defined to measure e.g. the number of scientific papers using E-PRTR data, the number of mainstream news articles referring to the E-PRTR, etc.

Other proxies can be defined and populated with web statistics from the Industrial Emissions Portal, to measure the public's access to IED/ E-PRTR combined information. Such proxies can be a combination of behavioural and attitudinal user experience (UX) metrics, comparing users' behaviours (e.g. number of downloads, data selection, pageviews, time spent on the portal) with users' attitude (usually quantified by administering users surveys scoring website usability and data quality and completeness).

7.3 Increase E-PRTR alignment with other legislation

Finally, perceptions on improvements to legal clarity can be monitored via the BREF process, through e-surveys addressed to the IED and E-PRTR stakeholder community.

[38] Often a 1-parameter, 2-parameter, 3-parameter or mixed Weibull distribution, but could also be exponential, lognormal and normal distributions.

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Regulation (EC) No 166/2006 of the European Parliament and of the Council of 18 January 2006 concerning the establishment of a European Pollutant Release and Transfer Register and amending Council Directives 91/689/EEC and 96/61/EC (Text with EEA relevance). OJ L 33, 4.2.2006, p. 1–17.

UN (2003): Protocol on Pollutant Release and Transfer Registers. Chapter XXVII. Environment, Title 13.a. Kiev, 21 May 2003.

Annex 1 Stakeholder consultation

A1.1 Open public consultation

A1.1.1 OPC method statement

Data collection

The open public consultation (OPC) ran for 13 weeks, from 22 December 2020 to 23 March 2021. The OPC aimed to gather opinions for the impact assessment for revision to the IED and the E-PRTR Regulation. The consultation consisted of 24 questions, four of which directly regard the E-PRTR.

All citizens and organisations were welcomed to participate by completing an online questionnaire distributed via the EUSurvey platform. The OPC was publicised via the "Have your say" European Commission's portal[39], and relevant stakeholders were notified of the opening of the OPC via email.[40] Respondents to the consultation were also allowed to upload position papers.

Data preparation

Exported questionnaire data underwent a 'cleaning' process prior to its analysis. This process sought to identify and remove any duplicate or malicious responses which may affect the validity of the survey's results. Investigations of the data included searches for blank submissions, which typically indicate respondents who have reviewed questions without providing a substantive response. All blank responses were identified and were filtered out of the final analysis for each question.

The check for duplicates involved looking at the following fields: i) combination of first name and surname; ii) email and iii) organisation name and transparency register. The underlying assumption to remove these duplicates is that each stakeholder can participate only once in the consultation. In total, no responses were removed due to duplication as variation in answers existed in all similar information.

Cleaning of responses also included the investigation of those classifying themselves as 'other' (nine responses) as to whether any discernible stakeholder traits were present. In cooperation with the Commission, one was reclassified as a company, three were reclassified as a business association, and five remained as 'other'. These final five 'other' cannot be characterised by any discernible trait that corresponds with a specific stakeholder type.

Clustering of stakeholders

To ensure a correct understanding of the results, stakeholder types were grouped in meaningful combinations. These groups were provided by the Commission, and stakeholders were grouped under the following combinations:

- Companies and business associations; including:
  - Company/business organisations
  - Business associations
- Public authorities

[39] https://ec.europa.eu/info/law/better-regulation/have-your-say_en

[40] The mailing list includes over 800 stakeholders contacts.

- EU Citizens
- Non-governmental organisations (NGOs) were split into two categories:
  - Civil society NGOs (including only NGOs that operate in the finance, justice, health, and legal sectors)
  - Environmental NGOs (combining stakeholder types; environmental organisation, and NGOs with explicit links to environmental concerns)
- Other; including:
  - Academic/research institutions
  - Trade unions
  - Non-EU citizens
  - Other

The number of respondents in each stakeholder group can be found in the respondent profile section below.

Campaign identification

The data were checked for organised campaign responses by investigating whether responses to the questionnaire relied on the same EUSurvey username and metadata (including email addresses, transparency register, and organisation name). These responses were then clustered and further investigated for similarity across open text questions. 'Similarity' included any response that appeared identical or contained minor edits of the same response (open text). If identified, a cluster of potential campaign responses must meet a threshold of 5% of all responses to be considered a campaign with the ability to influence results. Where found, campaign responses were extracted and analysed separately from all other responses unless their findings were shown to be consistent with all other responses.

As shown in Figure A1-5, 11 groups containing similar answers were detected and labelled alphabetically. However, only one campaign, cluster G, contained enough responses to meet the 5% threshold. Campaign G responses to closed questions were assessed for influence on a question-by-question basis. However, they did not show any significant impact on the final analysis of closed questions; they were therefore deemed safe to remain in the final dataset. However, open-text responses from this campaign were identified as potentially influencing and were analysed separately.

Please note that the 'other campaign clusters' (non-Campaign G) may also have been identified and reported on separately in the discussion of open text questions; this is to ensure transparency regarding the frequency of issues discussed.

Methodology for the analysis of closed questions

The analysis has been undertaken using Microsoft Excel and includes questions 14, 15, and 16. Results for closed questions have been summarised with a chart representing results for all responses, a chart representing all responses split by stakeholder grouping (see above for grouping details), and a table of all responses split by respondent geographic location. All charts and tables contain an average (for Likert items) followed by the number of responses to each option (for example, average (n)). To provide transparency on the distribution of answers (averages alone do not display the extent of split attitudes within a question), the study team has provided an additional 'top-bottom two' table for each closed question. This table shows the distribution of stakeholder responses within each question, providing a percentage of answers in the top two categories (e.g. very satisfactory, satisfactory) and the bottom two categories (e.g. very unsatisfactory, unsatisfactory).

The online questionnaire relies on three types of Likert scale questions to gather stakeholders' views. Such questions were converted into quantitative form (see Table) to measure their average values. These averages are displayed as bar charts to give a clear and concise overview of all responses to the question. In each closed question, answers stating "I do not know" (and blank responses) have been excluded from the calculations of the averages. Please note that each question contained multiple sub-questions, all of which may have different degrees of participation (i.e. different number of blanks or "I do not know"). Subsequently, each question heading has been provided with the total number of respondents that provided an answer to any of the sub-questions (excluding "I do not know"); this is the total number of valid answers included in the analysis.

The following table outlines the types of Likert used in this consultation. The midpoint represents the neutral line for each Likert.

Table A1-1: Conversion of Likert scales into a quantitative format

(Question no.) Type of Likert scale	Scale mid-point (neutral)
(Q14.) 1 = very incomplete; 2 = moderately incomplete; 3 = neither complete nor incomplete; 4 = moderately complete; 5 = very complete.	3
(Q15.) 1 = very poorly; 2 = moderately poorly; 3 = neither well nor poorly; 4 = moderately well; 5 = very well	3
(Q16.) 1 = very unsatisfactory; 2 = moderately unsatisfactory; 3 = neither satisfactory nor unsatisfactory; 4 = moderately satisfactory; 5 = very satisfactory	3

Closed questions (14, 15, and 16) were also cross-examined with questions 5, 6, 7, 8, 12, 13, 21, and 22 of the OPC. However, little additional information was gathered. The summary of each question refers to cross-examination where relevant.

Methodology for the analysis of open text questions

Thematic analysis has been chosen as the approach to investigate the open text questions (14, 15, 16, 17a, 17b, 17c). Thematic analysis is a versatile approach, categorising text according to content, making the data intelligible, and enabling an analysis of how responses may differ, corroborate, or elaborate on findings that may not be explicit. The study team applied thematic analysis with support from the software NVivo.

The thematic analysis follows four steps.

Step 1: developing an analytical framework and identifying general content categories. The study team investigated responses for top-level/general content categories. This included identifying keywords from a word frequency test, the sub-setting of responses that include keywords, and an initial inspection of the topics relating to the keyword. From here, the study team logically deduced general topics for inclusion into the analytical framework. The purpose of this analytical framework is twofold; firstly, to ensure that the analysis is rooted in and builds upon core topics in the data. Secondly, to ensure that later coding and analysis of topics are contained, thus preventing inaccurate codes from being developed.

Step 2: initial coding of responses. The researcher manually read through all responses and assigned each piece of information to a corresponding category (code). In doing so, the study team can recall topic frequencies and isolate topics for further analysis. During the initial coding stage, the researcher can make notes of any key, interesting, or exceptional points raised in the data. Codes usually evolve as more information is analysed.

Step 3: revising and refining developed codes. The study team revised all codes for accuracy, refinement and analysed them in relation to other codes. Where there was correlation and intersection between coded content, the researcher identified a linking theme. All codes were investigated and rearranged into defining themes. The study team used the NVivo auto-coding function on the remaining dataset to ensure all (valid) responses were included for analysis. NVivo uses a machine-learning algorithm to automatically search and group all remaining text to the codes previously established. It does this by assessing the language and syntax developed in steps two and three and applying the rules to the wider dataset. All responses are then checked to ensure that they are coded. Manual coding is undertaken for any response unaffected by auto-coding. If auto-coding fails to identify the similarity of responses to any of the constructed nodes, it implies a new topic has been discovered and must be manually coded. Subsequently, all topics and responses are analysed.

Step 4: exploring themes. The final exploration of the data segmented and contrasted themes by stakeholder type. As displayed under each question heading in this report, the themes are displayed in a table of frequencies. This table provides the frequency of all top-level coded responses by theme and stakeholder type. All tables have heatmaps to ensure easy identification of key topics by stakeholder type. In addition to coding frequency tables, there is a narrative summary of the key themes discovered, outlining the most important themes, differentiating between stakeholder types, and demonstrating the varying ideas within the theme.

A1.1.2 OPC respondent profile

In total, 335 responses were received to the OPC. This section provides visual representations of the data received in the consultation after the cleaning phase was performed. As shown, the majority of respondents were on behalf of companies and business associations. Averages for all respondents (charts representing total averages) may not be representative of all stakeholder types; however, each question has been provided with a chart representing averages by stakeholder group; these charts present the information in an unbiased way.

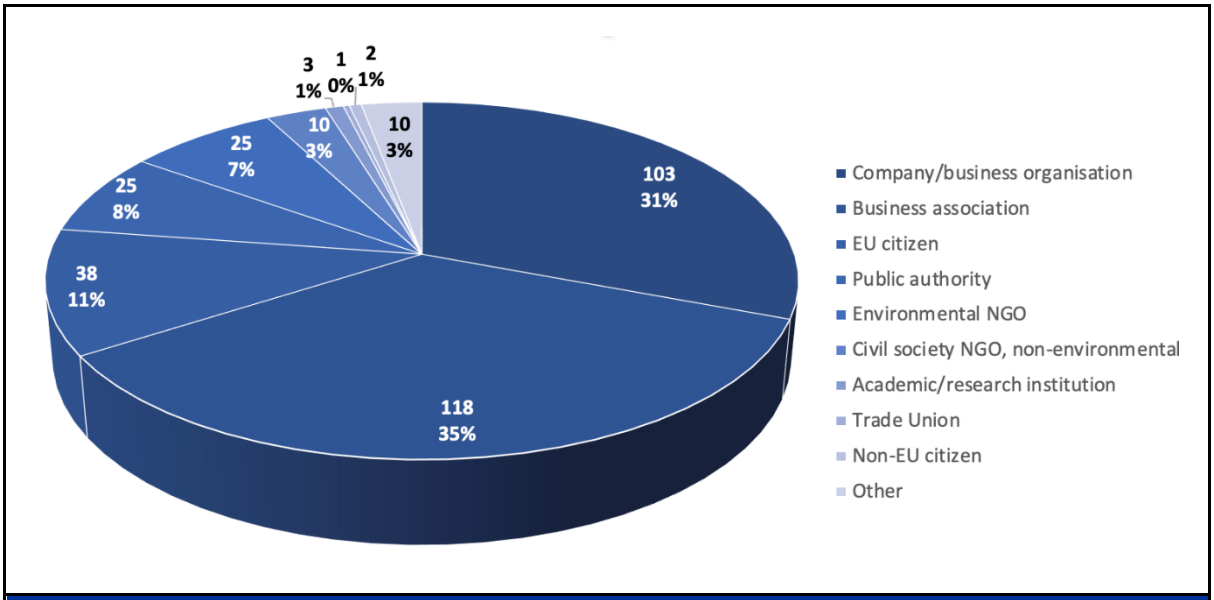


Figure A1-1: Respondent profiles by stakeholder type. N = 335. Values = % (n)

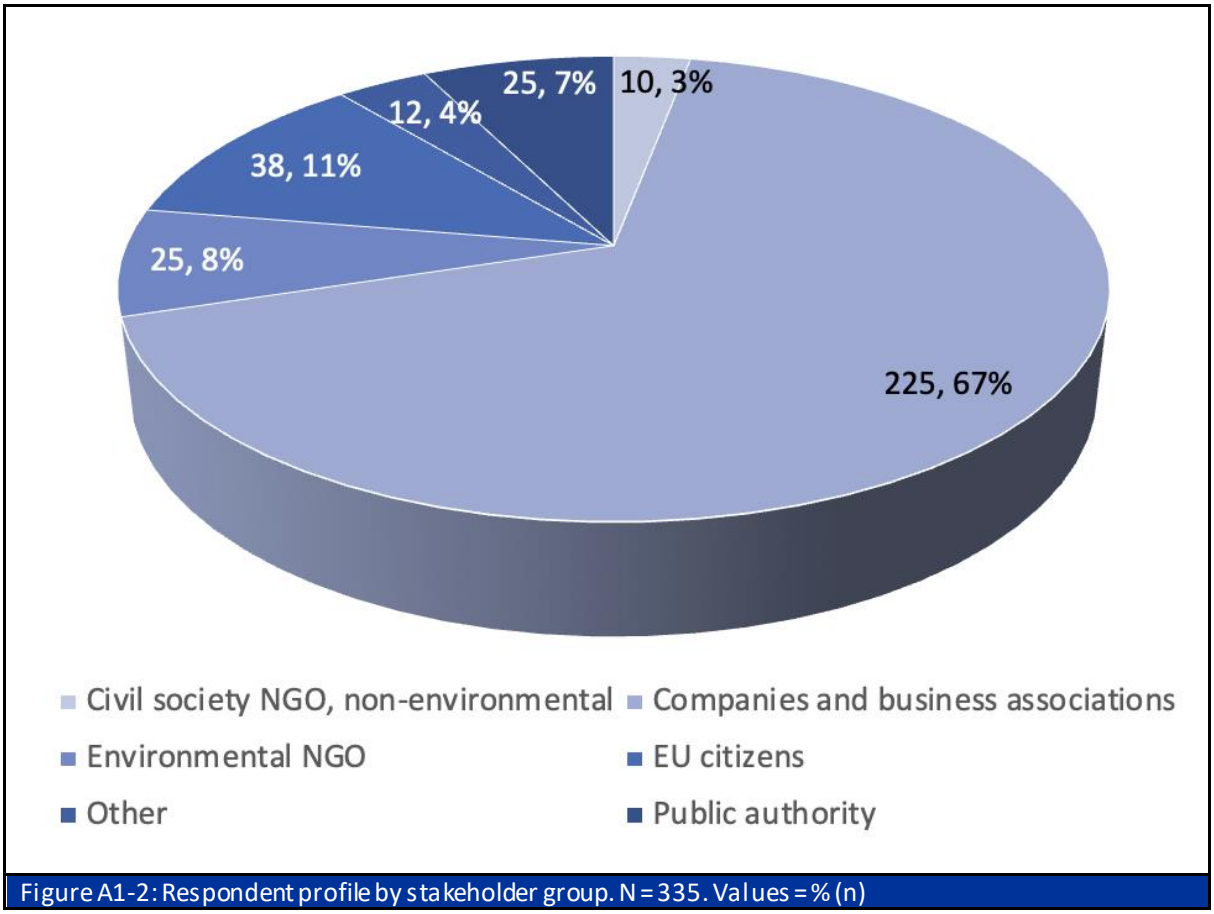


Figure A1-2: Respondent profile by stakeholder group. N = 335. Values = % (n)

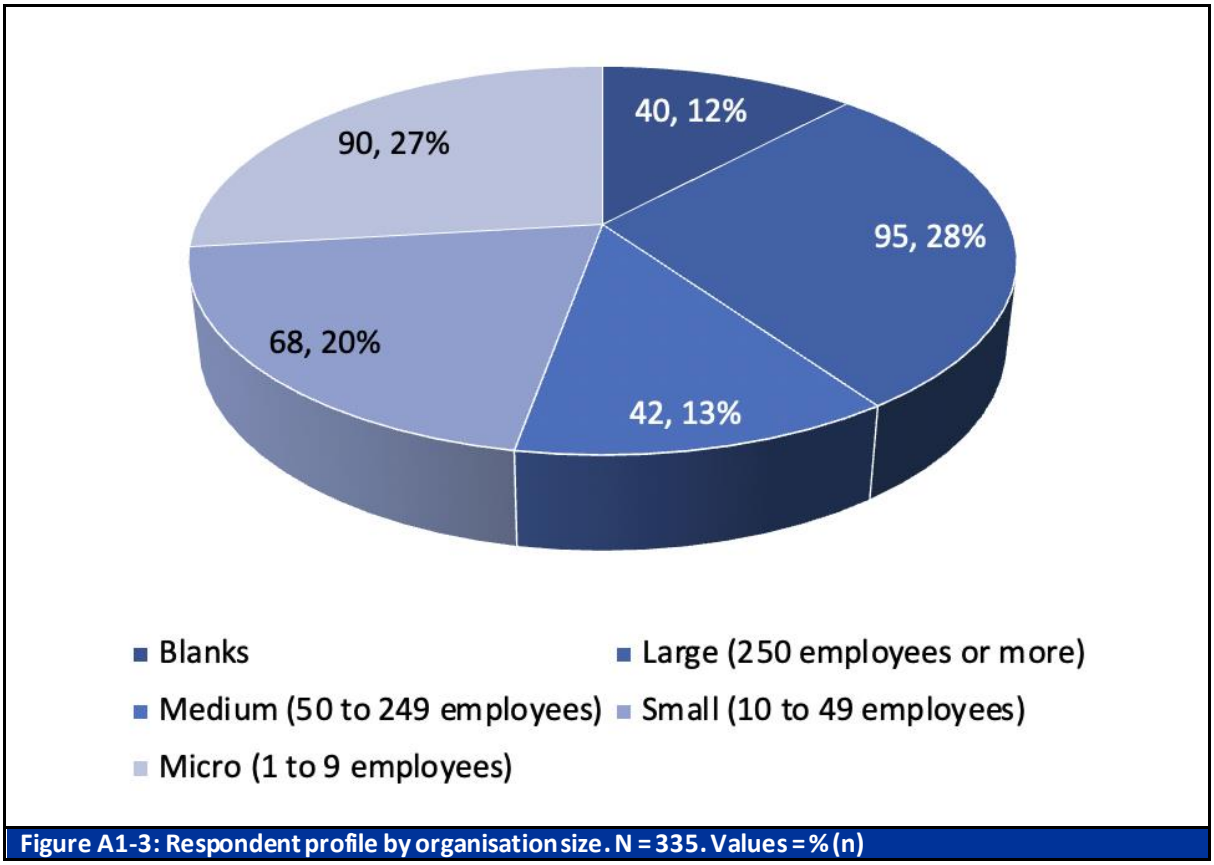


Figure A1-3: Respondent profile by organisation size. N = 335. Values = % (n)

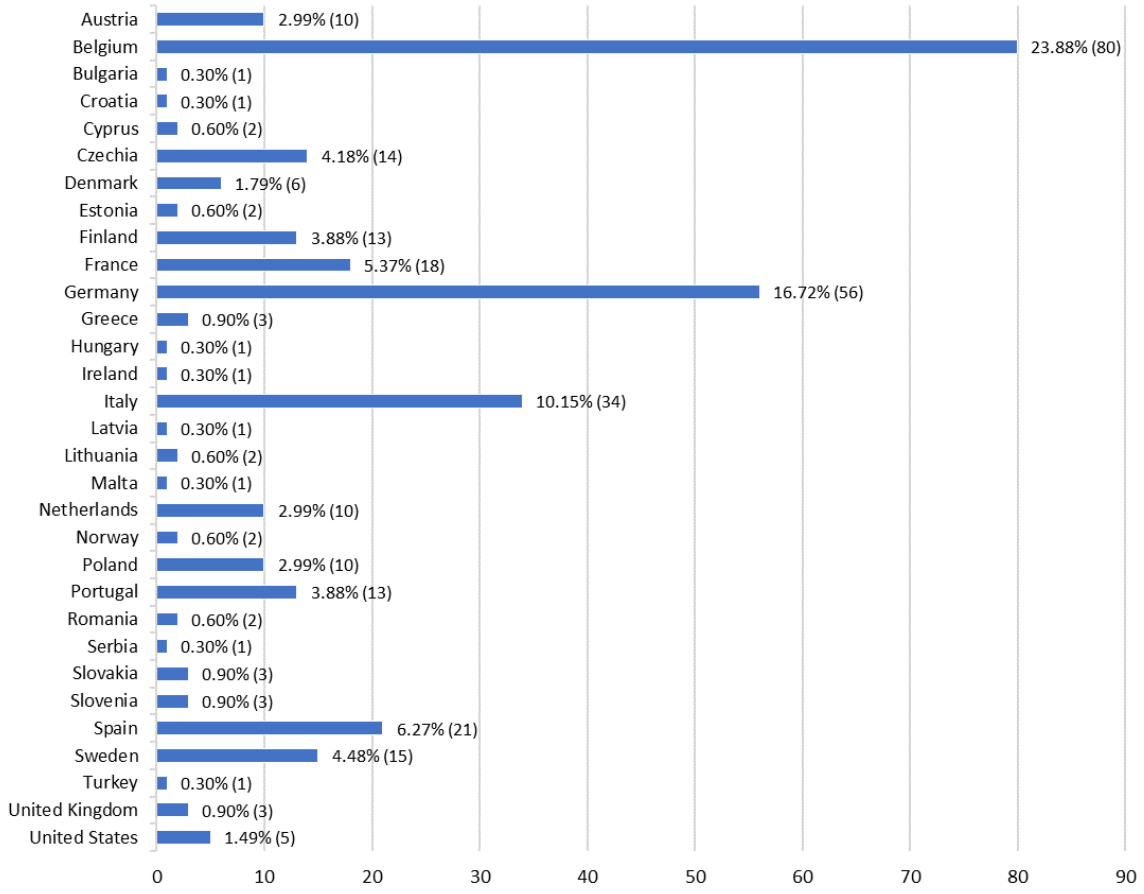


Figure A1-4: Respondent profile by geographic location. N = 335. Values = % (n)

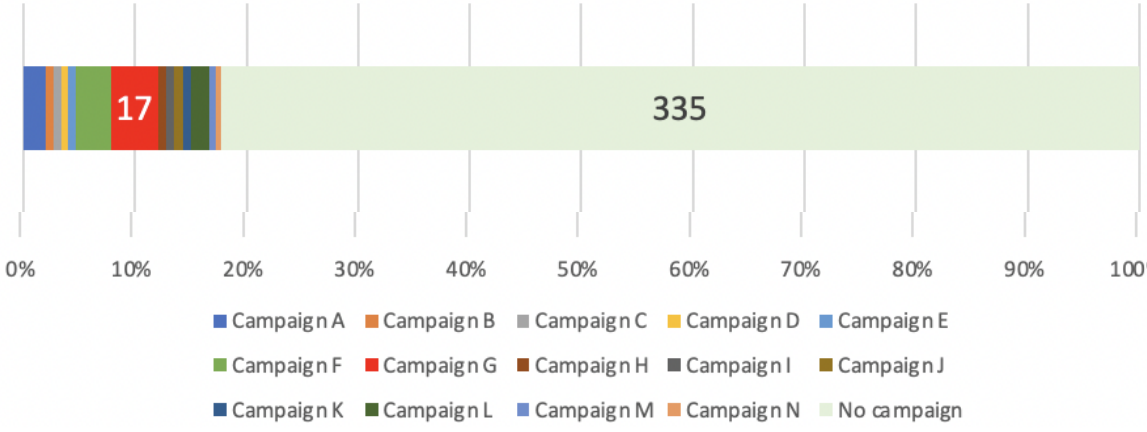


Figure A1-5: Respondent profile: Identified campaign clusters. N = 72. Values = % (n)

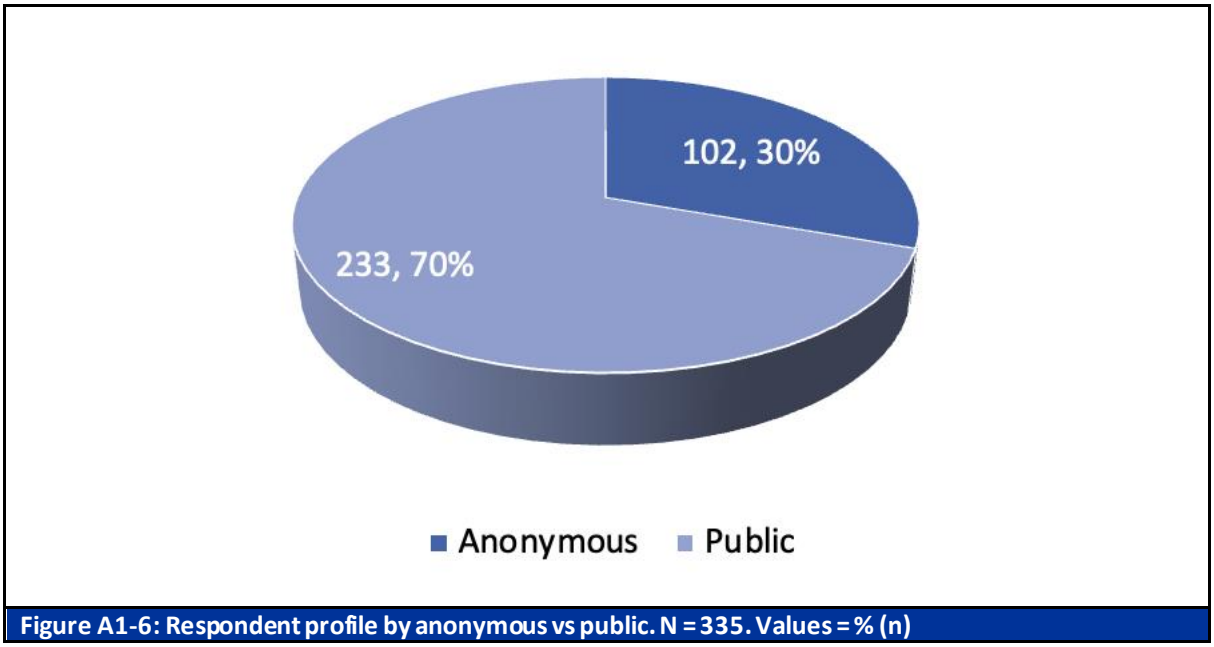


Figure A1-6: Respondent profile by anonymous vs public. N = 335. Values = % (n)

Profile of Campaign G

As outlined above, all responses were clustered for high levels of similarity in responses to open text questions. Where a high level is detected, the study team investigated respondent metadata for distinct features. The study team set a threshold of 5% of all responses for a similar group to be considered a campaign with influencing ability. Campaign G was the only group of responses that met this threshold, constituting 5.07% of all responses. Campaign G includes 17 respondents, including 11 business associations, five companies/business organisations, and one trade union. Responses were provided from across multiple EU Member states, including Austria, Belgium, Finland, France, Germany, Poland, Slovakia, Spain, and Sweden. Responses to closed questions were assessed on a case-by-case basis to determine their ability to influence results. Campaign G was left in the main dataset as answers to closed questions were not always consistent, and no significant variation in results occurring from their inclusion was detected.

As shown in the summary of responses below, Campaign G showed significant similarity in regard to some questions and differences in others. To ensure transparency of this campaign group, we have broadly summarised their responses below:

Question 14: How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agro-)industrial plants? Moderately to very complete for all options with the exception of option 14.7 diffuse releases to water which in general is considered 'incomplete'.

Question 15: How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work…? Moderately to very well for all options.

Question 16: Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro-)industrial sectors? Primarily 'I don't know' or very satisfactory.

Broadly summarised, Campaign G responses provided the following answers to open questions:

Question 17a: Are there any pollutants that should be removed from the E-PRTR? Campaign G respondents provided variations of the following quote:

"In order to avoid the reporting of pollutants which may not be relevant for the process of a specific sector, it would be necessary to consider a revision of the "Indicative sector-specific sub-list of air and water pollutants" in the E-PRTR Guidance."

Question 17b. Are there any pollutants that should be added to the E-PRTR? Campaign G respondents provided variations of the following two quotes:

"Pollutants addressed should be better reflecting the environmental issues specific to an activity and for this purpose should be better aligned on the sectoral BREFs."

"No additional pollutants should be considered. The current list is already exhaustive and covers a set of known impacts. The addition of pollutants to the E-PRTR will require an additional burden for operator reporting, competent authority collection, validation of data and IT system modifications. The scope of the E-PRTR needs to consider if it has to contain all pollutants and whether there are any overlaps or double-counting with other reporting entities (e.g. reporting to EU-ETS and reporting of F-Gases). The Seville process should be the leading instrument how to reassess and add additional pollutants to the E-PRTR. These discussions are highly relevant for industry, at the very least given that it will have to implement these new reporting obligations."

Question 17c. Are there existing E-PRTR pollutants, or their reporting thresholds, that should be amended? Please specify which. Campaign G respondents provided variations of the following two quotes:

"Pollutants addressed should be better reflecting the environmental issues specific to an activity and for this purpose should be better aligned on the sectoral BREFs".

"Lowering thresholds for particular groups of pollutants should be proposed after a robust impact assessment and technical feasibility as they will significantly increase the administrative burden for operators and regulators. Any changes will need to be notified well in advance."

A1.1.3 Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agro-)industrial plants? N = 276

Analysis of closed OPC responses

Figure A1-7 displays the average scores for all respondents. The overall result indicating that E-PRTR information quality on options 14.1 releases to air (an average of 3.94), 14.2 releases to water (3.86), 14.3 releases to soil (3.71), 14.4 transfers of waste (3.88), 14.5 transfers to waste-water treatment plants (3.72), and 14.9 production volume of the facility (3.67), is considered on average (by all respondents) to generally be positive. These responses approximate a score of 4.0, 'moderately complete'. In contrast, options 14.6 diffuse releases to air (3.33), 14.7 diffuse releases to water (3.33), and 14.8 releases of pollutants from accidents (3.55), display lower averages (between neither 'complete' nor 'incomplete', and 'moderately complete') indicating this information are considered to be less useful than the others. These responses are not less than 3.0, and the conclusion can be drawn that, on average, respondents do not perceive the information provided in the E-PRTR to be of bad quality in any of the areas mentioned.

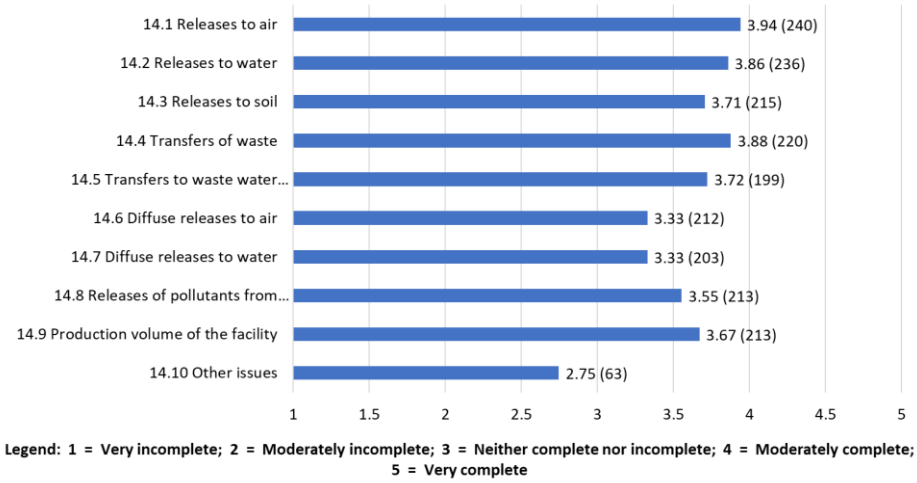


Figure A1-7: Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (age)industrial plants? All respondents. Values = average score (n)

However, Figure A1-8-8 shows that there are nuanced differences between stakeholder groups, and the above results may not be conclusive. Analysis of stakeholder groups shows a dichotomy between companies and business associations on the one hand and NGOs (both environmental and civil society) on the other hand. There is a clear trend amongst companies and business associations that all options are rated as 'moderately complete', whereas both environmental and civil society NGOs display a clear position on all question options, that the information presented in the E-PRTR is 'moderately' to 'very incomplete'.

Public authorities indicate a less consistent trend. For example, options 14.1, 14.2, 14.4, and 14.5 regarding releases to air and water and transfers of waste (including to wastewater treatment plants) show a weak level of support; averages between 'neither complete nor incomplete and moderately complete'. Although, on average public authorities perceive E-PRTR information on options 14.6, 14.7, 14.8, and 14.9 regarding diffuse releases to air and water, releases from accidents and information on production volume to be 'moderately incomplete'.

On average, EU citizens perceive information on options 14.1, 14.2, 14.3, 14.4, 14.8, and 14.9 regarding releases to air, water, soil, transfers of waste, releases from accidents, and production volumes, to be slightly higher than 'neither complete nor incomplete'. However, as shown in A2-5. EU citizens are consistently divided about options 14.3 (releases to soil), 14.4 (transfers of waste), 14.5 (transfers to wastewater treatment plants), 14.6 (diffuse releases to air), and 14.7 (diffuse releases to water). In addition to this, 38% of EU citizens felt neutral or did not know regarding option 14.8 (releases of pollutants from accidents).

Analysis of responses according to geographic location provides little reliable or additional information to the information above. Countries with a high/reliable number of respondents (Belgium and Germany) both show high levels of support for all options. Responses from other countries provide too few numbers to draw significance.

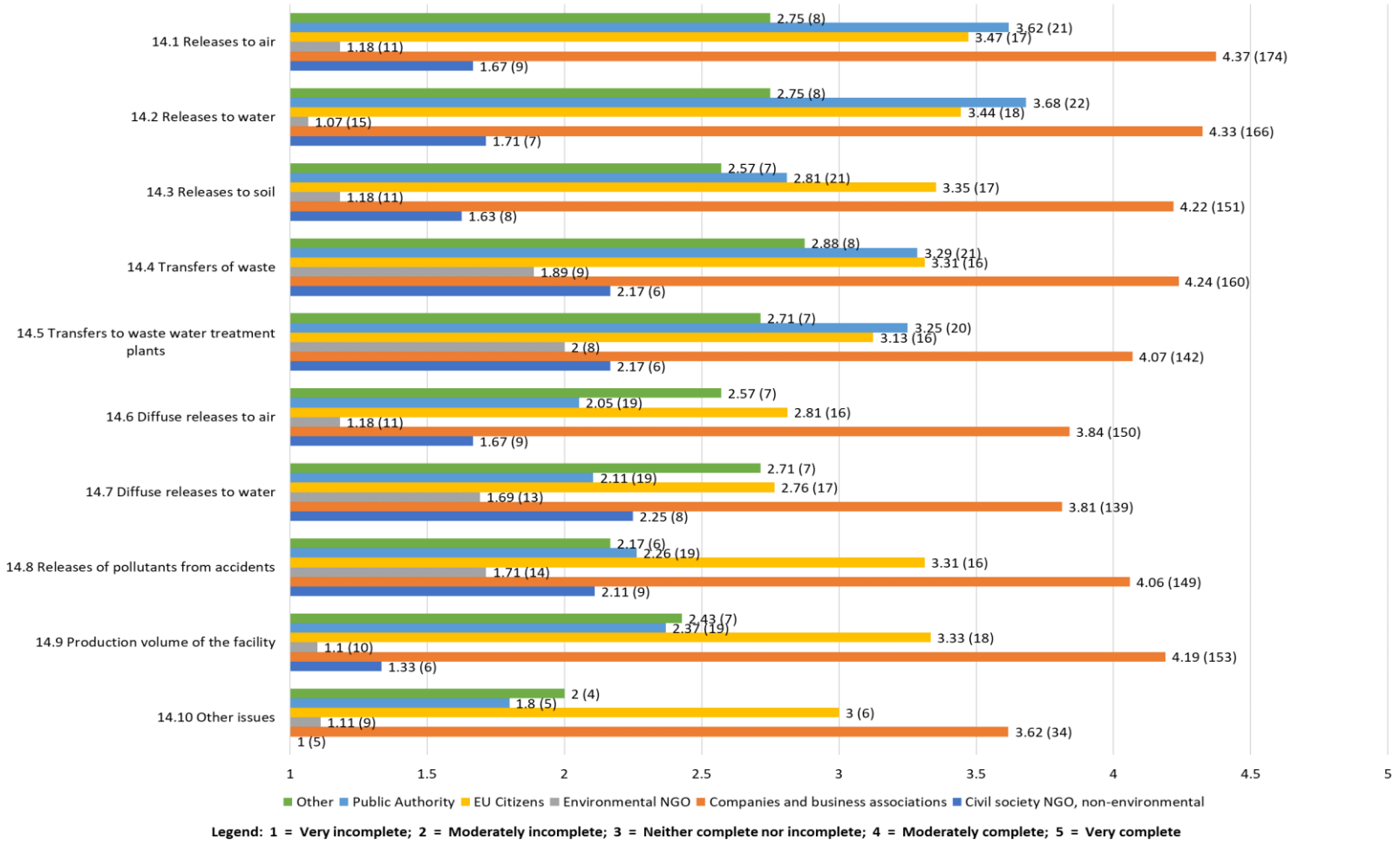


Figure A1-8: Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agri)industrial plants? By stakeholder groups. Values = average score (n)

Cross-examination of OPC questions show findings consistent with the conclusions above with no specific additional findings. For example, respondents who argue they do not have access to sufficient information on environmental impacts (Q 5.1) and the level of environmental impacts (Q5.2) also rate the quality of information (Q14) in lower regard. Equally, the opposite is true, i.e. those that consider they had sufficient access to information also positively regard the quality of information. Furthermore, those that disagree with question 6, regarding the importance of public access to information on granting and enforcing authorities (Q6.1), how the public can be involved with permit grants and decisions (Q6.2), how the public may appeal grant decisions (Q6.3), feel that all options under Q14 are moderately to very complete. In summary, respondents that feel Q6 is less important also feel that the information presented in E-PRTR (Q14) is complete.

Regarding question 7, respondents were asked whether they were able to find information on their places of interest (live, work, or study). Respondents that stated they were not able to find information on new or recent environmental permit applications (7.1), existing permits (7.2), compliance details (7.3), environmental monitoring data (7.4), reporting information on environmental management performance (7.5), information on Best Available Techniques (BAT) (7.6), and information on administrative/judicial review procedures and decisions (7.7), also stated that E-PRTR information queried in Q14 is of lower quality. Equally, the opposite is true; those with sufficient access to information also positively regard the quality of information.

Cross-examination with results from questions 8, 12, 13, 21 and 22 continue this trend. For example, respondents that believe the IED and its parallel legislation and guidance (Q8) sufficiently controls environmental impacts of installations also believe that E-PRTR information (Q14) is of suitable quality for all options questioned.

Campaign responses are consistent with the above findings and have not been analysed independently as their input does not skew the results.

Analysis of open text responses

In addition to the types of information listed in question 14, respondents were also asked to elaborate on 'other issues' present in the form of an open text response. A summary of the topics provided in answers to this question can be found in Figure A1-9. In total, 70 open text responses were provided. The investigation found eight which were omitted for not providing relevant information. In total, 62 open text responses were included in the analysis, which provided a total of 68 codes.

The most prominent topic raised in answers regards a lack of 'meaningfulness' of the data/information presented in the E-PRTR (13). This topic was spread across stakeholder groups showing that this opinion is not limited to one group with reasons behind this opinion varying but often with little clarifying information. Of these responses, five companies and business associations stated various issues: one respondent stated that industrial reporting/data is complete; however, the 'transfer' of data from E-PRTR across Member States is incomplete. Another goes further to say that "data on (diffuse) releases of pollutants to air/water are fairly complete [but] unreliable in some non-EU MS installations". This respondent also states that "*interpretation is impacted by reporting methodologies & thresholds. All sources to be considered, and the most important to be tackled*". These responses collectively point to respondents suggesting that E-PRTR information is less available in some countries than others due to different reporting criteria/methods and national legislation.

The other three companies and business associations (above) state that the E-PRTR does not report on actual production volumes and that annual production volumes of plants are not conclusive due to nuanced/individual contexts of use of materials specific to sectors. One respondent goes further to state that the "*accuracy or uncertainty of reported emissions (kg) would be worth to be somehow included*". Two public authorities continue this line of argument, stating that the environmental

performance of plants cannot be rated using E-PRTR information as it is missing contextual data. "*Environmental performance of plants cannot be rated at all using E-PRTR data as it is missing any contextual data. To enable/improve the role E-PRTR can play in rating environmental performance of industries, mandatory data on, e.g. actual production volume, energy/resource input would be helpful*". That is, the E-PRTR would benefit from being able to view information on actual production volumes and energy/resources inputs. Two further comments were provided by public authorities in this regard; one stating that the data provided in E-PRTR should be more comparable amongst one another, and the other stating that E-PRTR would benefit from including information on counter-polluting activities. This point was also supported by two 'other' stakeholders.

Nine respondents from companies and business associations (seven), public authorities (one), and environmental NGOs (one) provided the argument that the information presented in the E-PRTR does not account for sector complexity. Subsequently, a number of these respondents highlight the following as potential elements to include in revisions of the E-PRTR:

- Performance data against more "abstract aspects" such as circular economy, degradation of ecosystems etc.;
- The inclusion of information on pollutant emission sources such as agriculture, road transport, maritime activities, air traffic etc.; and
- Fuel types and quantity used, and type of installations.

Four respondents, including companies and business associations, public authorities, and EU citizens, suggest the need to reduce reporting thresholds for pollutants. The overarching perspective is that lower threshold values will increase the transparency of pollutants being reported and subsequently increase the quality of data included in the E-PRTR.

Two respondents, one from companies and business associations and one public authority, criticised the lack of comparability between the E-PRTR, Best Available Techniques – Associated Emission Levels (BAT-AEL) and Best Available Techniques Reference Documents (BREFs) and national legislation. In contrast to the above feedback, industry respondents (nine companies and business associations) make the case that company-specific data, which could be seen to affect competitiveness amongst businesses and conflict with confidentiality principles, should under no circumstances be published via the E-PRTR.

Five companies and business associations provide some indication that the EPRTR user interface requires some amendment. Recommendations include the ability for easy data correction when errors are made during reporting. Four respondents specifically highlight the importance of ensuring the data presented is current and relevant, noting that the most recent data is often several years old.

In total, 10 respondents (campaign A) commented that the E-PRTR database is fit for purpose, seven of which elaborated their point with the following quote. "*E-PRTR database is very complete, as comprehensive reporting requirements exist. It intends firstly to show actual and relevant emissions in absolute numbers for different years. The pollution reduction performance is also evaluated in the permit/BREF processes (installation/sector level)*." Eleven respondents, originating from Campaign cluster F, consisted of six environmental NGOs, three civil society NGOs, and two EU citizens. These respondents state that the current information provided by the E-PRTR "*fails to deliver on many objectives and EU reporting infrastructure is not fit for purpose*". In addition to this answer, Campaign F respondents also cite their submitted response to the inception impact assessment on the E-PRTR using the following elements:

- *"Improve comparability, coherence (streamlining of data flows & quality) with related environmental quality standards and legislation (e.g. IED, WFD and UWWTP, REACH, Seveso III, Mercury, EU ETS, EIA alternatives screening, circular economy action plan requirements, Air*

quality, Product reporting (Ecolabel), SCIP database), make it fit for tracking progress towards achieving the SDG objectives";

- *"Enable direct and real-time data reporting of any pollutant subject to measurements directly by the operator to centralised EU database (PRTR/IED registry)";*
- *"Amend in parallel the existing COM reporting rules to harmonise reporting on IED Art 14 compliance report relevant information and applicable permit conditions applicable, enable user-friendly (electronic) extract of that information."*

Main arguments	Civil society NGO, non-environmental	Companies and business associations	Environmental NGO	EU Citizens	Other	Public Authority	Grand Total
E-PRTR data types are not always meaningful (mixed reasons)	2	5			2	4	13
E-PRTR data fails to deliver its objectives (Campaign F)	3		6	2			11
E-PRTR is fit for purpose (mainly campaign A)		10					10
E-PRTR does not account for sector complexity		7	1			1	9
Industry is opposed to the E-PRTR publishing sensitive data		9					9
Omitted responses		5	1	1		1	8
Need for improved data reporting interface		5					5
Reporting thresholds should be reviewed for increased relevance		1		1		2	4
E-PRTR data gaps render BAT-AELs unreliable		1				1	2
Lack of consistent reporting thresholds between IED and EPRTR		2					2
E-PRTR should publish a list of industrial plants that represent major threat	1						1
E-PRTR should not be linked to BREF		1					1
E-PRTR should only cover direct emissions to the environment		1					1
Grand Total	**6**	**47**	**8**	**4**	**2**	**9**	**76**

Figure A1-9: Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agri)industrial plants? Other issues – please specify if other aspects of environmental performance should be covered by the E-PRTR. Thematic analysis by stakeholder group

	14.1 Releases to air		14.2 Releases to water		14.3 Releases to soil		14.4 Transfers of waste		14.5 Transfers to waste water treatment plants	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	11.1%	88.9%	14.3%	85.7%	12.5%	87.5%	0.0%	83.3%	0.0%	83.3%
Companies and business associations	87.9%	5.7%	84.9%	7.2%	78.1%	9.3%	76.9%	10.0%	76.8%	8.5%
Environmental NGO	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
EU Citizens	64.7%	23.5%	61.1%	27.8%	58.8%	29.4%	56.3%	37.5%	56.3%	37.5%
Public Authority	61.9%	23.8%	72.7%	18.2%	33.3%	42.9%	52.4%	33.3%	50.0%	30.0%
Other	50.0%	50.0%	50.0%	50.0%	42.9%	57.1%	50.0%	50.0%	42.9%	57.1%
Grand Total	75.8%	17.5%	73.3%	19.5%	64.7%	23.3%	66.8%	21.4%	65.8%	20.6%

	14.6 Diffuse releases to air		14.7 Diffuse releases to water		14.8 Releases of pollutants from accidents		14.9 Production volume of the facility		14.10 Other issues	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	11.1%	88.9%	12.5%	87.5%	0.0%	88.9%	0.0%	83.3%	0.0%	100.0%
Companies and business associations	72.0%	14.0%	69.8%	15.8%	71.1%	14.1%	69.9%	8.5%	55.9%	26.5%
Environmental NGO	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
EU Citizens	43.8%	37.5%	35.3%	41.2%	43.8%	18.8%	61.1%	27.8%	50.0%	33.3%
Public Authority	21.1%	68.4%	21.1%	63.2%	21.1%	63.2%	36.8%	57.9%	20.0%	80.0%
Other	42.9%	57.1%	42.9%	57.1%	16.7%	83.3%	28.6%	57.1%	25.0%	75.0%
Grand Total	58.0%	29.7%	54.7%	32.0%	55.4%	29.6%	59.6%	22.5%	38.1%	50.8%

Figure A1-10: Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agri)industrial plants? Top-bottom distribution. Values = average score (n)

Table A1-2: Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agri)industrial plants? By geographic location. Values = average score (n)										
	14.1 Releases to air	14.2 Releases to water	14.3 Releases to soil	14.4 Transfers of waste	14.5 Transfers to waste- water treatment plants	14.6 Diffuse releases to air	14.7 Diffuse releases to water	14.8 Releases of pollutants from accidents	14.9 Production volume of the facility	14.10 Other issues
Austria	3.75 (8)	4.13 (8)	4.14 (7)	3.75 (8)	3.43 (7)	3 (8)	2.83 (6)	3.5 (8)	3.56 (9)	1.5 (2)
Belgium	3.93 (54)	3.76 (54)	3.68 (50)	3.78 (49)	3.76 (42)	3.37 (51)	3.38 (47)	3.63 (49)	3.89 (46)	2.69 (13)
Bulgaria	1 (1)	1 (1)	1 (1)	2 (1)	2 (1)	1 (1)	2 (1)	2 (1)	1 (1)	1 (1)
Croatia	4 (1)	4 (1)	2 (1)	2 (1)	2 (1)	1 (1)	1 (1)	1 (1)	3 (1)	0 (0)
Cyprus	5 (2)	4 (2)	3 (2)	5 (2)	4 (2)	1 (2)	1 (2)	2 (2)	2.5 (2)	0 (0)
Czechia	3.4 (10)	3.67 (9)	3.4 (10)	3.8 (10)	3.9 (10)	3.56 (9)	3.6 (10)	3.63 (8)	3 (8)	1 (4)
Denmark	2.5 (4)	3 (3)	3 (3)	3 (3)	3 (3)	3 (3)	3 (3)	3 (3)	3 (3)	2 (1)
Estonia	5 (1)	5 (1)	3 (1)	1 (1)	5 (1)	1 (1)	5 (1)	3 (1)	0 (0)	1 (1)
Finland	4.13 (8)	3.86 (7)	4.2 (5)	4.2 (5)	3.5 (4)	4 (4)	4 (4)	3.6 (5)	3.5 (6)	4.5 (2)
France	4.27 (11)	3.75 (12)	3.6 (10)	3.7 (10)	2.75 (8)	2.33 (9)	2.25 (8)	3 (7)	3.27 (11)	5 (1)
Germany	4.4 (50)	4.23 (52)	4.26 (47)	4.29 (48)	4.17 (47)	4.09 (46)	3.89 (46)	4.1 (48)	4.27 (48)	4.09 (11)
Greece	2.5 (2)	2.5 (2)	2 (1)	3 (2)	3 (2)	2 (2)	2.5 (2)	2 (2)	1 (2)	1 (1)
Hungary	5 (1)	5 (1)	5 (1)	5 (1)	4 (1)	4 (1)	4 (1)	5 (1)	5 (1)	1 (1)
Ireland	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	0 (0)
Italy	3.55 (22)	3.52 (21)	3.48 (21)	3.52 (21)	3.53 (19)	3.33 (21)	3.45 (20)	3 (19)	3.55 (22)	3.17 (6)
Latvia	5 (1)	5 (1)	3 (1)	5 (1)	5 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Lithuania	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Malta	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	1 (1)	1 (1)	5 (1)	4 (1)	0 (0)
Netherlands	2.83 (6)	2.67 (6)	2.2 (5)	3.5 (4)	2.67 (3)	2.5 (6)	2.2 (5)	2.14 (7)	2.5 (4)	1.67 (3)
Norway	4.5 (2)	4.5 (2)	4 (1)	4 (1)	4 (2)	4 (2)	4 (2)	4.5 (2)	4 (1)	4 (1)
Poland	4.25 (8)	4 (6)	4 (4)	4.25 (8)	4.25 (4)	3.5 (4)	3.75 (4)	3.83 (6)	3 (4)	1 (1)
Portugal	4.13 (8)	4.13 (8)	3.5 (8)	4.13 (8)	3.25 (8)	3 (8)	2.88 (8)	4 (8)	3.38 (8)	2 (2)
Romania	2.5 (2)	2.5 (2)	2.5 (2)	3 (2)	3 (2)	2.5 (2)	3 (2)	1.5 (2)	1 (2)	2.5 (2)
Serbia	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Slovakia	4 (2)	4 (2)	3 (1)	4 (2)	3 (1)	3 (1)	3 (1)	2 (1)	3.5 (2)	0 (0)
Slovenia	2.5 (2)	2.5 (2)	2.5 (2)	3 (2)	3 (2)	2.5 (2)	2 (1)	3 (2)	2.5 (2)	2 (2)
Spain	4.29 (14)	4.36 (14)	4 (13)	4.08 (13)	4 (13)	3.21 (14)	3.07 (14)	3.5 (14)	4 (14)	4.25 (4)
Sweden	4.08 (13)	4.17 (12)	3.82 (11)	4 (10)	3.67 (9)	3.57 (7)	3.57 (7)	4.22 (9)	4.11 (9)	2.5 (2)
Turkey	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)

Table A1-2: Q14. How would you rate the information provided in the E-PRTR regarding the environmental performance of large (agri)industrial plants? By geographic location. Values = average score (n)										
	14.1 Releases to air	**14.2 Releases to water**	**14.3 Releases to soil**	**14.4 Transfers of waste**	**14.5 Transfers to waste- water treatment plants**	**14.6 Diffuse releases to air**	**14.7 Diffuse releases to water**	**14.8 Releases of pollutants from accidents**	**14.9 Production volume of the facility**	**14.10 Other issues**
United Kingdom	1 (2)	1 (2)	1 (2)	1.5 (2)	2 (1)	1 (2)	1.5 (2)	1.5 (2)	1 (2)	1 (1)
United States	5 (2)	5 (2)	5 (2)	5 (2)	4 (2)	4 (2)	4 (2)	5 (2)	5 (2)	0 (0)
Notes: Average values of 10 or more respondents have been colour-coded for table readability. *Legend: Dark red = 0-0.99; Light red = 1-1.99; Orange = 2-2.99; Light green = 3-3.99; Dark green = 4-5*										

A1.1.4 Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? N = 270

Analysis of closed OPC responses

As shown in Figure A1-11, the averages for all respondents exceed 4.0 (moderately well), except for those citing "other". In summary, the findings of all respondents indicate that the E-PRTR search capability is not an issue for stakeholders; that is, it is working at least moderately well for all of the options listed in the question.

Analysis of responses by stakeholder group shows consistency with Figure A1-12 amongst all stakeholder groups, with the exception of EU citizens and, to some extent, environmental NGOs. Regarding EU citizens, Figure A1-13 shows an average of 3.12 for option 15.1 search by facility name. Similarly, option 15.2 search by industrial activity (3.41), option 15.3 search by pollutant (3.29), and option 15.4 search by geographical location (3.5) all display lower averages than other stakeholder groups. Whilst these averages are lower, they do not indicate a negative experience with the E-PRTR search tool.

Variation from the norm in A2-11 for environmental NGOs only exists for option 15.1 search by facility name. However, the difference is marginal and only slightly implies a shift towards a neutral stance (3.31).

Table A2-3 displays the average scores by geographic location. However, no significant variation from the above was found during the analysis. Further to this, Figure A1-14 displays the distribution of responses; no significant split within stakeholder groups were present in responses to this question.

Cross-examination of question 15 against questions' 5, 6, 7, 8, 12, 13, 21, and 22 all received findings consistent with Figure A1-11 and Figure A1-12. In the event where respondents are positive in their answers to 5, 6, 7, 8, 12, 13, 21, and 22, averages for question 15 are consistently scoring 'moderately well'. In the event where responses to questions 5, 6, 7, 8, 12, 13, 21, and 22 are negative, averages to options 15.2, 15.3, and 15.4 remain unchanged. However, in cross-examinations option 15.1, the search by facility name function consistently lowers to an approximate average of 3 (neither well nor poorly). This suggests that the search by industrial activity, pollutant and geographical location is effectively working, however where respondents feel that they have not been able to get access to data mentioned in other questions, the search by facility name tool is less relevant.

Campaign responses are consistent with the above findings and have not been analysed independently as their input does not skew the results.

Analysis of open text responses

In addition to the types of search capability listed in this question, respondents were also asked to elaborate on 'other issues' present in the form of an open text response. A summary of the topics given in answers to this question can be found in Figure A1-13. In total, 45 open text responses were provided. The investigation found three which were omitted for not providing relevant information. In total, 42 open text responses were included in the analysis, which provided a total of 50 codes.

In total, eight respondents (including companies and business associations, civil society NGOs, EU citizens, public authorities and 'other') state that the E-PRTR search function is difficult to use. Specifically, three of these respondents feel it is too difficult to find recent information. One respondent has stated that they are not able to search by facility name or pollutant; another has stated that they cannot compare emissions; further information on the scope of comparability is not provided. Two respondents highlight that data interpretation by non-technical/expert audiences may

result in obfuscation or misinterpretation as there are no contextual data attached to pieces of information.

Seven respondents state (five companies and business associations and two environmental NGOs) that the search capability is hindered by the absence of data on impacts to the local environment and public health. That is, the system would benefit from the inclusion of this data and benchmarking (i.e. facility name, location, date etc.) for search and comparison features. No further information was provided.

A further six respondents (one company and business association, three environmental NGOs, two public authorities) indicate that the E-PRTR should provide data on a wider sectoral scope. However, these respondents typically refer to the absence of information in the database rather than the capability/usability of the search tool. Three of these respondents (environmental NGOs) specifically state that the E-PRTR does "not contain information on substances which are relevant for the production of drinking water from surface water". One goes further to request information on a country, river-basin district, type of waste, and transfer abroad.

Two respondents state that "the industrial activity classifications and reporting thresholds do not match the IED industrial activities" but do not provide any further statements as to the impacts of this.

Responses from campaign cluster F (three civil society NGOs, four environmental NGOs, two EU citizens) provided a generic statement that essential information which end users are looking for is missing and that the system does not allow for benchmarking, compliance promotions, comparing ambition level in permits, as well as impacts on health and the environment. Responses also state that a search capability by 'mother companies' would be beneficial.

However, Campaign cluster A responses (six) argue that the E-PRTR tool is fit for purpose and is user-friendly for respective experts. Highlighted separately in Figure A1-13, a further seven respondents (non-campaign A), primarily companies and business associations, concur that the search capability is fit for purpose and easy to use.

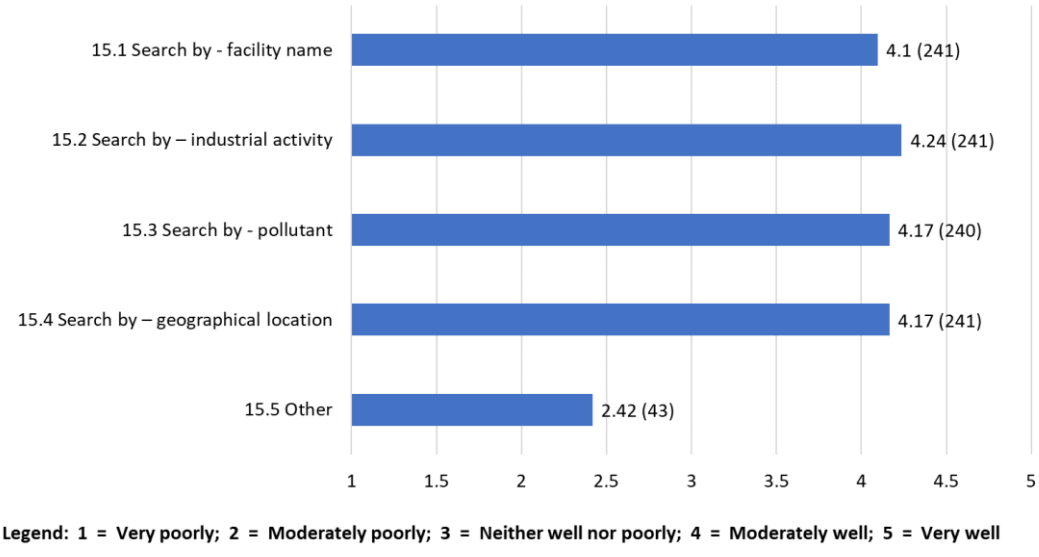


Figure A1-11: Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work…? All respondents. Values = average score (n).

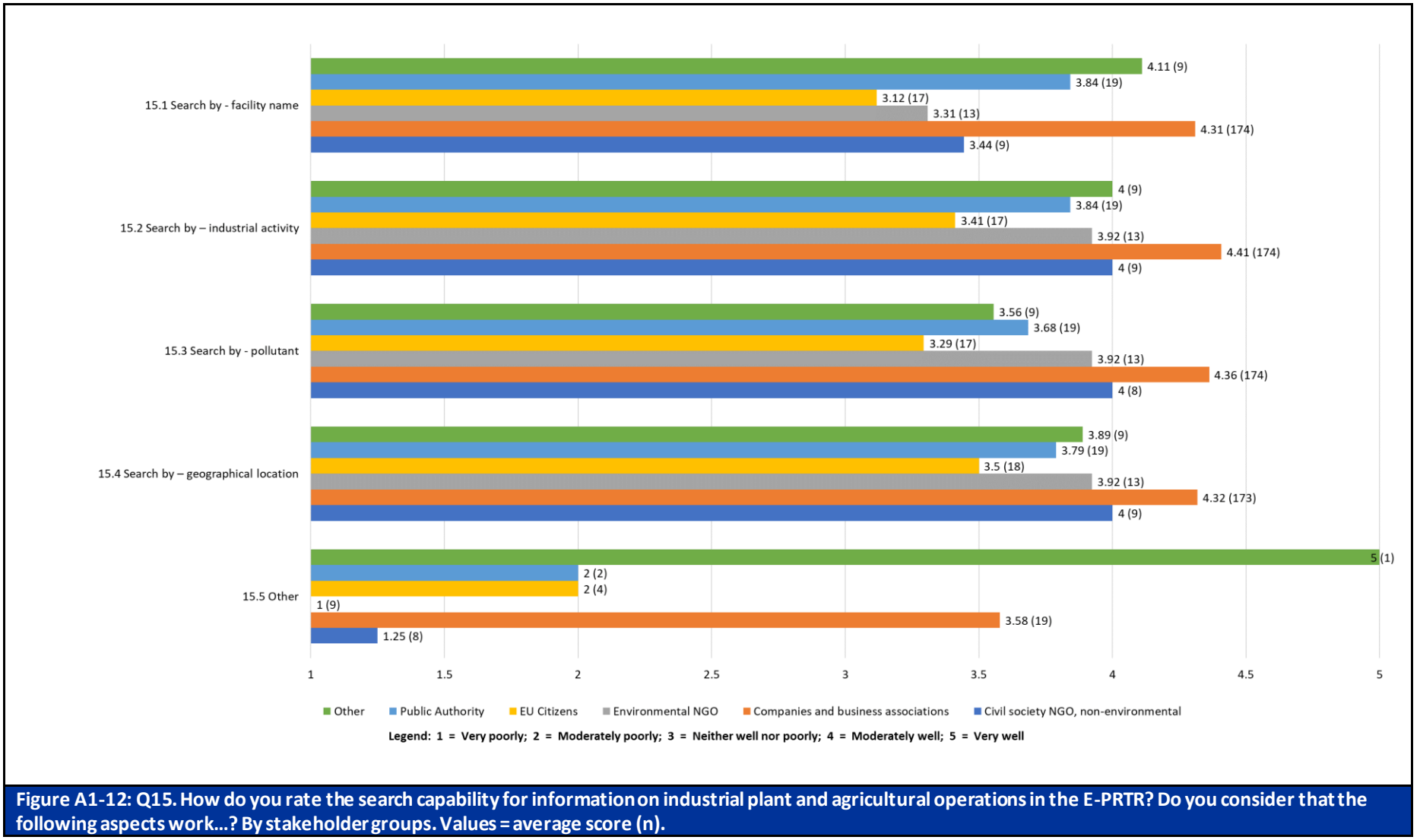


Figure A1-12: Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work...? By stakeholder groups. Values = average score (n).

Main arguments	Civil society NGO, non-environmental	Companies and business associations	Environmental NGO	EU Citizens	Other	Public Authority	Grand Total
E-PRTR search capability is too limited (Campaign F)	3		4	2			9
The EPRTR tool is difficult to use	2	3		1	1	1	8
E-PRTR search capability is fit for purpose regarding industrial plant and agricultural operations		5			1	1	7
E-PRTR needs further data on types of impact	5		2				7
E-PRTR search capability is fit for purpose (Campaign A)		6					6
E-PRTR should contain information of a wider sectoral scope		1	3			2	6
E-PRTR users may benefit from having access to permit compliance data	4		1				5
Omitted responses		2				1	3
Inconsistency with IED classifications and reporting thresholds		2					2
Grand Total	**14**	**19**	**10**	**3**	**2**	**5**	**53**

Figure A1-13: Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work...? If other public information areas, please specify which. Thematic analysis by stakeholder group

	15.1 Search by - facility name		15.2 Search by – industrial activity		15.3 Search by - pollutant		15.4 Search by – geographical location		15.5 Other	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	44.4%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	0.0%	87.5%
Companies and business associations	89.1%	4.6%	92.5%	3.4%	90.8%	3.4%	88.4%	3.5%	55.0%	25.0%
Environmental NGO	30.8%	0.0%	92.3%	0.0%	92.3%	0.0%	92.3%	0.0%	0.0%	100.0%
EU Citizens	41.2%	29.4%	64.7%	23.5%	64.7%	23.5%	61.1%	16.7%	0.0%	50.0%
Public Authority	78.9%	10.5%	73.7%	10.5%	63.2%	15.8%	68.4%	15.8%	0.0%	50.0%
Other	77.8%	11.1%	77.8%	11.1%	66.7%	33.3%	77.8%	22.2%	100.0%	0.0%
Grand Total	79.7%	6.6%	88.8%	5.4%	86.3%	6.7%	85.1%	5.8%	27.3%	54.5%

Figure A1-14: Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work...? Top-bottom distribution. Top-bottom distribution. Values = average score (n).

Table A1-3: Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work…? By geographic location. Values = average score (n).					
Labels	**15.1 Search by - facility name**	**15.2 Search by – industrial activity**	**15.3 Search by - pollutant**	**15.4 Search by – geographical location**	**15.5 Other**
Austria	3.88 (8)	4.38 (8)	4 (8)	4.38 (8)	3.43 (7)
Belgium	4.07 (56)	4.25 (56)	4.21 (56)	4.11 (56)	3.76 (42)
Bulgaria	3 (1)	4 (1)	4 (1)	4 (1)	2 (1)
Croatia	4 (1)	4 (1)	4 (1)	3 (1)	2 (1)
Cyprus	4.5 (2)	4.5 (2)	4.5 (2)	4.5 (2)	4 (2)
Czechia	4.2 (10)	4.6 (10)	4.6 (10)	4.6 (10)	3.9 (10)
Denmark	1 (2)	1.5 (2)	2.5 (2)	2 (2)	3 (3)
Estonia	3 (1)	3 (1)	3 (1)	3 (1)	5 (1)
Finland	4.22 (9)	4.22 (9)	4.22 (9)	4 (9)	3.5 (4)
France	3.92 (13)	4.08 (13)	4.08 (13)	3.92 (13)	2.75 (8)
Germany	4.37 (52)	4.4 (52)	4.33 (52)	4.29 (52)	4.17 (47)
Greece	3.5 (2)	4 (2)	4 (2)	4.5 (2)	3 (2)
Hungary	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)
Ireland	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Italy	4.14 (22)	4.14 (22)	3.95 (22)	4.13 (23)	3.53 (19)
Latvia	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Lithuania	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Malta	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Netherlands	3.83 (6)	4 (6)	4 (6)	4 (6)	2.67 (3)
Norway	4.5 (2)	4.5 (2)	4.5 (2)	4.5 (2)	4 (2)
Poland	4.13 (8)	4.25 (8)	4.25 (8)	4.25 (8)	4.25 (4)
Portugal	3.75 (8)	3.75 (8)	3.5 (8)	3.75 (8)	3.25 (8)
Romania	3.5 (2)	4 (2)	3.5 (2)	4.5 (2)	3 (2)
Serbia	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Slovakia	4.5 (2)	4 (2)	4.5 (2)	4 (2)	3 (1)
Slovenia	3.5 (2)	4 (2)	4 (2)	4 (2)	3 (2)
Spain	3.87 (15)	4.13 (15)	4 (14)	4.07 (14)	4 (13)
Sweden	4.44 (9)	4.56 (9)	4.33 (9)	4.56 (9)	3.67 (9)
Turkey	5 (1)	5 (1)	5 (1)	5 (1)	1 (1)
United Kingdom	3 (1)	4 (1)	4 (1)	4 (1)	2 (1)
United States	4 (2)	4 (2)	4 (2)	4 (2)	4 (2)

Table A1-3: Q15. How do you rate the search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work…? By geographic location. Values = average score (n).					
Labels	**15.1 Search by - facility name**	**15.2 Search by – industrial activity**	**15.3 Search by - pollutant**	**15.4 Search by – geographical location**	**15.5 Other**
Notes: Average values of 10 or more respondents have been colour-coded for table readability. *Legend: Dark red = 0-0.99; Light red = 1-1.99; Orange = 2-2.99; Light green = 3-3.99; Dark green = 4-5*					

A1.1.5 Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro-)industrial sectors? N = 264

Analysis of closed OPC responses

As shown below in Figure A1-15, responses regarding the usefulness of environmental performance data somewhat vary according to each sector. In general, total averages indicate that positions are between 'neither satisfactory nor unsatisfactory' and 'moderately satisfactory'. However, the investigation of Figure A1-16 and Figure A1-18 shows some significant variance within stakeholder groups averages at the top-bottom levels. For this reason, Figure A1-16 (stakeholder groups part 1), Figure A1-17 (stakeholder groups part 2), and Figure A1-18 (top-bottom distribution) provide a clearer representation of results.

Companies and business associations do not show significant top-bottom variance. For this stakeholder group, the majority of sector data has an average of greater than 'moderately satisfactory' (4.0). The only deviation from this are options 16.15 – intensive rearing of poultry or pigs (3.75), 16.17 – intensive rearing of cattle (3.8), and 16.18 – intensive aquaculture (fish or shellfish farming) (3.82). Subsequently, companies and business associations perceive environmental performance data referring to livestock farming as having a lower 'usefulness' than other sectors. However, averages for these sectors are still perceived to be approximately 'moderately satisfactory'.

Civil society NGOs do not show significant top-bottom variance. In contrast to the above, this stakeholder group provides significantly lower averages for all sectors, noting that no average exceeds 1.5. Therefore, all environmental performance data (all sectors) must be considered unsatisfactory for this stakeholder group. Environmental NGOs do not show significant top-bottom variance. This stakeholder group concurs with the findings of civil society NGOs to a greater extreme. Noting that the highest average is 1.07, all environmental performance data must be considered unsatisfactory for this stakeholder group.

Top-bottom differentiation within stakeholder groups is found amongst EU citizens, public authorities, and other stakeholders. This suggests that responses within each group may be polarised. EU citizen responses are generally neutral regarding all sector-specific information with the exception of option 16.17 regarding intensive rearing of cattle (2.38), 16.18 intensive aquaculture (fish or shellfish farming) (2.5), and 16.19 regarding mining industries (2.62). Public authority responses are generally neutral regarding sector-specific information (showing averages in proximity to 3.0). However, option 15.1 regarding energy (large combustion plants) (3.74), 16.5 mineral industry processes- cement, lime, magnesium oxide (3.69), 16.6 mineral industry – glass, glass fibre, ceramics (3.54) all show averages of greater than 3.5.

Table displays the average scores by geographic location. However, no significant variation from the above was found during the analysis. Further to this, Figure A1-15 displays the distribution of responses, no significant split within stakeholder groups were present in responses to this question.

When cross-examined against questions 5, 6, 7, 8, 12, 13, 21, and 22, answers to this question did not provide any further insights.

Campaign responses are consistent with the above findings and have not been analysed independently as their input does not skew the results.

Analysis of open text responses

In addition to the types of sectors listed in this question, respondents were also asked to elaborate on 'other issues' present in the form of an open text response. A summary of the topics given in answers to this question can be found in Figure A1-18. In total, 55 open text responses were provided. The investigation found 13 which were omitted for not providing relevant information. In total, 42 open text responses were included in the analysis, which provided a total of 42 codes. Responses to this question rarely commented on sector-specific data and primarily repeated areas of issue/improvement from previous questions.

Of all responses to this question (only seven) all companies and business associations state that sector specific data is complete and useful. These responses do not provide any further information to clarify their position.

In contrast, analysis of responses found a series of recurring issues with sector-specific information. The most prominent is that the E-PRTR should be revised to include additional categories/data types for some sectors. These responses are provided by companies and business associations (four), public authorities (three), environmental NGOs (one), and other stakeholder types (one). A summary of the comments regarding improvements for sector-specific data follows:

- Include sources of pollutant releases such as agriculture, road transport, maritime activities, air traffic etc.;
- The removal of thresholds for certain pollutants to improve data transparency;
- The inclusion of data on end-of-life vehicles (ELV) across Member States;
- The inclusion of the ability to compare facilities based on their environmental impacts (including conformity with the EU BAT-C);
- Continuous emissions monitoring systems (CEMS) data (current data is too old);
- Presenting information from large facilities by process unit where possible;
- Information on the performance standard that sectors should be delivering;
- Livestock farming activities;
- "*The subtraction of background load when calculating pollutants release in wastewater should be confirmed in the revision to ensure that it is applied homogenously*";
- "*Include additional activities (e.g. intensive cattle-rearing + number of places, UWWTP>15.000 pe, MCP>20MW) + mixed activities, transfer abroad for non-hazardous waste, lower thresholds for hazardous/non-hazardous waste + 7.e, consider deleting not reported activities (1.e), differentiate waste using EWCatalogue*";

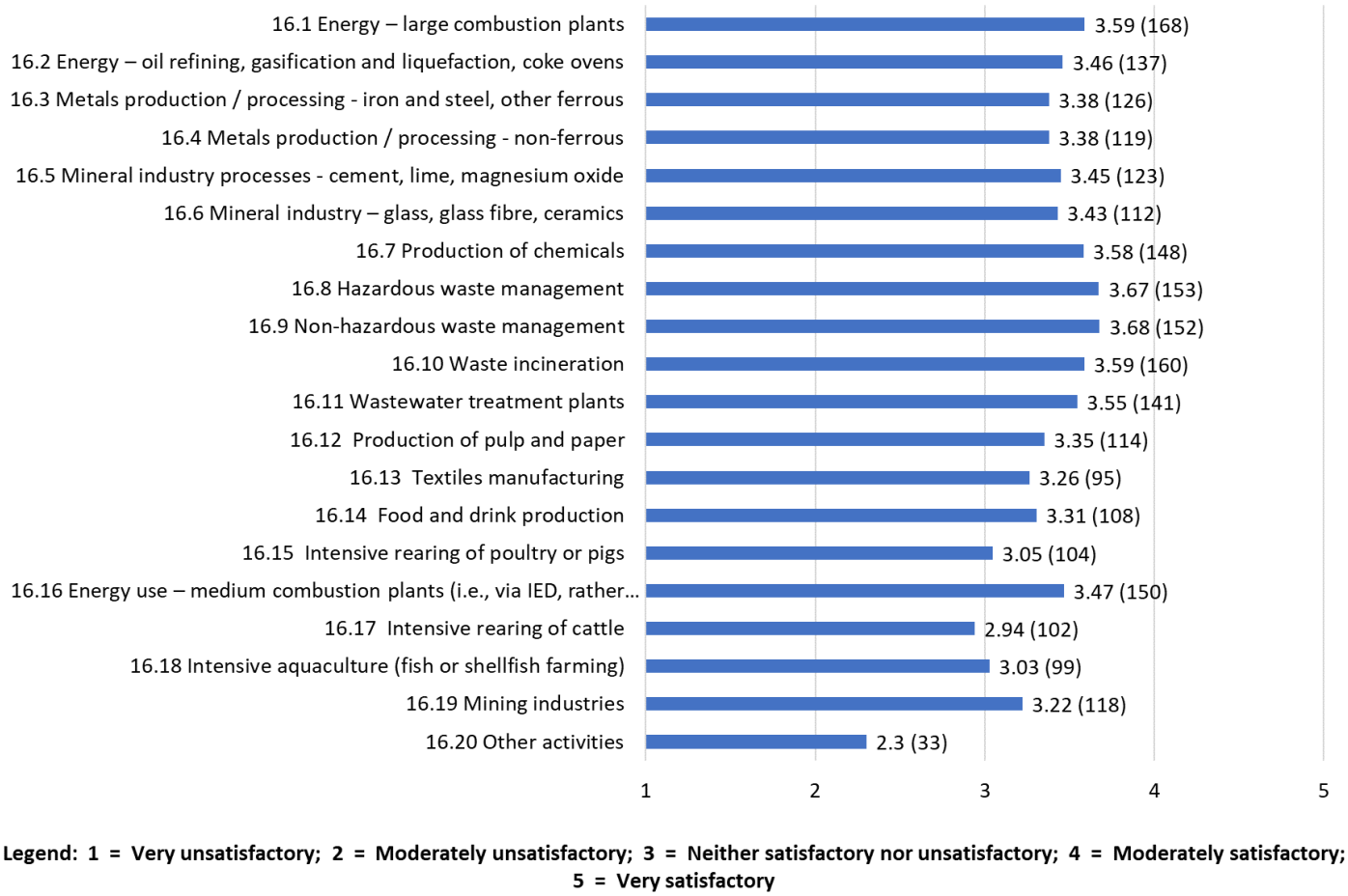
A further six respondents (five companies and business associations, one 'other') discuss the disadvantage of E-PRTR data only measuring in absolute emissions and the lack of contextualising data for processes/facilities, making a direct comparison on actual environmental effects in sectors not possible.

Four respondents (one company and business association, one public authority, and two civil society NGOs) note the current state of sector information is not useable but do not provide further explanation.

Three companies and business associations state, "*We do not consider that the inclusion of the aggregates industry in the scope of the E-PRTR will enhance the environmental performance, as our sector already needs to make environmental impact assessments, [as well as adhere to] the Extractive Waste Directive or the Water Framework Directive, among others*."

Campaign cluster F provided ten responses to this question; all cite that the current sector-specific information on environmental performances is not useful in the current format provided. However, this campaign goes further and provides a link to its feedback on the inception impact assessment of E-PRTR from which the following extract was taken:

"Reporting should change focus in terms of intended outputs/service provided by a given industrial activity, i.e. ratio 'environmental impact of industrial activity' versus 'public good/service provided' E.g. the PRTR is focussing on a subset of energy production type (thermal power plants >50MWth) whilst the intended output of the energy sector is to provide energy. There are various ways of producing energy; therefore, reporting should also be expressed as a load of pollutant / kWh net output (electric, heat or mechanical energy) and complemented by other environmental impacts such as water and resource consumption. The following activities should be subject to different reporting metrics because of most global relevance: energy production and conservation, water quality and supply, protein production, resource management, the substitution of chemicals of concern. Other activities should be added such as "soil remediation activities and biodiversity protection measures", "sustainable transportation of goods", and "Industrial solutions for improved air quality". All activities listed in any of the Multilateral Environmental Agreements (MEA) should be included so as to streamline existing reporting obligations and mutually improve synergies in order to allow comparison and matching of industrial activity sectors. The entries should be classified according to agreed international Standard Industrial Classification (ISIC) code lists. The Long Reporting Sector List should be used as a minimum with possible matching with the NACE classification system. For coverage of facilities/units/installation level, it should be broken down to the smallest (disaggregated) source level ("installation" definition used in the Industrial Emissions Directive-IED). Obsolete activities should be removed, e.g. asbestos production, reporting on-site remediation/decontamination activities, as well as tracking of waste treatment activities and related implementation of pollution prevention/pays and liability provisions improved. Environmental footprint information relating to outputs (products) need to be addressed as ('diffuse' emissions). Only the Norwegian PRTR is pro-actively publishing production output and diffuse emissions from the product in a centralised database in Europe. A possible approach, in the absence of real monitoring data, could be to apply Emission Release Factors. Resource consumption (water, materials, resources) use and fate of chemicals of concern and embedded GHG footprint needs to be included and re-allocated to the producing industrial activity as part of its life cycle impacts."



Legend: 1 = Very unsatisfactory; 2 = Moderately unsatisfactory; 3 = Neither satisfactory nor unsatisfactory; 4 = Moderately satisfactory; 5 = Very satisfactory

Figure A1-15: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? All respondents. Values = average score (n)

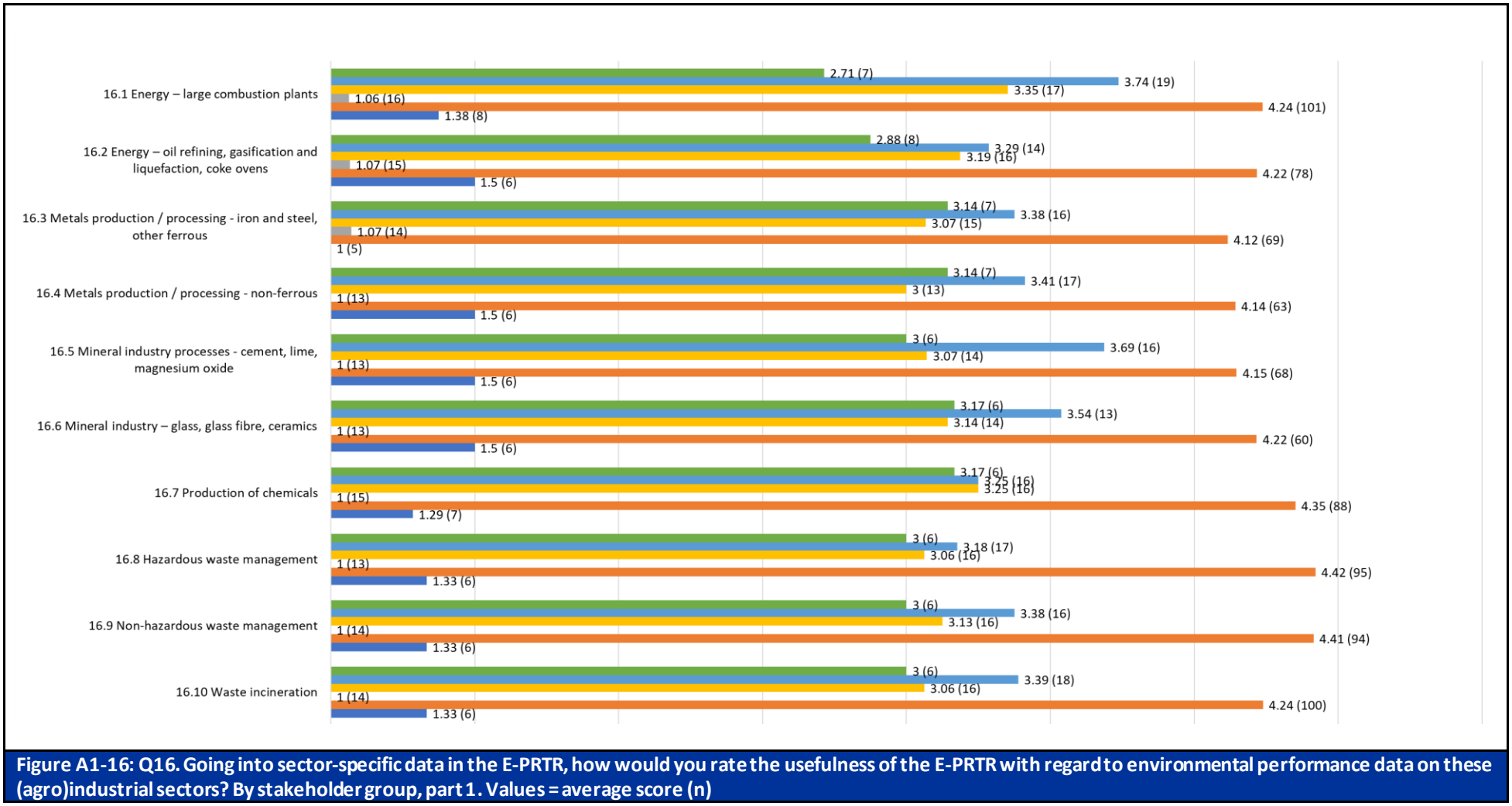


Figure A1-16: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? By stakeholder group, part 1. Values = average score (n)

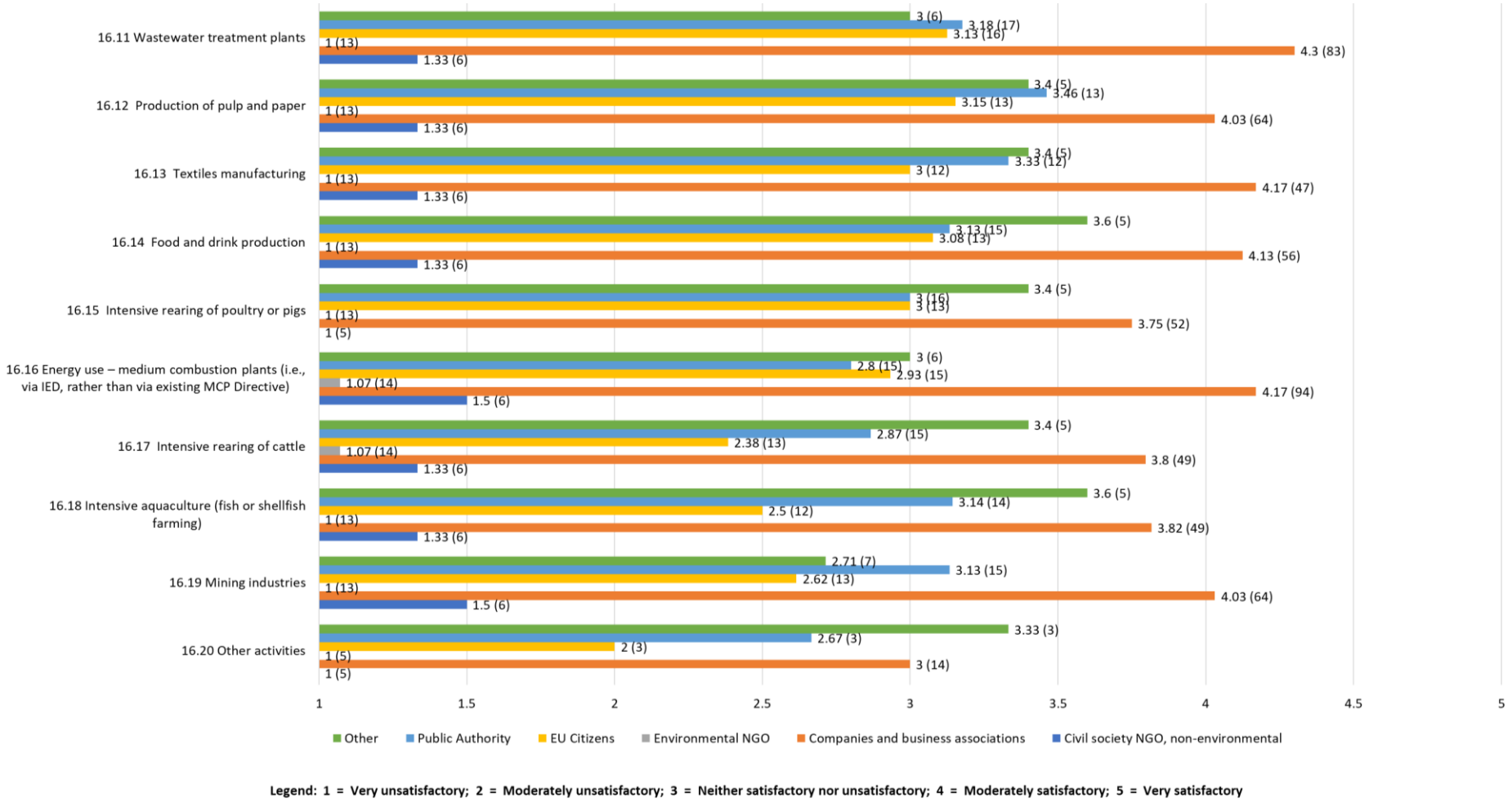


Figure A1-17: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? By stakeholder group, part 2. Values = average score (n)

Main arguments	Civil society NGO, non-environmental	Companies and business associations	Environmental NGO	EU Citizens	Other	Public Authority	Grand Total
Omitted response		13					13
Information provided is not useful (Campaign F)	3		5	2			10
E-PRTR requires further categories of sector data		3	1		1	3	8
Sector specific information is complete and useful		7					7
E-PRTR does not measure environmental performance beyond absolute performance		5			1		6
E-PRTR data is not useful	2	1				1	4
The inclusion of the aggregates industry into E-PRTR would not enhance environmental performance		3					3
E-PRTR data is too old		3					3
E-PRTR should allow for easy mistake correction in data reporting		1					1
Grand Total	**5**	**36**	**6**	**2**	**2**	**4**	**55**

Figure A1-18: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? If other activities, please specify which. Thematic analysis by stakeholder group

	16.1 Energy – large combustion plants		16.2 Energy – oil refining, gasification and liquefaction, coke ovens		16.3 Metals production / processing - iron and steel, other ferrous		16.4 Metals production / processing - non-ferrous		16.5 Mineral industry processes - cement, lime, magnesium oxide	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	12.5%	87.5%	16.7%	83.3%	0.0%	100.0%	16.7%	83.3%	16.7%	83.3%
Companies and business associations	82.2%	11.9%	83.3%	6.4%	79.7%	10.1%	77.8%	11.1%	76.5%	10.3%
Environmental NGO	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
EU Citizens	58.8%	23.5%	50.0%	25.0%	46.7%	26.7%	46.2%	30.8%	50.0%	28.6%
Public Authority	68.4%	15.8%	50.0%	21.4%	62.5%	18.8%	64.7%	17.6%	68.8%	12.5%
Other	42.9%	57.1%	50.0%	50.0%	57.1%	42.9%	57.1%	42.9%	50.0%	50.0%
Grand Total	65.5%	27.4%	62.0%	26.3%	60.3%	28.6%	59.7%	29.4%	60.2%	27.6%

	16.6 Mineral industry – glass, glass fibre, ceramics		16.7 Production of chemicals		16.8 Hazardous waste management		16.9 Non-hazardous waste management		16.10 Waste incineration	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	16.7%	83.3%	0.0%	85.7%	0.0%	83.3%	0.0%	83.3%	0.0%	83.3%
Companies and business associations	83.3%	6.7%	86.4%	8.0%	89.5%	5.3%	89.4%	5.3%	84.0%	11.0%
Environmental NGO	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
EU Citizens	57.1%	28.6%	50.0%	25.0%	43.8%	31.3%	43.8%	31.3%	43.8%	31.3%
Public Authority	61.5%	15.4%	56.3%	25.0%	52.9%	35.3%	56.3%	25.0%	55.6%	27.8%
Other	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Grand Total	62.5%	27.7%	64.9%	26.4%	68.0%	24.2%	67.8%	23.7%	65.0%	26.9%

	16.11 Wastewater treatment plants		16.12 Production of pulp and paper		16.13 Textiles manufacturing		16.14 Food and drink production		16.15 Intensive rearing of poultry or pigs	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	0.0%	83.3%	0.0%	83.3%	0.0%	83.3%	0.0%	83.3%	0.0%	100.0%
Companies and business associations	85.5%	9.6%	75.0%	14.1%	76.6%	8.5%	71.4%	7.1%	61.5%	25.0%
Environmental NGO	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
EU Citizens	43.8%	25.0%	53.8%	30.8%	50.0%	33.3%	53.8%	30.8%	53.8%	30.8%
Public Authority	52.9%	29.4%	53.8%	15.4%	58.3%	16.7%	46.7%	26.7%	37.5%	31.3%
Other	50.0%	50.0%	60.0%	40.0%	60.0%	40.0%	60.0%	20.0%	60.0%	40.0%
Grand Total	63.8%	27.0%	57.0%	30.7%	54.7%	31.6%	52.8%	28.7%	46.2%	40.4%

	16.16 Energy use – medium combustion plants (i.e., via IED, rather than via existing MCP Directive)		16.17 Intensive rearing of cattle		16.18 Intensive aquaculture (fish or shellfish farming)		16.19 Mining industries		16.20 Other activities	
Stakeholder type	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**	**Top-2**	**Bottom-2**
Civil society NGO, non-environmental	16.7%	83.3%	0.0%	83.3%	0.0%	83.3%	16.7%	83.3%	0.0%	100.0%
Companies and business associations	45.7%	4.3%	61.2%	18.4%	61.2%	18.4%	73.4%	17.2%	35.7%	42.9%
Environmental NGO	0.0%	92.9%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%
EU Citizens	46.7%	26.7%	30.8%	53.8%	33.3%	50.0%	30.8%	38.5%	33.3%	66.7%
Public Authority	46.7%	13.3%	33.3%	33.3%	50.0%	28.6%	46.7%	20.0%	33.3%	33.3%
Other	50.0%	33.3%	60.0%	40.0%	60.0%	20.0%	42.9%	57.1%	66.7%	33.3%
Grand Total	40.7%	20.0%	41.2%	41.2%	44.4%	38.4%	52.5%	34.7%	27.3%	60.6%

Figure A1-19: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? Top-bottom distribution. Values = average score (n)

Table A1-4: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? By geographic location, part 1. Values = average score (n)

Labels	16.1 Energy – large combustion plants	16.2 Energy – oil refining, gasification and liquefaction, coke ovens	16.3 Metals production / processing - iron and steel, other ferrous	16.4 Metals production / processing - non-ferrous	16.5 Mineral industry processes - cement, lime, magnesium oxide	16.6 Mineral industry – glass, glass fibre, ceramics	16.7 Production of chemicals	16.8 Hazardous waste management	16.9 Non-hazardous waste management	16.10 Waste incineration
Austria	4 (2)	1.4 (10)	4.5 (2)	4.5 (2)	4.33 (3)	5 (2)	4 (5)	4.67 (3)	4.67 (3)	4.67 (3)
Belgium	3.42 (26)	0.94 (80)	3.38 (16)	3.53 (17)	3.56 (16)	3.47 (15)	3.43 (23)	3.94 (18)	3.74 (19)	3.59 (22)
Bulgaria	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
Croatia	4 (1)	3 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	2 (1)	3 (1)	3 (1)
Cyprus	5 (2)	2 (2)	0 (0)	4 (1)	4.5 (2)	0 (0)	0 (0)	4.5 (2)	4.5 (2)	4.5 (2)
Czechia	3.3 (10)	3 (14)	3 (8)	3.11 (9)	3 (9)	3 (9)	3 (9)	3 (9)	3 (9)	3.3 (10)
Denmark	1.5 (2)	0.75 (6)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)
Estonia	4 (1)	4 (2)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)
Finland	3 (7)	1.38 (13)	2.67 (3)	2.67 (3)	4.5 (2)	4 (1)	3.25 (4)	4.5 (4)	4.5 (4)	3.43 (7)
France	3.44 (9)	1.71 (18)	3.5 (8)	3.43 (7)	3.57 (7)	3.33 (6)	3.57 (7)	3.57 (7)	3.33 (6)	3.63 (8)
Germany	4.27 (44)	3.32 (56)	4.11 (37)	4.11 (36)	4.11 (35)	4.14 (36)	4.33 (42)	4.26 (46)	4.3 (46)	4.14 (43)
Greece	1.33 (3)	1 (3)	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)
Hungary	5 (1)	5 (1)	0 (0)	0 (0)	0 (0)	0 (0)	5 (1)	5 (1)	5 (1)	5 (1)
Ireland	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Italy	3.2 (20)	2.67 (34)	2.94 (16)	2.87 (15)	2.94 (17)	3.07 (15)	3 (17)	3 (17)	3 (17)	2.88 (16)
Latvia	5 (1)	0 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Lithuania	0 (0)	0 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Malta	5 (1)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5 (1)	5 (1)	5 (1)
Netherlands	2.83 (6)	2.13 (10)	2.4 (5)	2.5 (4)	2.5 (4)	2.5 (4)	3 (5)	2.6 (5)	2.6 (5)	2.6 (5)
Norway	5 (1)	4.5 (2)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)	5 (1)
Poland	3.5 (4)	1.29 (10)	3 (3)	1 (1)	1 (1)	1 (1)	1 (1)	2.5 (2)	2.5 (2)	2 (3)
Portugal	4.17 (6)	4.29 (13)	3.25 (4)	3.25 (4)	3.75 (4)	3.8 (5)	4 (7)	3.67 (6)	3.67 (6)	4 (6)
Romania	2.5 (2)	2.5 (2)	2.5 (2)	2.5 (2)	2.5 (2)	1 (1)	1.5 (2)	1 (2)	1 (1)	1 (2)
Serbia	0 (0)	0 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Slovakia	4 (1)	4 (3)	4 (2)	0 (0)	0 (0)	0 (0)	0 (0)	4 (1)	4 (1)	0 (0)
Slovenia	2.5 (2)	2 (3)	2.5 (2)	2.5 (2)	2.5 (2)	2.5 (2)	2.5 (2)	2 (2)	1.5 (2)	2.5 (2)

Table A1-4: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? By geographic location, part 1. Values = average score (n)

Labels	16.1 Energy – large combustion plants	16.2 Energy – oil refining, gasification and liquefaction, coke ovens	16.3 Metals production / processing - iron and steel, other ferrous	16.4 Metals production / processing - non-ferrous	16.5 Mineral industry processes - cement, lime, magnesium oxide	16.6 Mineral industry – glass, glass fibre, ceramics	16.7 Production of chemicals	16.8 Hazardous waste management	16.9 Non-hazardous waste management	16.10 Waste incineration
Spain	3.86 (7)	2.38 (21)	3.6 (5)	3.5 (4)	3.5 (8)	3.5 (4)	4 (8)	4.09 (11)	4.1 (10)	4.09 (11)
Sweden	4 (6)	1.2 (15)	3 (3)	2.5 (2)	1 (1)	1 (1)	3 (3)	3.25 (4)	3.6 (5)	3.83 (6)
Turkey	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
United Kingdom	1 (1)	0.5 (3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
United States	0 (0)	0 (5)	0 (0)	0 (0)	0 (0)	0 (0)	5 (2)	5 (2)	5 (2)	5 (2)

Notes: Average values of 10 or more respondents have been colour-coded for table readability.
Legend: Dark red = 0-0.99; Light red = 1-1.99; Orange = 2-2.99; Light green = 3-3.99; Dark green = 4-5

Table A1-5: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? By geographic location, part 2. Values = average score (n)

Labels	16.11 Waste water treatment plants	16.12 Production of pulp and paper	16.13 Textiles manufacturing	16.14 Food and drink production	16.15 Intensive rearing of poultry or pigs	16.16 Energy use – medium combustion plants (i.e., via IED, rather than via existing MCP Directive)	16.17 Intensive rearing of cattle	16.18 Intensive aquaculture (fish or shellfish farming)	16.19 Mining industries	16.20 Other activities
Austria	4.5 (2)	4.33 (3)	2 (2)	4.5 (2)	1 (1)	4.33 (3)	1 (1)	1 (1)	3.67 (3)	0 (0)
Belgium	3.75 (16)	3.23 (13)	4 (8)	3.44 (16)	2.92 (13)	3.59 (22)	2.73 (11)	2.78 (9)	3.44 (18)	1.6 (5)
Bulgaria	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
Croatia	3 (1)	4 (1)	1 (1)	4 (1)	2 (1)	3 (1)	2 (1)	1 (1)	4 (1)	0 (0)
Cyprus	4 (2)	0 (0)	0 (0)	0 (0)	4.5 (2)	4 (2)	4 (2)	4.5 (2)	4 (2)	0 (0)
Czechia	3 (9)	3 (9)	3 (9)	2.71 (7)	2.57 (7)	3.3 (10)	2.57 (7)	2.57 (7)	3 (9)	1 (3)
Denmark	1.5 (2)	1.5 (2)	2 (2)	2.67 (3)	2.67 (3)	1.5 (2)	1.5 (2)	2.67 (3)	1.5 (2)	1 (1)
Estonia	4 (1)	4 (1)	1 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	4 (1)	0 (0)

Table A1-5: Q16. Going into sector-specific data in the E-PRTR, how would you rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors? By geographic location, part 2. Values = average score (n)

Labels	16.11 Waste water treatment plants	16.12 Production of pulp and paper	16.13 Textiles manufacturing	16.14 Food and drink production	16.15 Intensive rearing of poultry or pigs	16.16 Energy use – medium combustion plants (i.e., via IED, rather than via existing MCP Directive)	16.17 Intensive rearing of cattle	16.18 Intensive aquaculture (fish or shellfish farming)	16.19 Mining industries	16.20 Other activities
Finland	4.5 (2)	2.6 (5)	1 (1)	4 (1)	4 (1)	3.13 (8)	4 (1)	4 (1)	5 (1)	2 (2)
France	3.57 (7)	3.33 (6)	6 (6)	3.33 (6)	2.67 (6)	3.14 (7)	2.67 (6)	2.67 (6)	2.43 (7)	4 (1)
Germany	4.23 (44)	4.15 (34)	4 (33)	4.12 (34)	4.03 (33)	4.29 (41)	3.94 (31)	3.88 (32)	4.06 (35)	3.4 (5)
Greece	1 (2)	1 (2)	2 (2)	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)	1 (2)	1 (1)
Hungary	5 (1)	0 (0)	0 (0)	0 (0)	0 (0)	5 (1)	0 (0)	0 (0)	0 (0)	0 (0)
Ireland	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Italy	2.88 (17)	3.13 (15)	3 (10)	2.86 (14)	2.38 (13)	2.78 (18)	2.5 (14)	2.71 (14)	2.58 (12)	2 (3)
Latvia	5 (1)	5 (1)	1 (1)	5 (1)	5 (1)	0 (0)	5 (1)	5 (1)	5 (1)	0 (0)
Lithuania	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Malta	5 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	5 (1)	0 (0)	0 (0)
Netherlands	2.6 (5)	2.25 (4)	3 (3)	2.25 (4)	2.25 (4)	2.67 (6)	2.2 (5)	2.25 (4)	2.25 (4)	2.5 (2)
Norway	2 (1)	5 (1)	1 (1)	0 (0)	0 (0)	5 (1)	0 (0)	0 (0)	0 (0)	0 (0)
Poland	3.33 (3)	1 (1)	1 (1)	1 (1)	1 (1)	3.33 (3)	1 (1)	1 (1)	1 (1)	0 (0)
Portugal	3.83 (6)	3.75 (4)	4 (4)	3.25 (4)	2.75 (4)	3.17 (6)	2.75 (4)	2.5 (2)	2.75 (4)	2.5 (2)
Romania	1 (2)	1 (1)	1 (1)	1.5 (2)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
Serbia	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Slovakia	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Slovenia	1.5 (2)	2.5 (2)	2 (2)	2 (2)	2 (2)	1.5 (2)	1.5 (2)	1.5 (2)	1.5 (2)	2 (2)
Spain	3.71 (7)	3.25 (4)	4 (4)	3.5 (4)	3.4 (5)	4.13 (8)	3.33 (6)	3.6 (5)	3.71 (7)	5 (3)
Sweden	3 (3)	3.33 (3)	1 (1)	1 (1)	1 (1)	3 (2)	1 (1)	1 (1)	2.5 (2)	0 (0)
Turkey	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)	1 (1)
United Kingdom	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	2 (1)	0 (0)	0 (0)	1 (1)	0 (0)
United States	5 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)

Notes: Average values of 10 or more respondents have been colour-coded for table readability.
Legend: Dark red = 0-0.99; Light red = 1-1.99; Orange = 2-2.99; Light green = 3-3.99; Dark green = 4-5

A1.1.6 Q17. Thinking in more detail about the pollutants covered by the E-PRTR:

Q17a. Are there any pollutants that should be removed from the E-PRTR? N = 97

Respondents were asked to indicate if they believed any pollutants should be removed from the E-PRTR. Respondents either provided a list of substances, processes, or data types that should be removed. In total, 100 open text responses were provided. The investigation found three which were omitted for not providing relevant information. In total, 97 responses were included in the analysis, which provided a total of 99 codes. A summary of the topics and answers can be found in Figure A1-23.

A total of 56 responses indicated that '***no, there are no pollutants that should be removed from the E-PRTR'***, and this response appeared consistently amongst all stakeholder types.

Three companies and business associations requested that pollutants that are sector-specific and not of wider interest should be removed from the register, as they are not relevant to the E-PRTR but did not offer an explanation as to why they thought this. An additional three companies and business associations requested that the removal of pollutants from the E-PRTR should be preceded by a formal consultation with the industry to investigate the impacts of such removal. Three companies and associations stated that 'transfers in waste' should be removed but declined to provide further clarification.

Five respondents (two companies and business associations, two public authorities, one 'other') suggested that any pollutants which are deemed to be irrelevant to the EU should be removed from the E-PRTR but failed to provide information or clarification as to the scope or context in which pollutants may be considered irrelevant. Two respondents stated that entries to the E-PRTR with minimal to no emission values should be removed. Campaign cluster M provided eight responses concurring with the above point by stating that "pollutants that are no longer environmentally relevant should be excluded. Only pollutants with pan-European relevance should be considered".

Campaign cluster G provided 12 responses simply stating that "*pollutants considered should better reflect the environmental issues specific to an activity and should be aligned with the sectoral BREFs*", whilst another two companies and business associations argued that "*any pollutants not covered by BAT-AELs or emissions values should be removed*".

There were five responses grouped under 'other unclassified responses', which were topics or issues brought up by only low numbers of respondents. The following list summarises the statements of these five respondents;

- E-PRTR to be updated regularly in line with regulatory developments;
- Treatment of non-hazardous waste should be removed;
- Lower the reporting threshold for ammonia to capture 90% of releases from cattle rearing;
- The separation of data on pollutants which were originally monitored together (particularly where modern methods can now distinguish and measure pollutant elements separately);
- Two responses cited support for the list of conclusions made in the 'Review of E-PRTR implementation and related guidance – final report'.

Main arguments	Civil society NGO, non-environmental	Companies and business associations	Environmental NGO	EU Citizens	Other	Public Authority	Grand Total
No, there are no pollutants that should be removed from the E-PRTR	8	26	9	7	1	5	56
Pollutants should better reflect activity-specific environmental challenges and objectives should be better aligned with BREFs (Campaign G)		11			1		12
Remove pollutants which are irrelevant (Campaign M)		8					8
All pollutants which are irrelevant to the EU should be removed from E-PRTR		2			1	2	5
Other unclassified responses		2				3	5
Omitted responses		2				1	3
Transfers in waste should be removed from the E-PRTR		3					3
E-PRTR guidance needs to be developed with industry consultation		3					3
Reconsideration of the inclusion of sector specific pollutants		3					3
Remove pollutants that are not covered by BAT-AELs or emission level values		2					2
Those that have minimal to no emission values		1				1	2
Grand Total	**8**	**63**	**9**	**7**	**3**	**12**	**102**

Figure A1-20: Q17a. Are there any pollutants that should be removed from the E-PRTR? Thematic analysis by stakeholder group

Q17b. Are there any pollutants that should be added to the E-PRTR? N = 130

Respondents were asked to indicate any pollutants that they believed should be added to the E-PRTR. Respondents either provided a list of substances, processes, or data types that should be added. In total, 132 respondents answered this question, two of which were omitted for not providing relevant information. In total, 130 results were included in the analysis resulting in 132 codes. A summary of the topics given in answers to this question can be found in Figure A1-21.

The most prominent response (53 respondents), primarily from companies and business associations, was that there is no need for additional pollutants to be added to the E-PRTR. There was little to no further clarification provided as to why these respondents held that view, and the study team's working assumption is that for these respondents, the current list of pollutants is comprehensive.

In total, there were 28 respondents supporting the inclusion of further pollutants into the E-PRTR database. However, further statements to justify the feedback was not provided. It should be noted that some referred to activities rather than pollutants, and, in one instance, it is not clear what the respondent is referring to. The list below provides the type and number of times each comment was presented in these 28 responses:

- CMRs, PBT, vPvB, PMT, vPvM, and endocrine disruptors (seven);
- Particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) and black carbon (five);
- All priority substances in the field of water policy (four);
- All pollutants with emission values in BATs (four);
- Pharmaceuticals (three);
- Persistent Organic Pollutants (POPs) (three);
- Microplastics (two);
- Pesticides and biocides (two);
- TVOC (two);
- Pellets (one);
- Bio-media (one);
- Biomass energy production with high heat combustion (one);
- Biomethane combustion (one);
- GHG (one);
- Disaggregate substance groups (one);
- Heavy metals (one);
- Dioxins and dioxin like PCBs (one);
- Nitrates (one);
- Nanomaterial (one);
- Urban human activity (one);
- Ultrafine particles (one);
- Pollen (one); and
- Antimicrobial pollution monitoring (one).

In total, 11 companies and business associations and one 'other' provided statements that request the careful consideration of adding any pollutants to the register to ensure their relevance. Industry responses stated a clear desire for a consultation to ensure the impact on the industry is understood when additional pollutants are being considered for the E-PRTR. It was also suggested that additional pollutants to be added to the register should avoid reporting information where pollutants are not relevant to a given sector. In addition, any additional entries, industry responses stated, should have clear and demonstrable benefits to their inclusion in the E-PRTR. Three of these respondents also stated that careful consideration should be given to aligning additional pollutants in the register with sectoral BREFs.

Three companies and business organisations repeated previously submitted answers stating that the E-PRTR does not contain information on substances that are relevant for the production of drinking water from surface water, whilst two respondents (one public authority, one EU citizen) make the generic case that any new pollutants that have been proven to cause adverse environmental and human health effects should be included.

Campaign cluster F provided ten responses suggesting the Organisation for Economic Co-operation and Development (OECD) "shortlist" of 177 entries (OECD shortlist (ENV/JM/MONO(2014)32)), PMOC, REACH candidate, SVHC, and watch list substances should be added. "*Reporting shall concern use, production and direct or indirect release of chemicals of concern/pollutants… a mechanism to identify and integrate emerging pollutants of concern (e.g. Persistent Mobile organic chemicals, REACH candidate list SVHC or water relevant watch list substances), allowing fast-track amendments should be established*."

Meanwhile, campaign cluster G provided 16 responses stating that no additional pollutants should be added to E-PRTR. These respondents stated that:

"No additional pollutants should be considered. The current list is already exhaustive and covers a set of known impacts. The addition of [more] pollutants to the E-PRTR will require additional burden for operator reporting, competent authority collection, validation of data and IT system modifications. The scope of the E-PRTR needs to consider if it has to contain all pollutants and whether there are any overlaps or double-counting with other reporting entities (e.g. reporting to EU-ETS and reporting of F-Gases). The Seville process should be the leading instrument how to reassess and add additional pollutants to the EPRTR. These discussions are highly relevant for industry, at the very least given that it will have to implement these new reporting obligations."

Or:

"In our view, the environmental benefits of the inclusion of additional pollutants shall be carefully assessed in order to avoid the reporting of pollutants which may not be relevant for the process of a specific sector."

Main arguments	Civil society NGO, non-environmental	Companies and business associations	Environmental NGO	EU Citizens	Other	Public Authority	Grand Total
No, there is no need for additional pollutants	1	47		2	1	2	53
Yes, list of items to include in the E-PRTR	6	9	2	2	1	8	28
No additional pollutants should be considered (Campaign G)		16					16
The inclusion of further pollutants should be carefully assessed to ensure their relevance		11			1		12
Recommendation to include the OECD's shortlist of 177 entries (Campaign F)	3		5	2			10
Yes, other unclassified responses		3	1		1	3	8
Substances relevant for the production of drinking water from surface water			3				3
Yes, where any human health or environmental adverse effects are present				1		1	2
Omitted responses		1	1				2
Grand Total	**10**	**87**	**12**	**7**	**4**	**14**	**134**

Figure A1-21: Q17b. Are there any pollutants that should be added to the E-PRTR? Thematic analysis by stakeholder group

Q17c. Are there existing E-PRTR pollutants, to their reporting thresholds, that should be amended? Please specify which. N = 86

Respondents were asked to state whether they believe there are any existing E-PRTR pollutant thresholds that should be amended. In total, 90 respondents answered this question; four responses were omitted for not providing information relevant to the question. This resulted in a total of 86 responses included in the analysis. Respondents either provided a list of substances, processes, or data types that should be amended. A summary of the topics given in answers to this question can be found in Figure A1-22.

In total, 21 responses stated 'no, there are no amendments necessary'. Of these responses, 17 were from companies and business associations, one from a civil society NGO, and one EU citizen. In contrast, 20 separate responses provided varying comments regarding how thresholds may be amended; these comments are explored below.

Four responses (one company or business association, two public authorities, and one EU citizen) request that reporting thresholds are decreased for pollutants to increase transparency. Only one provided further clarification, suggesting that as per the ICF 2020 study, thresholds should be lowered for high/medium confidence pollutants… and specifically for certain substances[41]. One company or business association noted that: "*discussions under the E-PRTR Expert Group recently resulted in the definition of units and metrics for reporting certain contextual fields. These discussions are highly relevant for industry which should be invited to participate in discussions under this forum*."

One prominent argument made by companies and business associations (six) repeated previous comments which requested that industry is consulted before any amendment to ensure the relevance of changes to the reporting thresholds.

Another company and business association (one) stated, "pollutants that are not of general concern (only for a particular process or just in certain regions/locally) should be left out of E-PRTR. Focus on what is the highest priority."

Campaign cluster F provided eight responses, all of which cited position papers, the common theme of which was that *"thresholds should be removed or adapted to any of the lowest entry in any MEA or lowest applied by any given party, we object to set any threshold for CMR, or P or B or T properties pollutants or other pollutants with hazard properties of equivalent concern*".

Campaign cluster A provided six responses with the position that a "***careful check procedure [was] needed for pollutants which are only of interest for certain industries/activities. These should not be part of E-PRTR***." Campaign cluster G provided eight responses with the following position: ***"Pollutants addressed should be better reflecting the environmental issues specific to an activity and for this purpose should be better aligned on the sectoral BREFs"***.

Another common response across answers was that any changes to thresholds should check for consistency of thresholds for substances in the same groups or released by the same activities. These include SVHC (one), PCDD/F POPs (one), urban waste [water] plants (one), textile industry methane (one), LNG (one), fossil fuels (one), biomass fuels (one), ammonia (one), particulate matter less than 10 microns in diameter (PM_{10}) (one).

A further four respondents (three companies or business associations) requested that all thresholds should be "***reviewed at regular intervals***", but they declined to provide further clarification. Seven

[41] The substances listed were: Hg, Cd, PAH, SF_6, DCM, Hf, Ni, As, Cl, Cu, Cr, PM_{10}, NMVOC, Zn, HCN, Pb, NH_3, NO_x, benzene.

respondents provided a list of specific substances which require reviewing, but these respondents did not provide further information as to what type of review is needed. Four companies and business associations provided a statement requesting steps to be taken "***towards real-time monitoring at least in energy, waste and process industry. From a technological perspective, it is possible to reliably monitor and report on most emissions real-time in plant/mill – location – Member State – EU level***".

In the same context, three respondents requested reporting all pollutant releases, even if below established thresholds. Meanwhile, another three suggested that priority substances should have all thresholds removed; particular reference is made to PCDD/F, POPs, and asbestos.

Three companies and business associations stated that: "***the revision of the E-PRTR should aim at removing the unnecessary administrative burden placed on the industry, for instance, when asking companies to report emissions with concentrations below the detection limit that are quantified with large volumes of water***."

One public authority suggested that: "***in particular, the thresholds for shipments of waste should be examined in terms of their relevance with a view to possibly raising the thresholds."***

Two companies and business associations stated difficulties in managing data reporting across Member States, noting that "***undertakings with installations in different Member States face an additional level of difficulty as they have to comply with different requirements and different deadlines***." In a similar vein, three companies and one civil society NGO acknowledged further misalignment in rule systems and argued for the need for coherence between the E-PRTR data and other international regulations and guidelines. Particular reference was made in these responses to aligning thresholds between the E-PRTR and IED, as well as 2005 WHO guidelines on air quality.

Main arguments	Civil society NGO, non-environmental	Companies and business associations	Environmental NGO	EU Citizens	Other	Public Authority	Grand Total
No, there are no ammendments necessary	1	17		1		2	21
Regarding amending thresholds		12	1	1	2	4	20
See reports (Campaign F)	3		3	2			8
The pollutants treated should better reflect activity-specific environmental challenges and the objective should be better aligned with sectoral BREFs (Campaign G)		5			1		6
Industry specific pollutants should not be included in E-PRTR (Campaign A)		6					6
Yes, list of items that need reviewing				2	1	2	5
E-PRTR substances, data and reporting should be coherent with other regulations and guidelines	1	3				1	5
Other unclassified responses	1	1	1			2	5
E-PRTR should provide real-time monitoring data		4					4
Omitted responses		2				2	4
E-PRTR should aim to remove unnecessary administrative burdens placed on industry		3					3
Problems with installations in multiple Member States		2					2
Remove pollutants which are not of general concern		1					1
Grand Total	**6**	**56**	**5**	**6**	**4**	**13**	**90**

Figure A1-22: Q17c. Are there any existing E-PRTR pollutants, or their reporting thresholds, that should be amended? Please specify which. Thematic analysis by stakeholder group

A1.1.7 Position papers: method and profile

Method statement

Introduction

In total, 65 position papers were submitted to the survey. These were analysed to discern their content specifically related to any potential revisions to the E-PRTR. Of the 65 position papers, only 26 mentioned the E-PRTR, with the rest focusing on the IED revision. Four were removed, as they were duplicates, leaving us with 22. This limits the findings we are able to draw from this data. There was one campaign that submitted the same policy paper several times. This was only included once so as not to distort the results.

Content of papers

A first level categorisation of papers took place by respondent type, sector, and geographical scope.

Position papers were grouped according to the stakeholder combinations provided by the Commission. The papers consist of the following stakeholder groups:

- Companies and business associations (18);
- Environmental non-governmental organisation (NGO)s (three); and
- Public authorities (one).

For sector, the following sub-categorisations were used:

- Chemicals (four)
- Construction (two)
- Energy (two)
- Environment (two)
- Government (one)
- Metals (one)
- Mining (one)
- Other activities (two)
- Pharmaceuticals (one)
- River water (one)
- Technology (four)
- Waste management (one).

For geographical scope, the following levels were distinguished:

- National (12)
- EU (eight)
- International (two)

A1.1.8 Position papers: key messages

Analysis of the position papers was structured along the following three dimensions:

- problem/challenges with E-PRTR;
- recommendations for the revision of the E-PRTR; and
- impacts of the potential revision to the E-PRTR.

The position papers were overwhelmingly positive about the database; however, there were some areas they would like to see revised, as further detailed below.

Problems/challenges with the E-PRTR

Lack of harmonisation/ integration

One area often mentioned (six) is the need for greater harmonisation between relevant policies. There are differences in the reporting standards of the E-PRTR, the IED, and the ETS. This makes it far more difficult and expensive to report than if there was a more integrated approach. The issues at hand are most succinctly summarised by this response:

"In the current texts, IED capacity thresholds and E-PRTR emission thresholds are generally different. As a result, some IED installations are exempted from reporting the emission of certain pollutants in E-PRTR because their annual emissions are below the corresponding E-PRTR thresholds. Conversely, when E-PRTR thresholds are low or equal to zero, non-IED installations need to report their corresponding emissions. Hence, E-PRTR provides annual results per pollutant which do not match well with source categories (IED, non-IED, others)."

The differences lead to a duplication of administrative work, which adds more costs. If the different databases were synchronised, the entire emissions reporting system would be far simpler, thus saving money for many companies.

Insufficient coverage of pollutants

Three position papers stated that they would like to see the E-PRTR cover a greater range of pollutants. There is a belief that the coverage does not reflect current concerns. It is proposed that the E-PRTR could cover all substances under one group. Related to this, certain substances should have their thresholds revaluated. For example, one respondent said that asbestos should have no threshold at all.

E-PRTR should cover all impacting installations

One respondent, a business association, stated that the E-PRTR would be of greater significance if it covered a larger range of polluting installations. They stated that the contribution of IED installations in the pollution of the water bodies and the atmosphere is now smaller than the contribution of non IED installations or cities. Increasing the number of installations would more truly reflect emissions in Europe.

Monitoring is inaccurate/ irregular

According to respondents (six), the reporting for the E-PRTR could be more accurate and more regular. This is illustrated by the sense that it is very difficult to alter results once they have been uploaded to the

database. This means any errors may remain uncorrected, thus hindering accuracy. A couple of respondents stated that they would like to see concentration data (e.g. mg/Nm^3) to supplement mass data. They believe this would improve the accuracy of the E-PRTR.

Easy Accessibility

Even though some respondents thought the reporting on the E-PRTR database could be improved, three respondents stated that the database is easily accessible. They believe that the relevant experts, industry, and NGOs already know how to use it effectively. Respondents concede it can be a little challenging but say it is self-explanatory once you have worked with it. With this said, they would welcome any attempts to improve usability, especially if more stakeholders are able to take advantage of it.

Regulation has inaccurate language/ lack of context

Respondents (four) stated that the regulation could have more accurate language and provide greater context. The definition of an 'installation' was singled out by a couple of respondents. It is deemed too vague and could mean some releases are currently not being accurately accounted for. Related to this is the need to provide more context, as many pollutants are put on the same level; therefore, it can be difficult to compare them based on the environmental effects. Adding a greater amount of context would be beneficial.

E-PRTR does not cover performance

One of the recurrent themes (five) was that the E-PRTR is a database that reports emissions but does not measure environmental performance. Respondents would like it to stay this way as there are other mechanisms for this purpose. The objections of respondents to measuring performance are best summarised by the statement that:

"Recently, there have been discussions on the fact that EPRTR should help identifying the best performers for the Sevilla process under the IED. We believe that this approach is not appropriate, as EPRTR cannot take into account many of the factors (which are indeed analysed during the Sevilla process), and there is the concrete risk of setting benchmarks that depend on factors unrelated to the plant management (and therefore permits), such as, e.g., plant size, economic aspects."

The prevailing opinion is that the IED and the ETS are more suited to gauging environmental performance compared to the E-PRTR. There is an insufficient context in the database to be able to accurately consider the various factors that affect performance.

Removing pollutants is not needed

Three respondents stated that the removal of pollutants (sun-setting) from the E-PRTR is not needed. If the thresholds are appropriate, then then they should stay on the database. The decision of which substances are relevant is taken under the BREF process, thus highlighting how the IED, BREFs and E-PRTR complement each other.

Suggested recommendations/changes to E-PRTR

Cover a greater range of pollutants

According to some respondents (five), the E-PRTR should cover a greater range of pollutants and installations. This would better reflect current and future concerns. Respondents singled out specific solutions, such as adding an entire group of pollutants or amending the E-PRTR to include reporting on actual by-product and fugitive emissions of F-gases and ODS at all chemical plants in the EU. It is believed that this would lead to a more comprehensive database. Furthermore, adding large agricultural industries is viewed as necessary. This is due to their role as large ammonia and methane emitters. Covering a wider range of installations would mean the E-PRTR would be a truer reflection of emissions in Europe.

Improve monitoring regularity (real-time emissions)

One initiative supported by several of the policy papers (five) is a move towards far more regular emissions' reporting. The implementation of real-time emissions' monitoring is proposed, as this is viewed now as being technologically feasible. Ideally, a user would be able to track emissions as follows: plant/mill – location – Member State – EU level. Such a system would clearly be a technological challenge but would lead to far greater transparency.

Implement IED and E-PRTR revisions simultaneously

One respondent stated that they would like to see the IED and E-PRTR revisions implemented at the same time. This would ensure compliance is more straightforward for those affected by any potential changes. Furthermore, it would be less expensive due to less onerous administration.

Ensure easy accessibility of new portal

The E-PRTR is widely seen as being easy to use, according to position papers. Its use is self-explanatory and intuitive. The respondents would like it to stay this way, without too many complicated changes, which would add difficulty.

Impacts of the potential revision of the E-PRTR

Respondents viewed the E-PRTR as a success and an important part of the EU's transition to a greener economy. They said a lot of this success could be credited to the multitude of instruments currently being used, such as the IED and BREFs. However, there was concern that any revision that was too stringent could lead to a loss of competitiveness for EU companies. This might consequently lead to an increase in emissions in less regulated regions because of the potential displacement of business. There is a belief that economic and environmental concerns can be effectively balanced.

A1.2 Targeted stakeholder survey

A1.2.1 TSS method statement

The targeted stakeholder survey (TSS) was initially open for 8 weeks, from 8 March to 30 April 2021. This was subsequently extended by two weeks (to 14 May 2021) to allow for late submissions. Invitations to

the survey were sent to a mailing list of over 800 IED and E-PRTR stakeholders. The aim of the TSS was to gather specific feedback and information for the identification and assessment of options from stakeholders with sufficient knowledge of and experience with the E-PRTR. The survey consisted of 61 questions (Annex 2), grouped under the six problem areas broadly reflecting the inception impact assessment, namely:

1. Activities and activity thresholds
2. Pollutants and thresholds for reporting releases
3. Information to track progress towards the circular economy and the decarbonisation of industry
4. Reporting modalities and data flow
5. Access to E-PRTR information
6. Releases from diffuse sources and products

The survey was administered through Alchemer®, and some questions were tailored to specific stakeholder groups: Member State authority (at any level of administration), industry (individual company or trade association) or other stakeholder group (environmental NGOs, technical experts, academia and researchers). Word and pdf versions of the survey, including all questions, were distributed by email for reference to facilitate the collection of information and for complete transparency. Three industrial associations and one NGO submitted accompanying material, such as position papers, explanatory remarks and summaries of key messages.

Analysis has been undertaken using Microsoft Excel and covers complete responses (a survey response in Alchemer is marked as completed when the respondent reaches the 'Thank You' page) as well as partial responses of survey participants who answered at least one question and provided at least one of these three elements:

- Name;
- Organisation name;
- Email address.

Exported questionnaire data underwent a 'cleaning' process prior to its analysis. This process sought to identify and remove any duplicate or malicious response which may affect the validity of the survey's results. Investigations of the data included searches for blank submissions, which typically indicate respondents who have reviewed questions without providing a substantive response. All blank responses were identified and were filtered out of the final analysis for each question.

A1.2.2 TSS respondent profiles

The survey received 128 complete responses and 33 partial responses, for a total of 161 responses. This section provides visual representations of the data received.

The majority of responses were on behalf of industry or trade associations, most of which with bases in Belgium but with members from the EU (Figure A1-23 and Figure A1-24). For the analysis of the responses to some of the questions, stakeholder categories were merged into three broad groups:

- Researchers, NGOs and members of the public (seven respondents);
- Authorities (European institutions, national and regional/local authorities for a total of 50 respondents); and

- Industry (industry or trade associations, private companies and public utility providers for a total of 102 respondents).

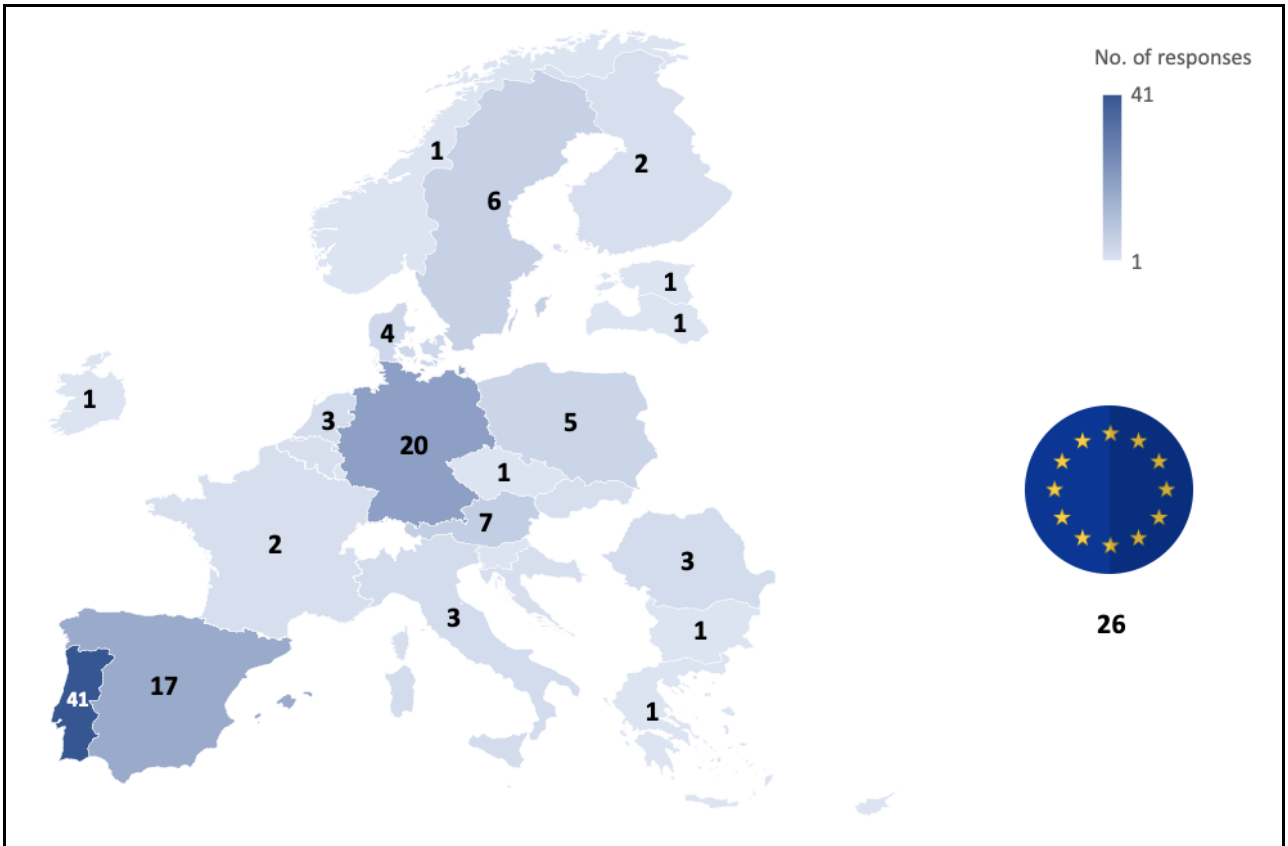


Figure A1-23: Responses by country of operation - Number of respondents: 161

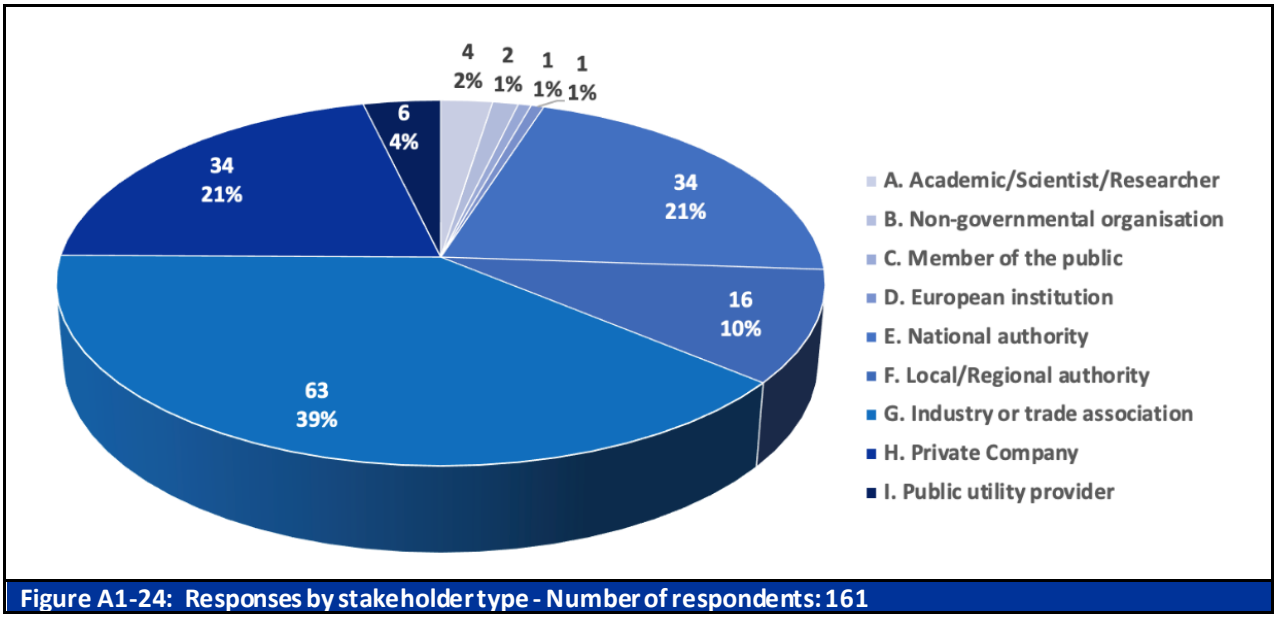


Figure A1-24: Responses by stakeholder type - Number of respondents: 161

Most of the respondents indicated their availability to be contacted for a follow-up interview.

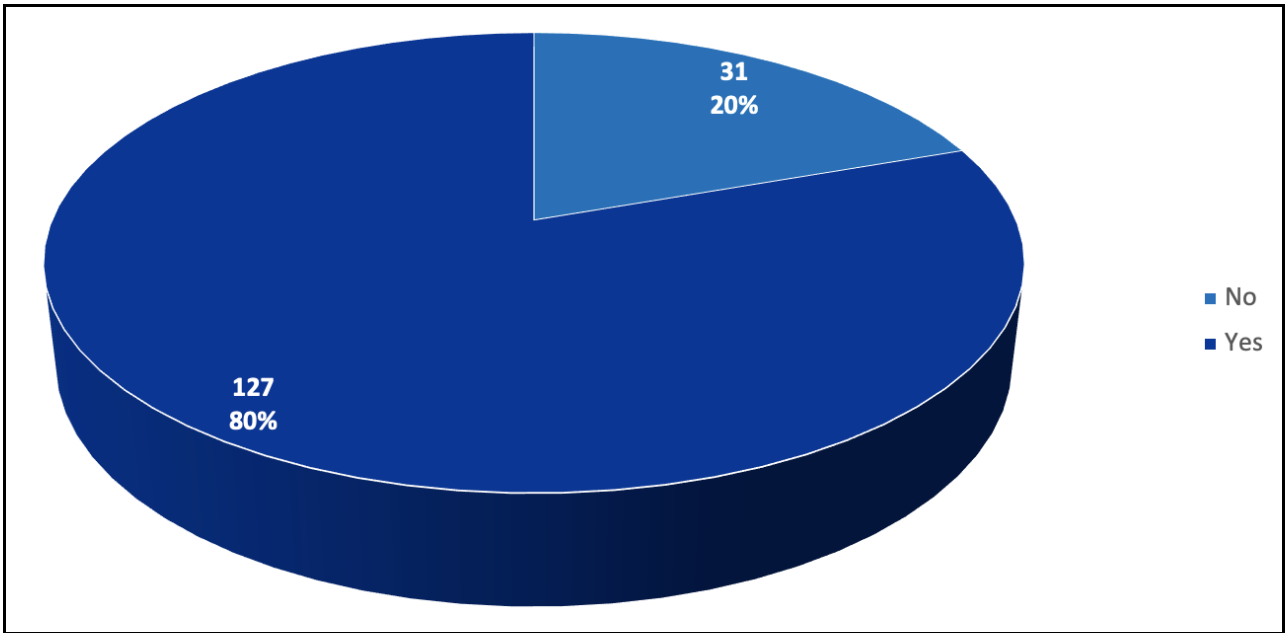


Figure A1-25: Are you willing to be contacted for any clarification, a follow-up interview and/or further updates on the impact assessment? - Number of respondents: 158

Among the private companies and utility providers that participated in the survey, the majority indicated to be large or medium enterprises.

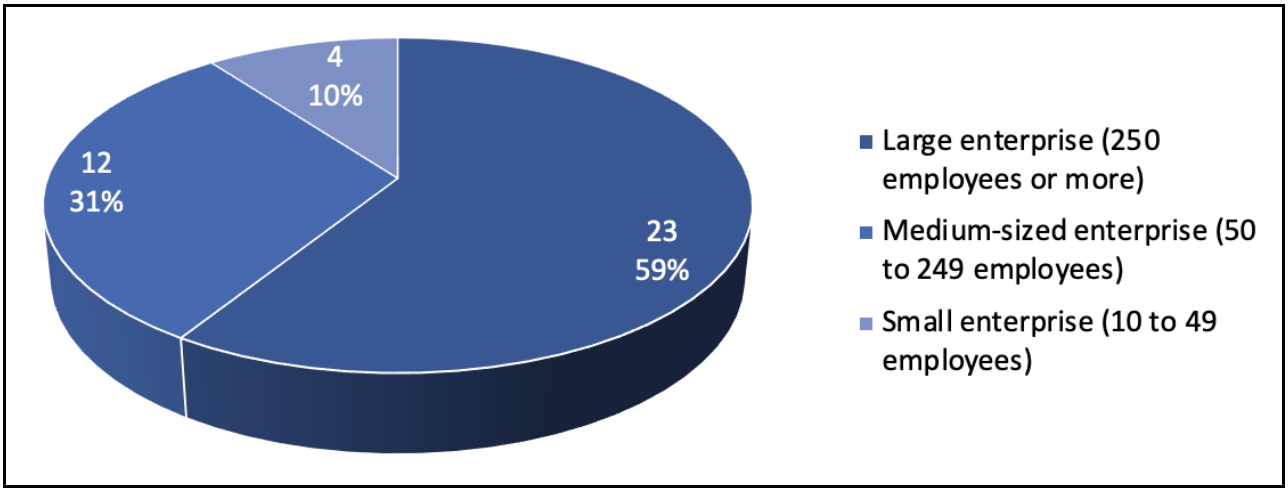


Figure A1-26: Q2: Organisation size - Number of respondents: 39

The majority of responses received from the industry stakeholders were from associations and companies in the manufacturing sector (NACE C), with fewer responses from stakeholders in water supply, sewerage, waste management and remediation activities (NACE E), mining and quarrying (NACE B), and electricity, gas, steam and air conditioning supply sectors (NACE D).

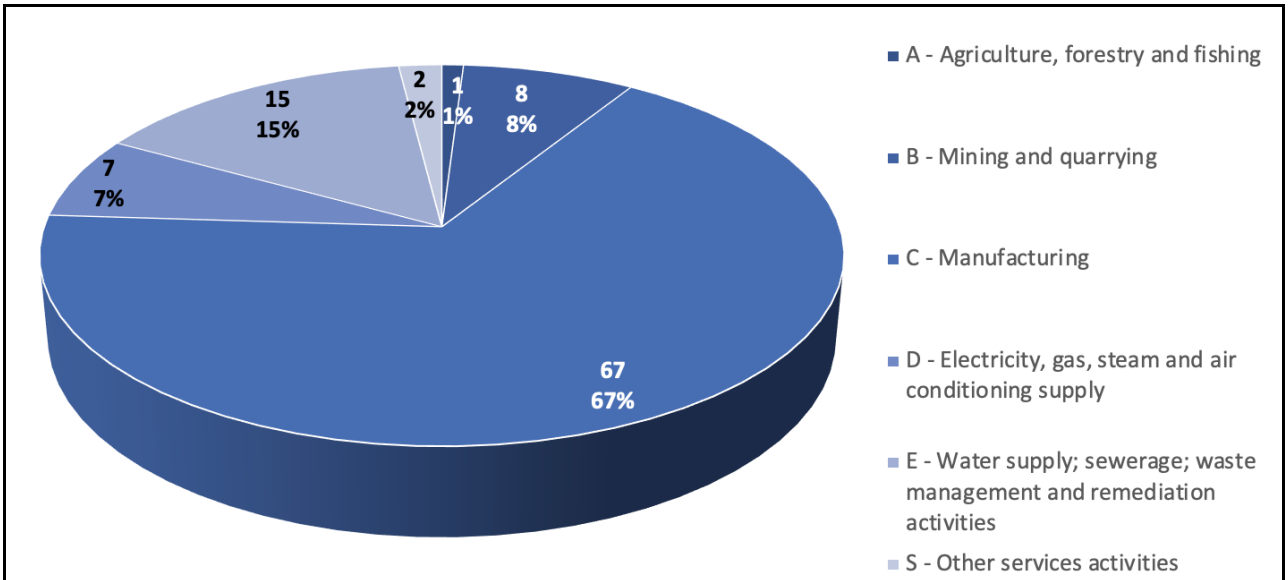


Figure A1-27: Industry stakeholders by economic sector - Number of respondents: 100

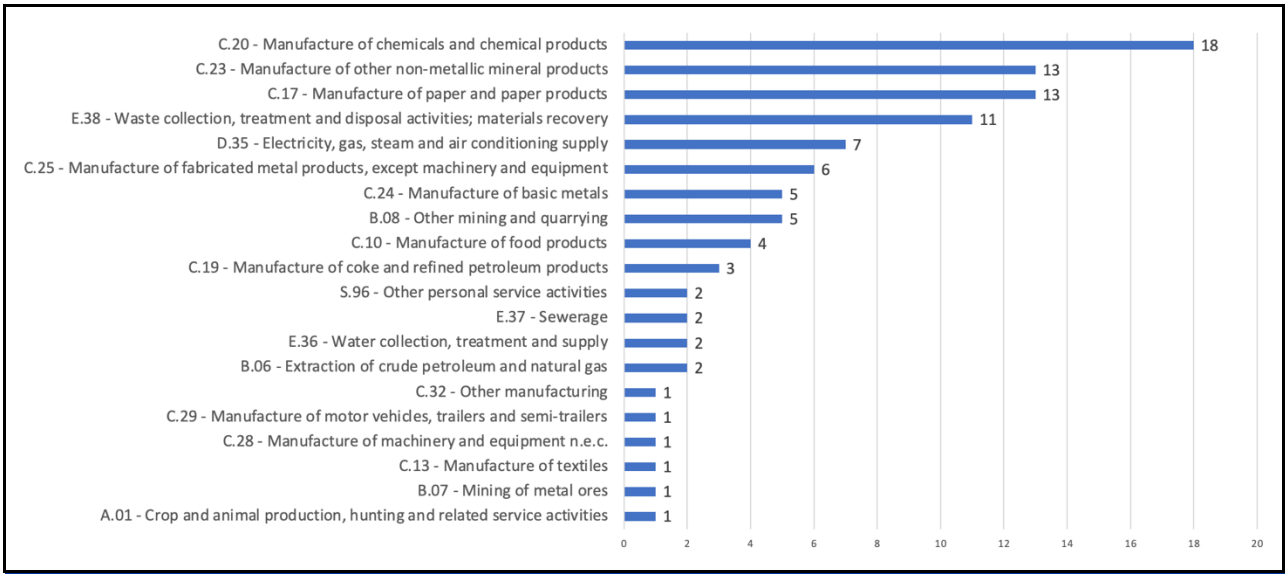


Figure A1-28: Q3: Please indicate the two-digit NACE code of your primary business sector - Number of respondents: 100

Only around half of the respondents had direct experience with the register, being either responsible for providing data to a competent authority or responsible for checking the data provided at a national level and forwarding it to the European Environment Agency.

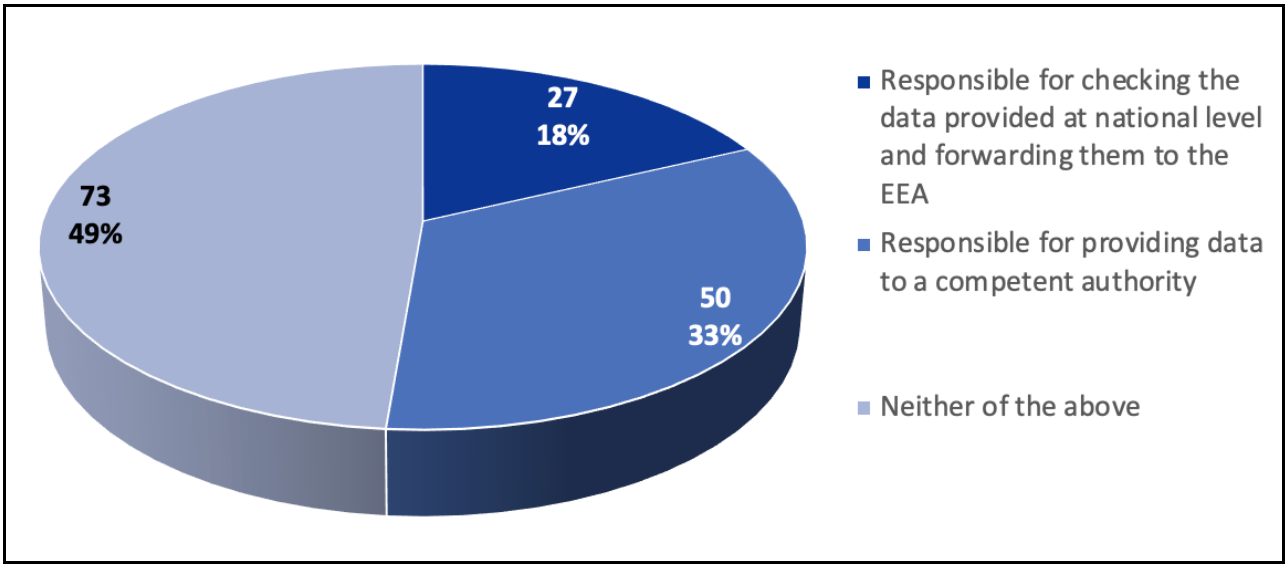


Figure A1-29: Q7: I am... - Number of respondents: 150

A1.2.3 Respondents' use of pollutant registers

The majority of respondents from industry accesses a national pollutant release and transfer register occasionally (either between once per month to once per year or once per year or less), whereas the authorities use it more regularly (between once per week and once per month to more than once per week).

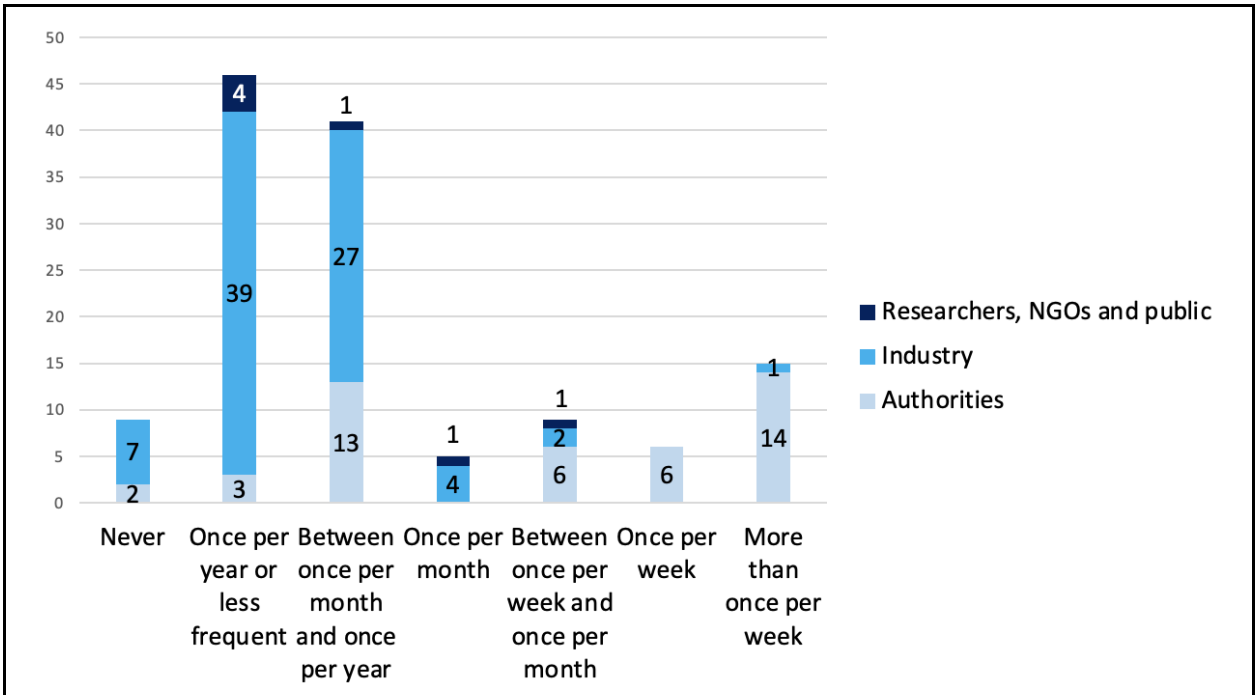


Figure A1-30: Q4(i): How often do you access a national pollutant release and transfer register? Number of respondents: 131

The authorities access the E-PRTR slightly less frequently than a national pollutant release and transfer register, whereas the industry stakeholders access the E-PRTR similarly as the register. Overall, authorities tend to access the register and the E-PRTR more frequently than industry stakeholders.

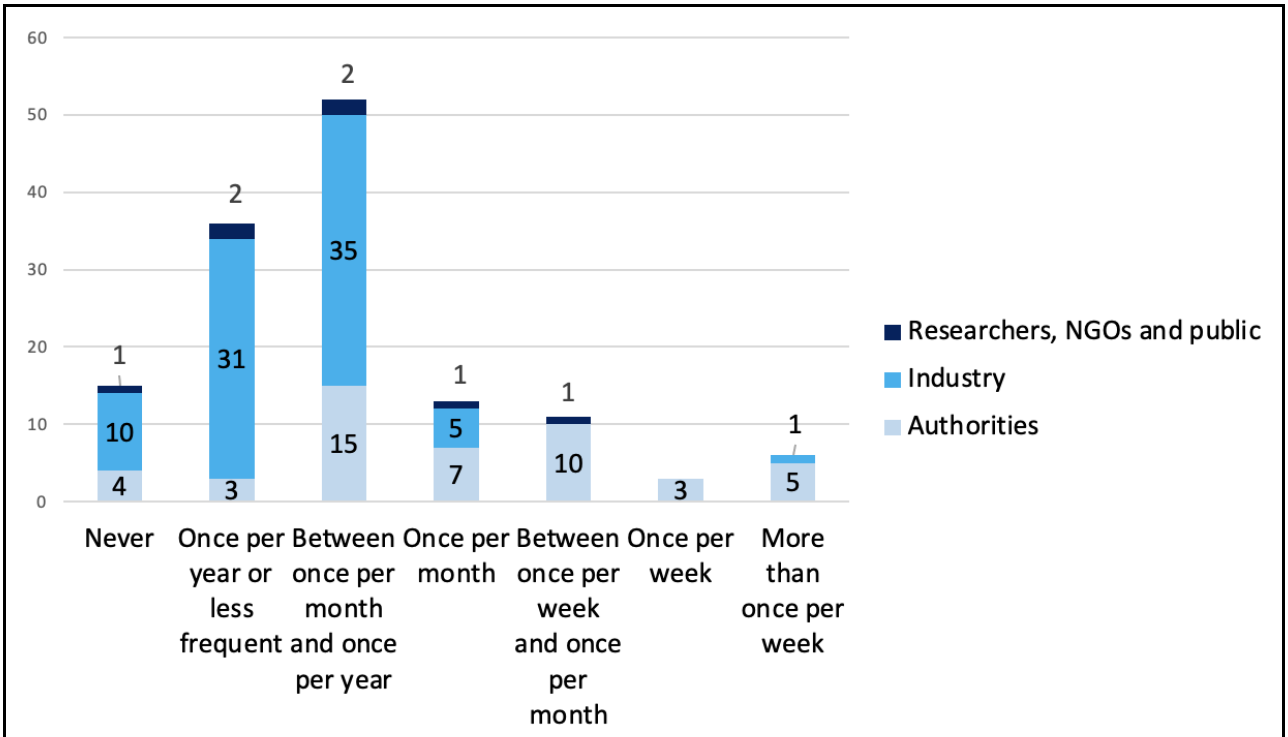


Figure A1-31: Q4(ii): How often do you access the E-PRTR?

Many industry stakeholders access the pollution registers to review their own data, compare releases between activities, facilities and regions and carry out overall analyses of release data. However, one respondent noted that, at the moment, the data is not sufficient to assess compliance or carry out benchmarking between facilities. National, regional and local authorities access the pollution register to check data for consistency (Figure A1-32), provide data for the national air emissions inventories (UNFCCC, UN-ECE-CLRTAP and National Emission Ceiling Directive), cross-check information reported under other legislation (e.g. EIA, SEA, Seveso, UWWTD, WFD) and provide data to local enforcement authorities. Among the respondents who indicated "Other", some suggested accessing pollutant registers to prepare BREF reviews and identify key environmental parameters. However, one respondent noted:

> *"The PRTR can only be used very roughly for the BREF process and only to get a first picture. However, the comparability is questionable. A more detailed use of the data to derive BAT-AEL is not possible because the data basis and the reference parameter (BREF plant/emission point; PRTR site) are different. Unfortunately, there is no comparable definition either in IED, PRTR, or BREFs."*

Finally, one respondent reported accessing the data to assess the efficiency of environmental public decisions and legislation.

Most of respondents access pollutant registers to examine releases to air and water as well as waste transfers (Figure A1-33).

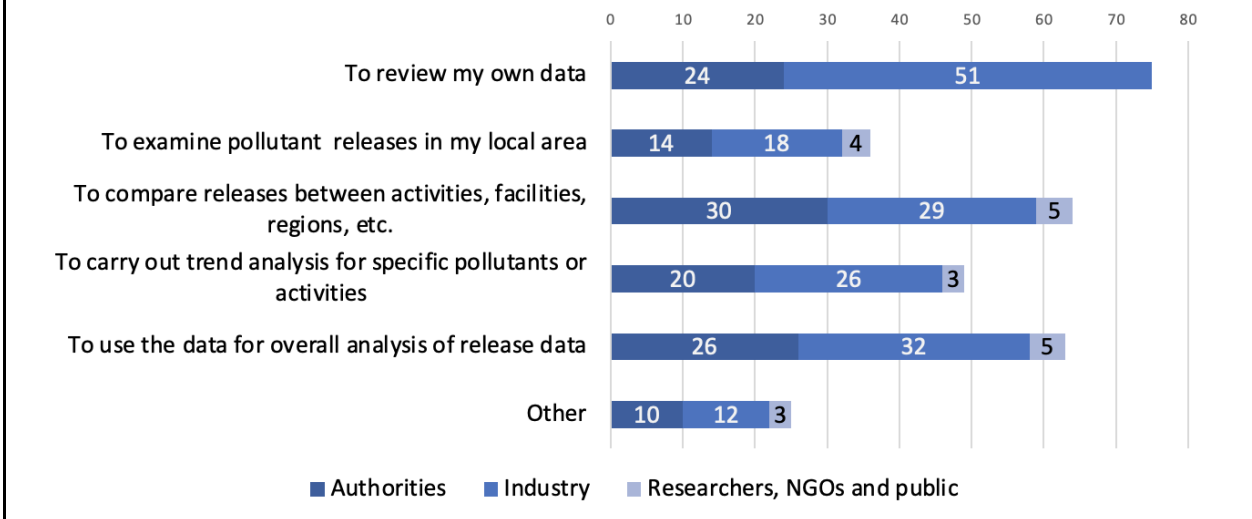


Figure A1-32: Q5: What do you access the pollution register(s) for? (Multiple options can be selected) – Number of respondents: 133

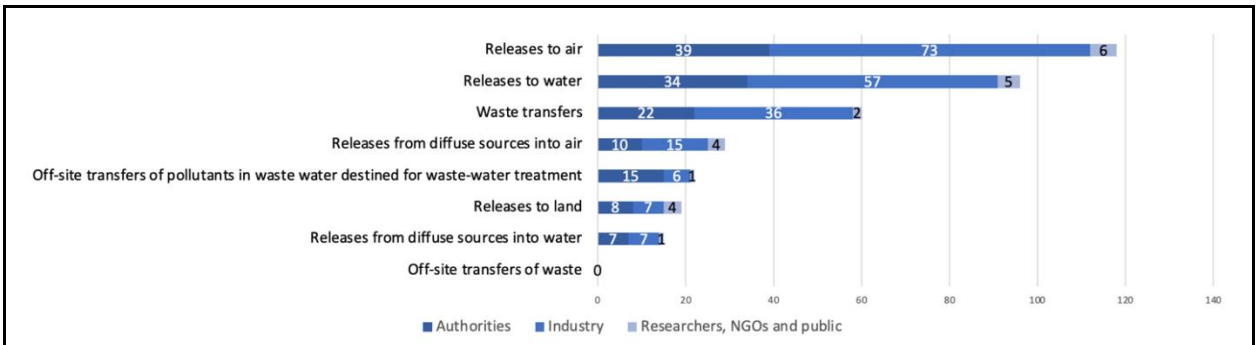


Figure A1-33: Q6: Which data do you most often examine? (Multiple options can be selected) – Number of respondents: 132

A1.2.4 Administrative burden

Industry

The majority of industry stakeholders consider the gathering and reporting information to the competent authorities as time-consuming (Figure A1-34). Most industry representatives reported 5 to 15 workdays per facility (Q9. What is your estimate of how many person-days per year you need to collate and report the information to your competent authority?). Some reported a lower number of days (3 workdays per installation or fewer) but specified that this relates to years when the reporting methodology (measurement, calculation or estimation) is not defined or reviewed. Some industry associations noted that reporting data to the E-PRTR is easy and quick, but efforts are required for the upstream and downstream collection, preparation, and quality control of the information to be submitted, particularly for multinational companies. Any change to the current system would lead to significant additional efforts, estimated as 30-60 workdays. Another industry association noted that the number of person-days per year is plant-specific and depends on the complexity of the installation (number of sub-installations,

auxiliary equipment, number of stacks etc.) and the number of pollutants and waste transfers to be assessed and reported (if reporting threshold is exceeded). Indeed, for large chemical sites with various legal entities, an industry association reported required resources summing up to 100 person-days per year. Most industry stakeholders reported incurring other costs (beyond work time) to gather and report the information, many pointing to the monitoring of pollutants only required by the E-PRTR. Some noted that the internal reporting system is expensive and that sometimes there are costs related to hiring external consultants and auditors. Big industrial sites may host many different legal entities, for which the information collection and reporting system needs to be coordinated and which is part of the general service agreement. Some of the respondents commented:

> *"The reported emission data is derived from several measurements. These measurements must be carried out by certified personnel with certified equipment according to specific standards. Therefore, additional costs occur, which vary depending on the type of parameter and type of measurement (single or continuous measurement). Costs for a single measurement of the common air pollutants are around €2,500 whereas a continuous measurement costs around €50,000 per year. Internal costs for operating continuous monitoring instruments (i.e. control and maintenance of instruments) must also be considered. More information on costs of monitoring of emissions to air and water can be found in the JRC Reference Report on Monitoring of Emissions to Air and Water from IED Installations (ROM)."*

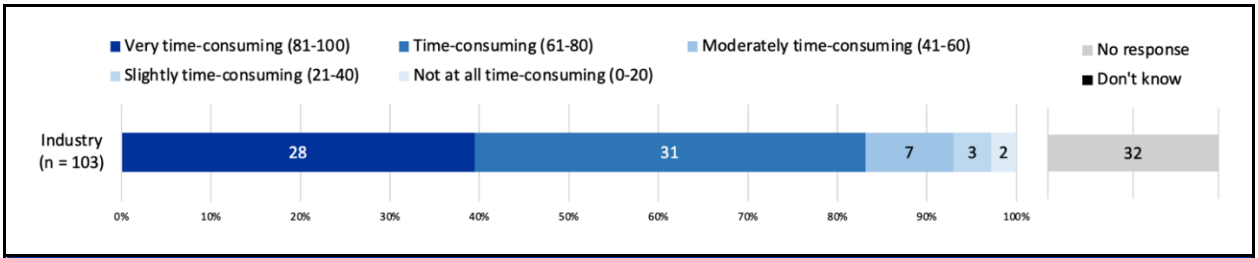


Figure A1-34: Q8: Is gathering and reporting the information to your competent authority time-consuming? – No. of respondents: 71

Competent authorities

With regard to the assessment of data quality, local, regional and national competent authorities reported that this process is moderately to very time-consuming.

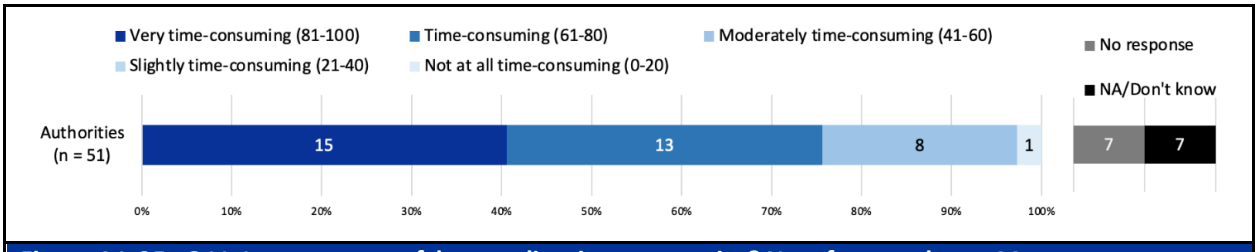


Figure A1-35: Q11: Is assessment of data quality time-consuming? No. of respondents: 44

A1.2.5 Quality and completeness of the data in the E-PRTR

The majority of industry and authority respondents rated quality and completeness of the data in the E-PRTR on release to air good or very good. Half of researchers and NGOs rated the quality of the data as acceptable, and the completeness of the data as good, however there were only two respondents to this question (Figure A1-36). Large part of industry stakeholders and authority representatives and majority of the researchers, NGOs and public group did not know the answer or not answered the question at all.

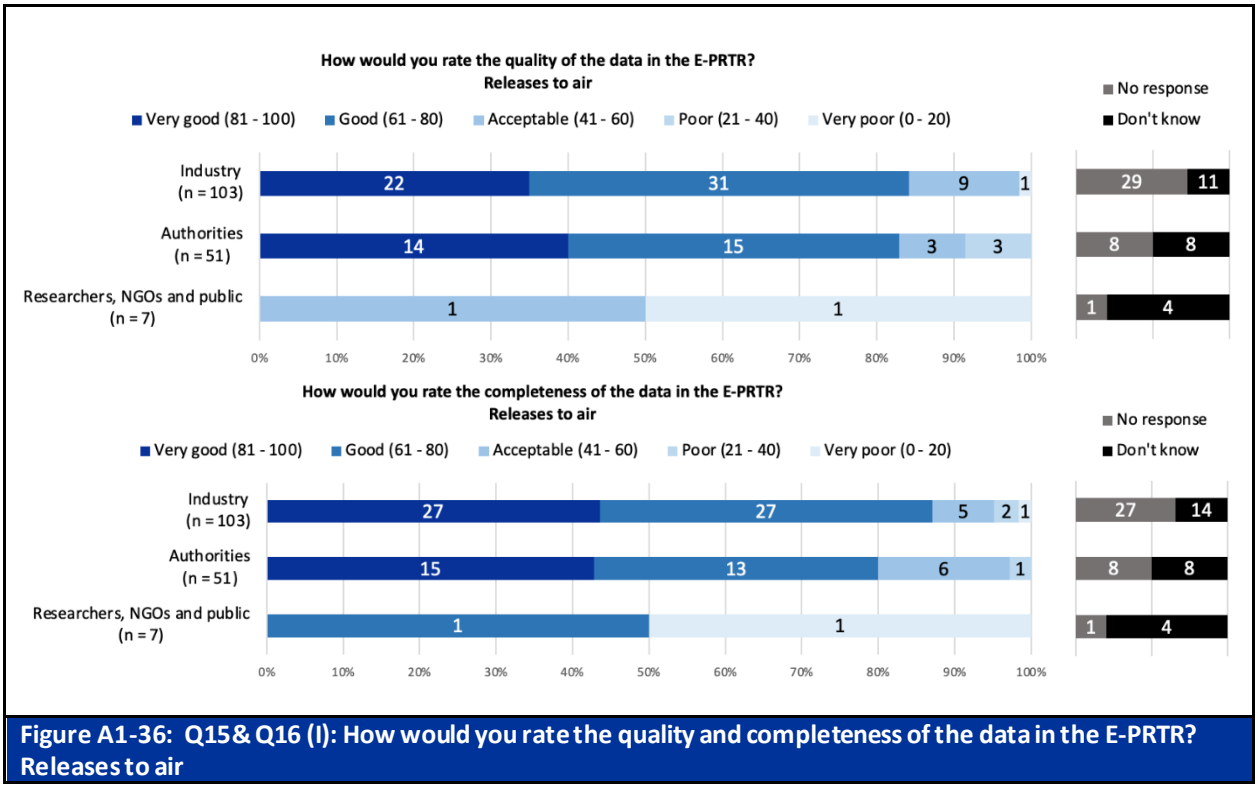
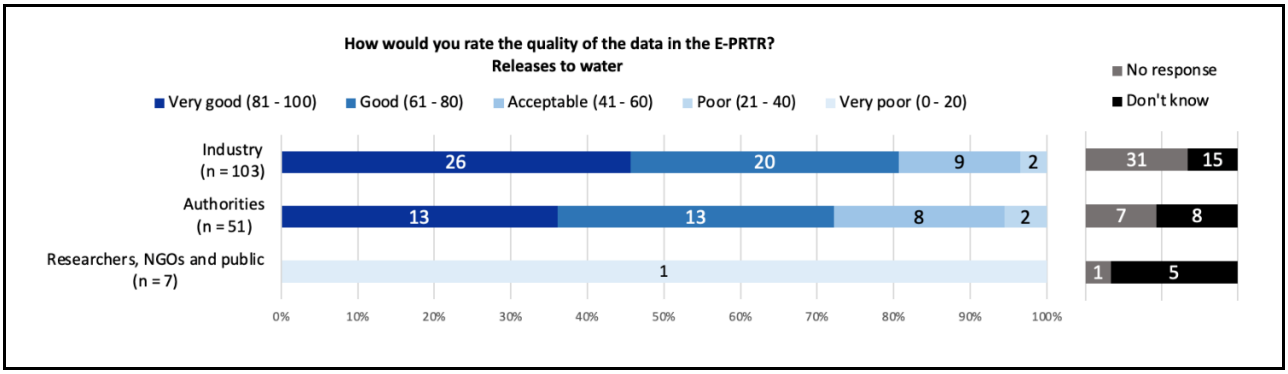


Figure A1-36: Q15& Q16 (I): How would you rate the quality and completeness of the data in the E-PRTR? Releases to air

Similar trend was observed for the data quality and completeness on release to water, although just above 70% of respondents from authorities evaluated the quality of data as good, and just under 70% thought that completeness of such data was good, with the industry results being similar to that of release to air (Figure A1-37). There was only one responded from researchers and NGOs, and they scored the quality and completeness of data as very poor.



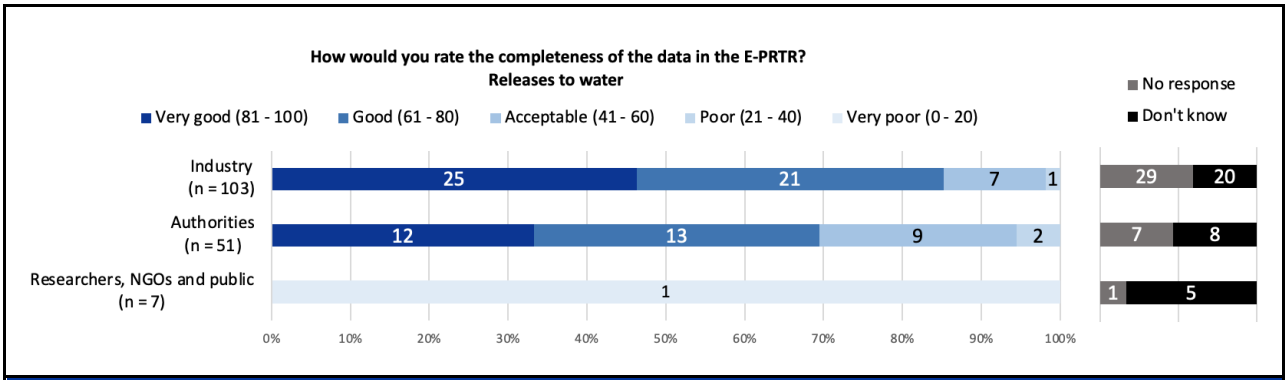


Figure A1-37: Q15& Q16 (II): How would you rate the quality and completeness of the data in the E-PRTR? Releases to water

A slightly different picture was observed for the data quality and completeness on release to land. Although the majority of respondents from the industry evaluated the quality and completeness of data as good, only half of the authority representatives thought the same (Figure A1-38). However, the majority of participants in the survey did not know the answer or did not answer the question at all. Only one respondent from the researchers, NGOs, and public group evaluated the quality and completeness, and it was rated 'very poor'.

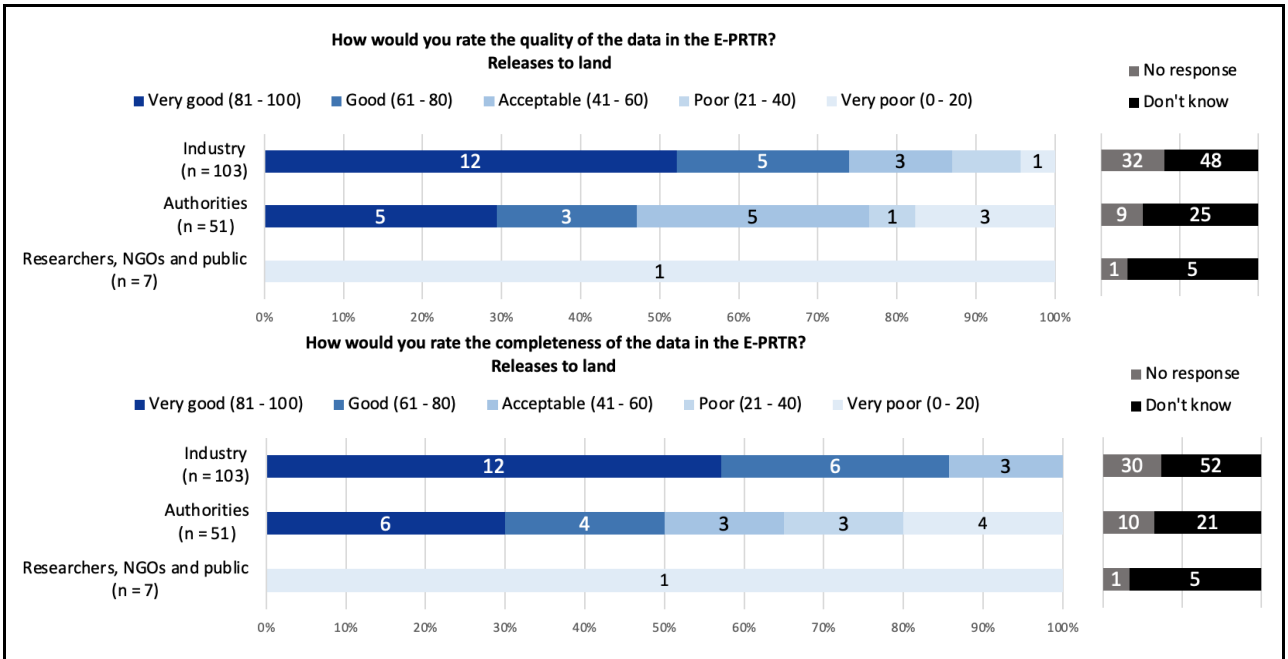


Figure A1-38: Q15& Q16 (III): How would you rate the quality and completeness of the data in the E-PRTR? Releases to land

Most of the industry stakeholders rated the quality and completeness of data on waste transfers as good or very good, with authorities scoring slightly lower. Just above quarter of authority respondents thought the completeness of the data was acceptable (Figure A1-39). Similarly to previous questions, only one respondent from the researchers, NGOs, and public group evaluated the data quality and completeness of waste transfers, with the rate of 'very poor'.

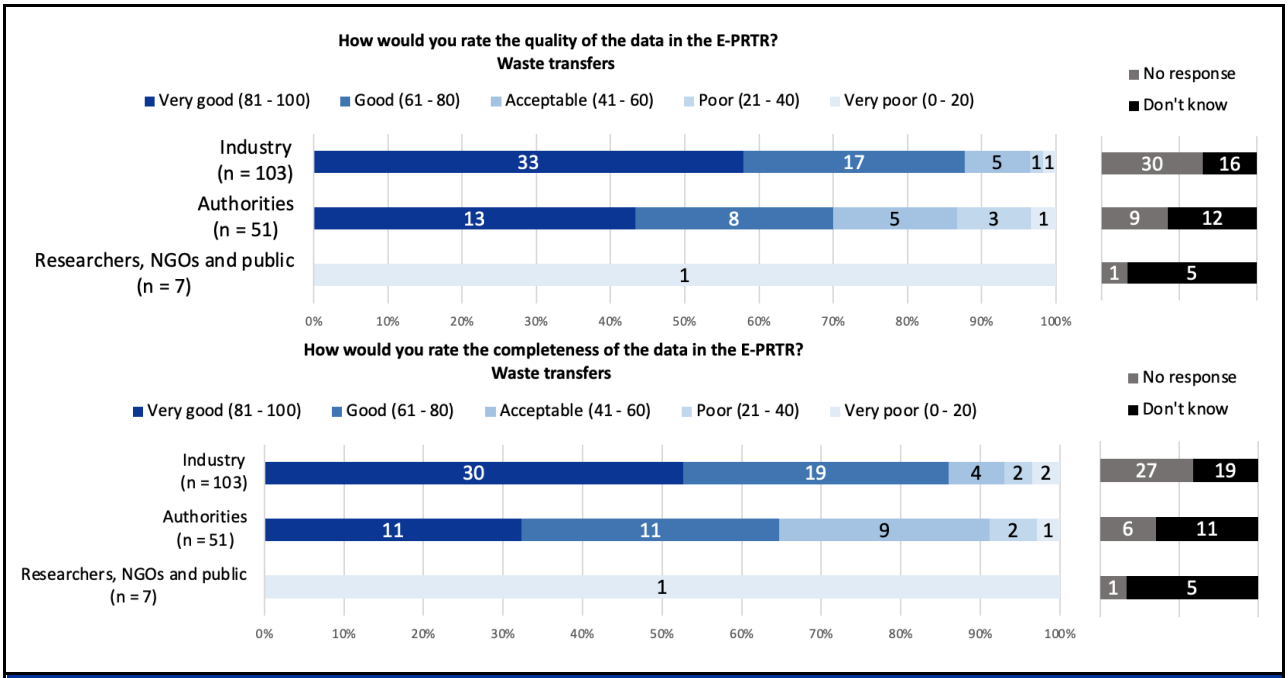
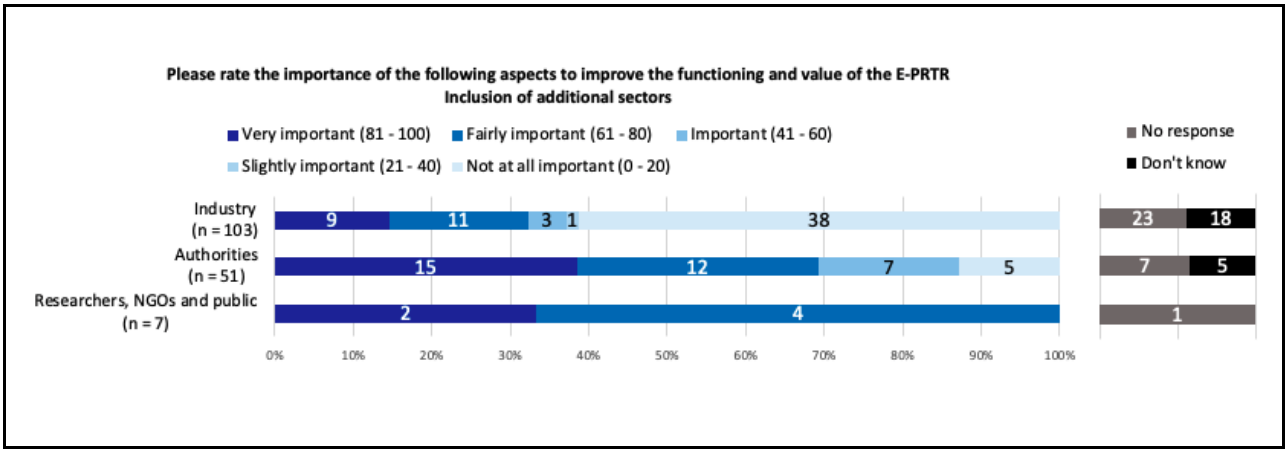


Figure A1-39: Q15& Q16 (IV): How would you rate the quality and completeness of the data in the E-PRTR? Waste transfer

All stakeholders also expressed their opinion on the importance of certain aspects to improve the functioning and value of the E-PRTR. It was observed that the industry stakeholders rated the importance mostly contrary to researchers, NGOs and the public. All respondents from the latter group thought that the inclusion of additional sectors was fairly or very important, whereas the majority of industry respondents thought that it was not at all important. Most of authority representatives rated the importance as important. Similar results were noted for lowering activity thresholds, although even more industry stakeholders thought it was not important at all. Researchers, NGOs, and public group rated the inclusion of additional pollutants as fairly or very important; however, the minority of the industry stakeholders thought the same. Over 80% of authority representatives thought it was important. Finally, removal/decrease of pollutant reporting thresholds was seen as not at all important by more than 60% of industry respondents, whereas the majority of respondents from the remaining groups rated it important (Figure A1-40).



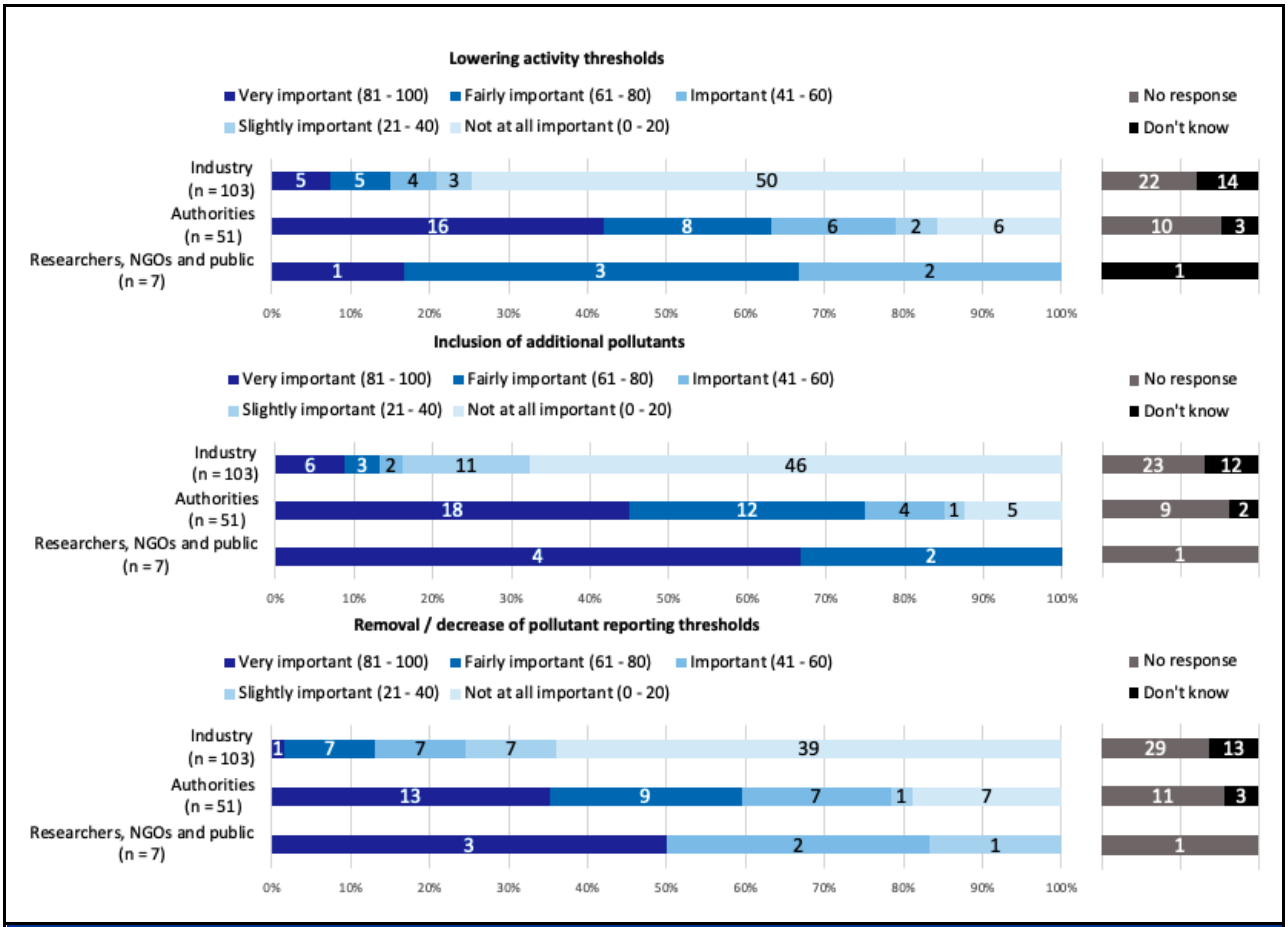


Figure A1-40: Q17(I): Please rate the importance of the following aspects to improve the functioning and value of the E-PRTR.

The stakeholders were also asked to rate the importance of other aspects, such as the availability of E-PRTR in languages other than English, availability of contextual information, and data comparability of E-PRTR with other PRTRs. Over 70% of industry stakeholders rated the importance of the availability of other languages as important; however, the researchers, NGOs and public group thought it was not important. On the other hand, over 60% of authority representatives indicated that it was important.

All respondents from the researchers, NGOs, and public group saw the availability of contextual information as important, whereas the majority of industry stakeholders thought the opposite. Most of authority representatives thought the availability of contextual information was important. Lastly, although the researchers, NGOs and public group did not think that data comparability was important, the majority of industry rated it fairly or very important. The authority respondents thought it was more important than not (Figure A1-41).

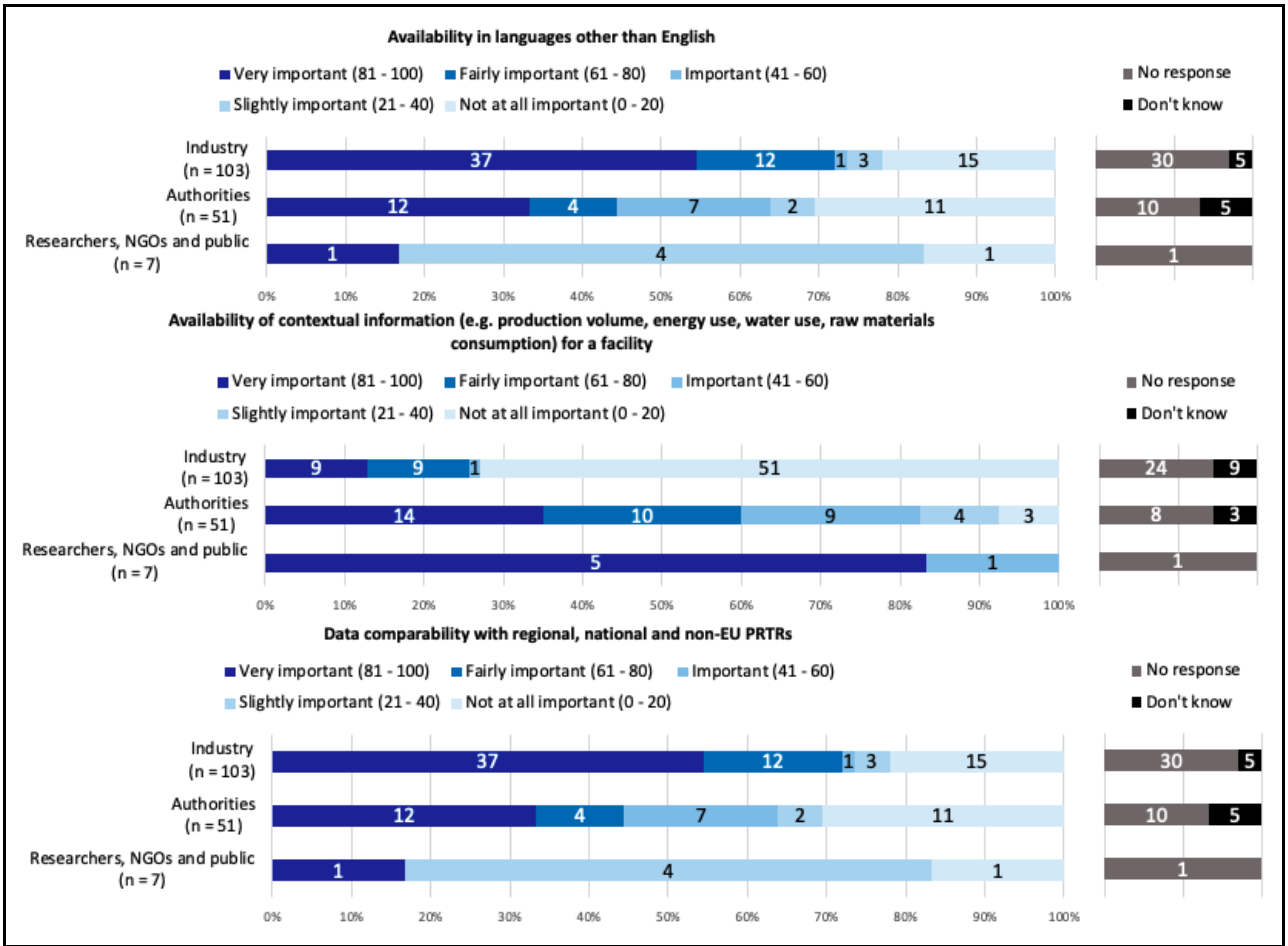


Figure A1-41: Q17(II): Please rate the importance of the following aspects to improve the functioning and value of the E-PRTR.

Below are the summary of other important aspects and comments from all stakeholder groups on the above topics.

There were only a few comments by researchers and NGOs on this topic. This group expressed frustration towards the limited set of pollutants that information is provided for in E-PRTR, with no information on chemicals used, which makes it difficult to assess the impact on human health or the environment. The need to harmonise the reporting of releases and transfers by the industry among EU countries has been highlighted, as well as the necessity for reporting parameters to be in line with, for example, air quality regulation. The group saw the need for inclusion of more sectors, however only if contextual information about emissions is added, such as performance against the EU Best Available Techniques (BATs). There was also a suggestion to remove reporting thresholds where monitoring requirement exists. One of the respondents commented:

> *"We see purpose of reporting and availability of information (e.g., via E-PRTR) needs to be able to fulfil various functions, many functions are currently not met. The objectives to be met: a) Improved transparency and access to environmental information, b) enable effective public participation in environmental decision-making, c) improve environmental performance & sustainable development (activities), d) Improve corporate accountability on environmental management (operators), e)*

Track and improve progress in pollution reduction and identifying "hot spots" for prevention measures and priorities for action. The current structure and design of the E-PRTR fails to deliver on many of those objectives, in particular objectives b-e) and to lesser extend objective a): Information is limited to a limited set of pollutants emissions and not inputs (resources, use of chemicals), outdated when reported and is given out of context."

The need for user-friendly access and for the information to be more visible and understandable for citizens has been expressed by respondents as well.

The consistency, harmonisation, and alignment of E-PRTR with other relevant legislation, especially the Industrial Emissions Directive (IED), has been seen as an important aspect by authorities' representatives in order to reduce the administrative burden and facilitate data comparison. Some respondents indicated that the lowering of the activity threshold might introduce an excessive admin burden on smaller operators, which should be taken into consideration. Currently, some sectors, such as combustions plants, only have to report CO2 emissions under the Medium Combustion Plant Directive (MCPD). Hence, lowering the threshold below 50MW to enable the capturing emissions from these plants has been suggested by one stakeholder. Special attention was given to plants above 20MW that are already within the scope of the EU Emissions Trading System (ETS). However, this should be done carefully due to different reporting deadlines for different capacity thresholds and existing/new plants until 2029, as defined in the MCPD, to avoid situations where an existing plant may need to report to E-PRTR while not required to register under MCPD yet.

The need to include additional pollutants in E-PRTR has been noted by few authority respondents. The inclusion of the following pollutants has been suggested by one stakeholder: priority substances regulated under Waste Frame Directive (WFD), persistent organic pollutants regulated under the Stockholm Convention/EU POPs regulation, pollutants where BAT-AELs are available in the BATs conclusions, pollutants where monitoring requirements are available in the BATs conclusions, formaldehyde, some metals (Mo, W, V, Tl), total volatile organic compounds (TVOC) together with non-methane volatile organic compounds (NMVOC) (TVOC should be included as a pollutant in the E-PRTR next to NMVOC to be in line with IED and BATs conclusions). In addition, clarification on PM10/dust and the inclusion of dust to Annex II of E-PRTR has been suggested. The stakeholder also saw the need in removing/decreasing reporting thresholds for pollutants such as heavy metals (HM) and POPs, and if BAT-AEL was available for the industrial sector, it was suggested that a pollutant should be reported without a polluting threshold. However, one respondent noted that the decisions on adding pollutants, or sectors, or altering thresholds should only be made in light of the facts and specific situations, and each such proposal should be evaluated and circulated for commentary. In addition, the benefits of expanding the scope of activities and pollutants should be balanced with the additional resources required to collect, assess, and report additional data. Several stakeholders also mentioned the need to remove irrelevant pollutants from E-PRTR.

Several authority stakeholders mentioned the importance of the inclusion of contextual information. One respondent commented:

"This is very relevant for wider analysis and data normalisation. However, we are aware of some resistance due to CBI. Again, for these normalisations typically a wide range of data is necessary and not just one aspect e.g., water use. It is difficult to have a good balance between what businesses are willing to disclose and what the general public has the right to access. A solution could be for some of this data to be disclosed to the EU/EEA but remain confidential for the wider

public. If this is a way forward, extensive analysis and confidentiality protection measures will be required to make sure competition is not jeopardised and also transparency and justice are still ensured.“

The inclusion of real-time monitoring data in E-PRTR was seen as an advantage if such monitoring would be required by IED in the future.

Many industry stakeholders noted the importance of aligning E-PRTR with other relevant EU regulations and harmonising E-PRTR sectors, thresholds, and activities with the IED. The inclusion of additional agro-industrial sectors or sectors that have no significant environmental impact was considered not necessary, but there were suggestions to include emissions from transport, domestic heating, maritime activities, air traffic, etc. One industrial stakeholder noted that the inclusion of additional pollutants should reflect a focused approach followed in the BREF-making process, and it would not be necessary to add pollutants that are not considered Key Environmental Issues (KEIs) under any existing BREFs. Same respondent suggested that the first two steps of the KEI identification process agreed in the IED Article 13 Forum (big on big/small on small) could be used as a basis to better target pollutants of relevance for the revised E-PRTR. One industrial stakeholder commented on the inclusion of additional pollutants:

“The monitoring/measurement and subsequent reporting of new pollutants would entail significant costs (e.g. additional work time, measurement costs, hiring of third-party laboratories, etc.). These undesired effects could be mitigated by ensuring that truly relevant pollutants are reported in the E-PRTR. Therefore, the inclusion of additional pollutants or the decrease of existing reporting thresholds should follow a robust approach and should assess each pollutant individually and based on sound science and coherent / robust data enabling to assess the environmental relevance of (air, water, soil) pollution caused by the activity concerned (i.e. whether it may cause an environmental problem). A clear process with clear and precise criteria and the contributions of the different stakeholders should be used in this assessment. Such a systematic process would contribute to better target pollutants of relevance for the E-PRTR.”

In addition, few respondents from the industry noted that it was essential to focus on key pollutants due to the tremendous amount of time and resources that reporting and checking the data entails. Any additional reporting requirements or changes to the system were seen as another burden for the industry because it would lead to additional workload and costs, which may have a particularly significant impact on small and medium-sized companies. One stakeholder highlighted that the list of pollutants on E-PRTR needs to be reviewed and assessed to remove pollutants that are not relevant anymore, banned, no longer used, or used in negligible quantities. It was also emphasised that E-PRTR should be dynamic and integrate emerging substances of concern if EU analysis standards are available. In addition, it was suggested that a decrease of reporting thresholds should be assessed to ensure consistency across a family of substances, such as PAHs, and to integrate the weight of a substance against the toxic-free environment objective and the climate mitigation goals.

Comparability of data with regional, national, and non-EU PRTRs was considered important by many industry stakeholders to ensure consistency and robustness of data across PRTRs because currently, comparability with other Member States is almost impossible due to lack of standardisation of data. A common procedure that prioritises data sources, the use of the same emission factors for PRTR and similar were suggested. The inclusion of contextual information, if not directly environmental in nature, was not preferred by many industry stakeholders because the E-PRTR register is not performance but a pollution register. In addition, many stakeholders were concerned about the disclosure of business-critical

information, such as production volumes, water, or energy use, as the reporting of such data may fall under rules protecting the disclosure of confidential business information (CBI) or competition law. The inclusion of additional languages was considered a tool to increase the access to E-PRTR to a wider public.

A1.2.6 Problem 1: Activities and activity thresholds

If included (see preceding question), what would be appropriate E-PRTR activity thresholds for the following activities? Please suggest threshold value, unit of measure and provide supporting information.

CO2 capture and storage installations

The inclusion of CO2 capture and storage activities to the scope of the E-PRTR was considered important by the majority of stakeholders (Figure A1-42). However, authority respondents thought it was very difficult to set a threshold for this activity as these are currently still experimental. It was suggested that the thresholds should be considered in the revision of the IED. Few authority representatives suggested no threshold at all in harmonisation with the IED. The majority of the industry stakeholders supported having a threshold.

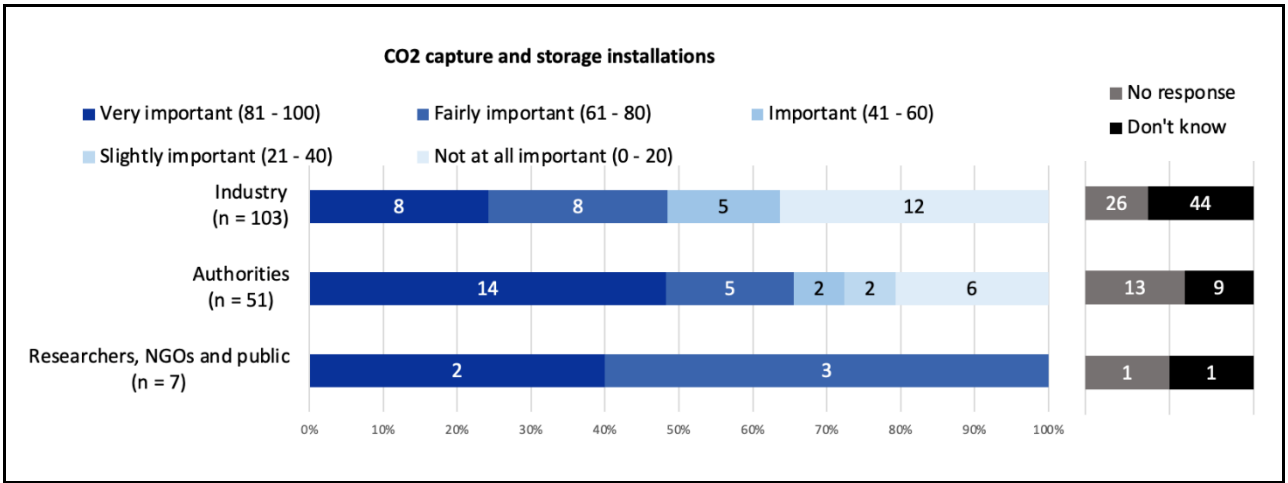


Figure A1-42: Q18(I): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Metal working activities

Half of respondents from the industry and almost 60% from the authority thought it was important to include metal working activities in the scope of the E-PRTR, whereas researchers and NGOs thought it was very important (Figure A1-43). The respondents did not suggest any thresholds.

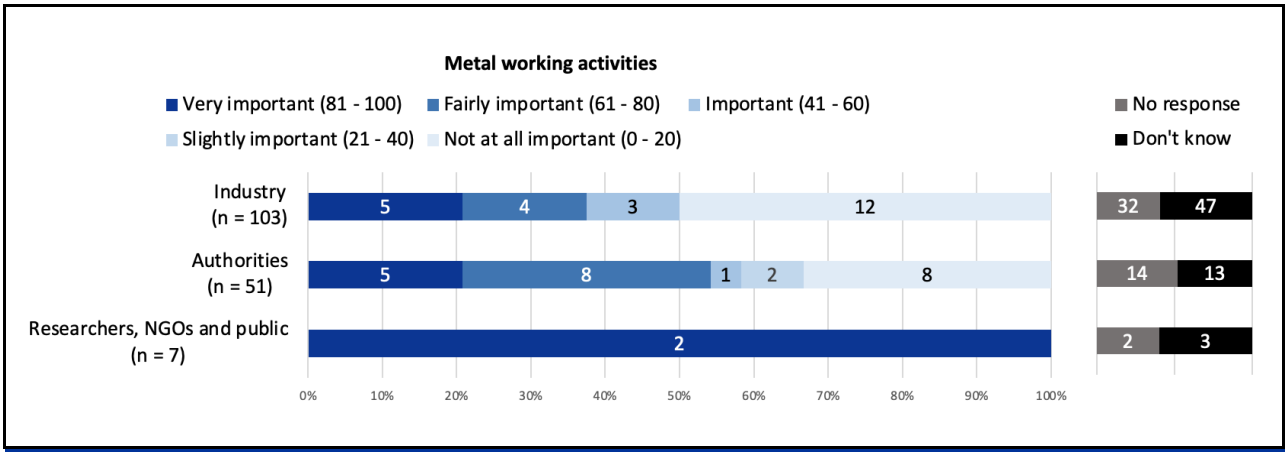


Figure A1-43: Q18(II): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Upstream oil and gas industries

The majority of respondents considered the inclusion of upstream oil and gas industries in the scope of the E-PRTR important (Figure A1-44). There were several suggestions on thresholds and units by the authority respondents. Few proposed to use the same thresholds as for IED, and there was also a suggestion on a threshold of 500 tonnes/day for oil extraction and 500,000 cubic meters/day for gas. Proposed units were tons or kilos of oil/gas produced, kg per year, and wells drilled per year. The industry respondents supported reporting thresholds.

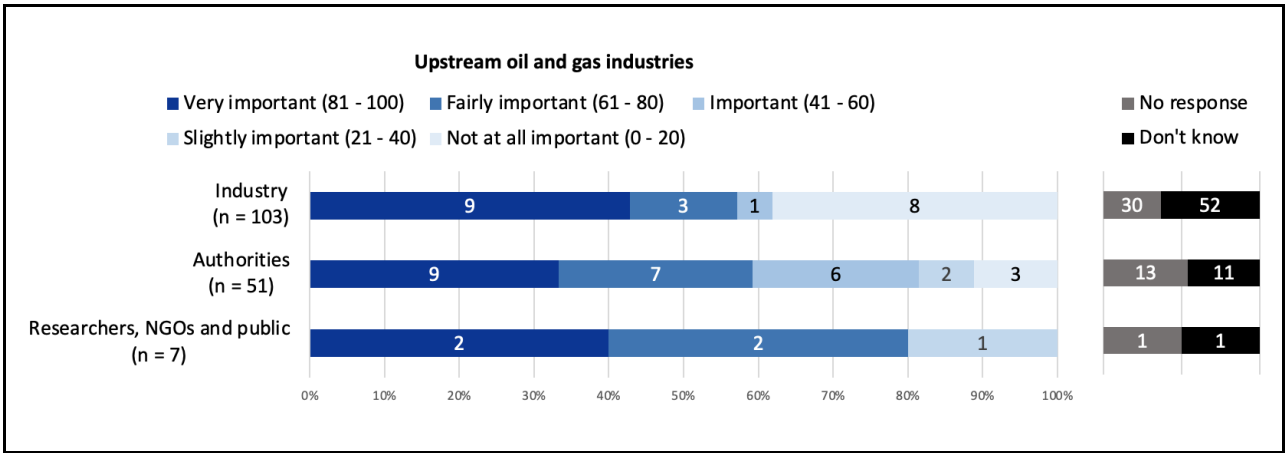


Figure A1-44: Q18(III): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Battery production and recovery

The majority of all respondents considered the inclusion of battery production and recovery to the scope of the E-PRTR important, although slightly more than 40% of the industry stakeholders thought it was not important (Figure A1-45). The proposed thresholds by the authority and the industry respondents were 20 tonnes of batteries per day and 10 tonnes of batteries per day, respectively. There was also a suggestion to use the same as the possible IED threshold.

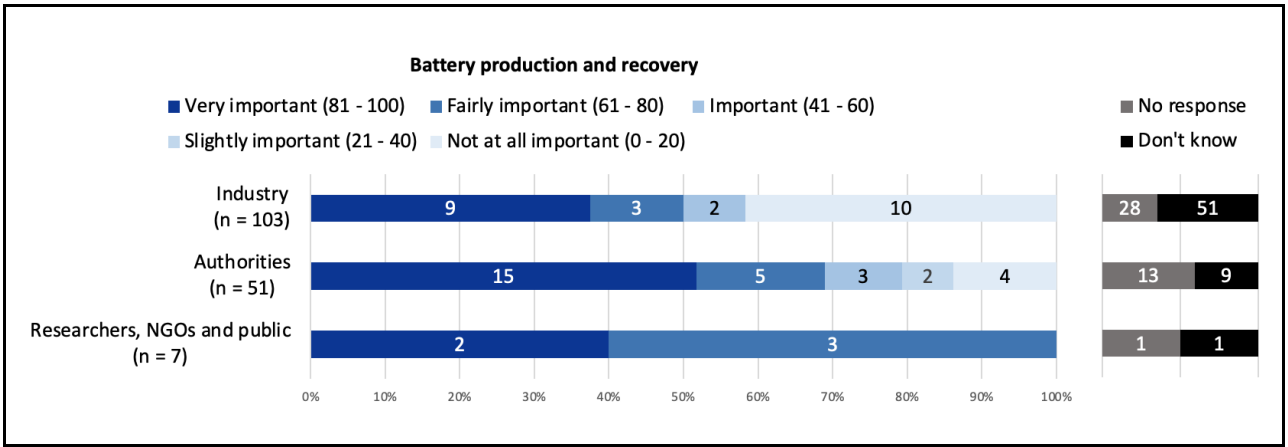


Figure A1-45: Q18(IV): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Downstream ferrous processing activities

Most researchers, NGOs and authority respondents thought the inclusion of downstream ferrous processing activities to the scope of the E-PRTR was important, whereas more than half of respondents from the industry considered it not important at all (Figure A1-46). Few authority representatives proposed to use the same thresholds as for IED. Suggested units of measure were daily/hourly capacity, tonnes produced per year, kg per year, and MWe.

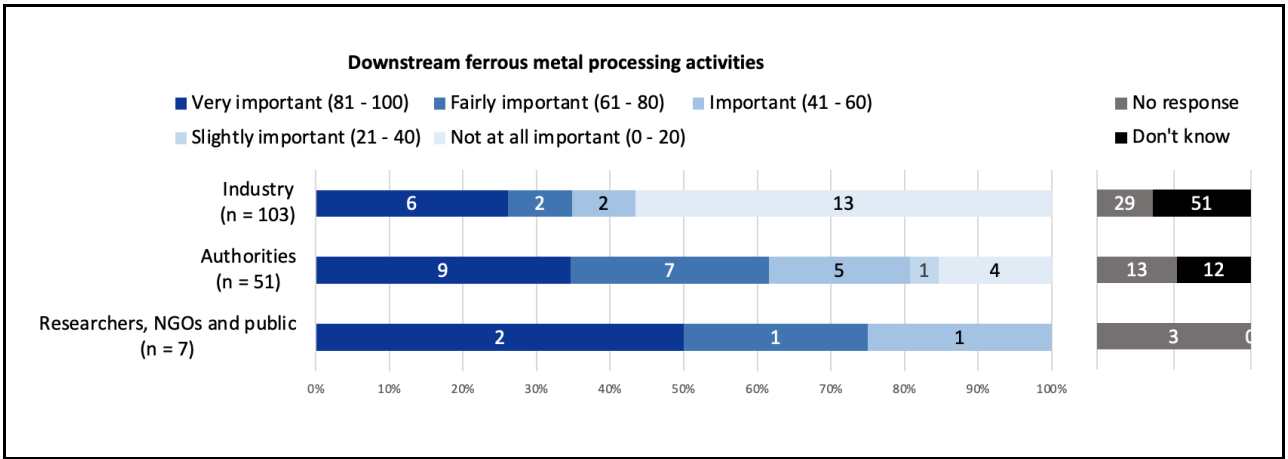


Figure A1-46: Q18(IV): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Ship dismantling

The inclusion of ship dismantling activities to the scope of the E-PRTR was considered important by the majority of respondents (Figure A1-47). The authority and industry representatives had a number of threshold and unit suggestions, such as a number of dismantled ships per year, dismantling capacity for ships over 100 meters long, 75,000 tonnes per year, 20,000 light displacement tonnes, or the same as the possible IED threshold.

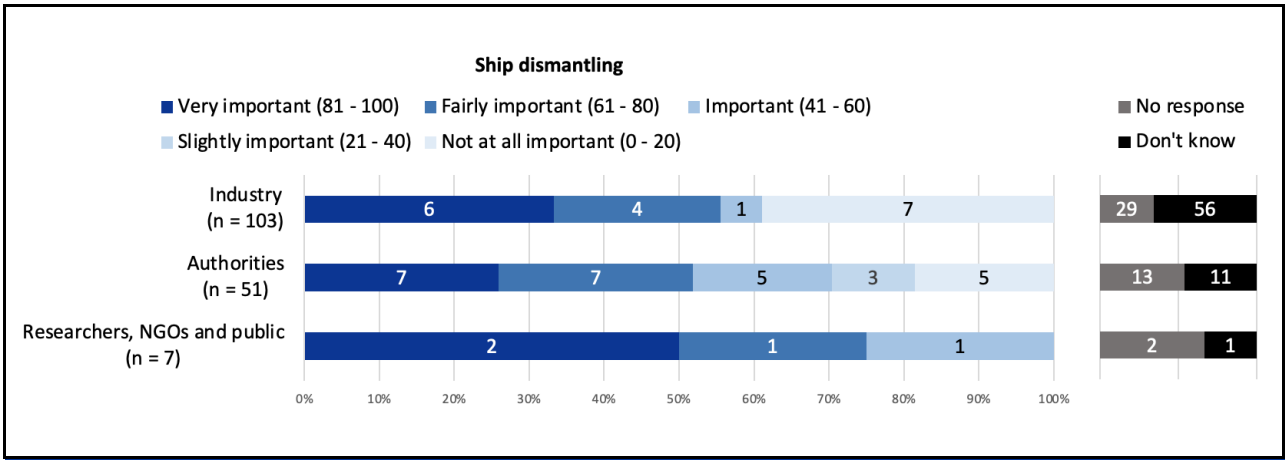


Figure A1-47: Q18(IV): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Intensive cattle farms

The majority of respondents considered the inclusion of intensive cattle farms to the scope of the E-PRTR fairly or very important (Figure A1-48). There were several suggestions for a threshold, which varied from 40 to 500 animals per farm, with several suggestions from authority representatives to use the same threshold as for the IED. One of the authority respondents argued that it would be more efficient to set a measure by the area rather than by exploitation for air emissions in order to englobe emissions from animals in yards. There was also a suggestion to use number/heads of dairy cows or other cattle (as livestock units) corresponding to the environmental impacts of that number of dairy cows.

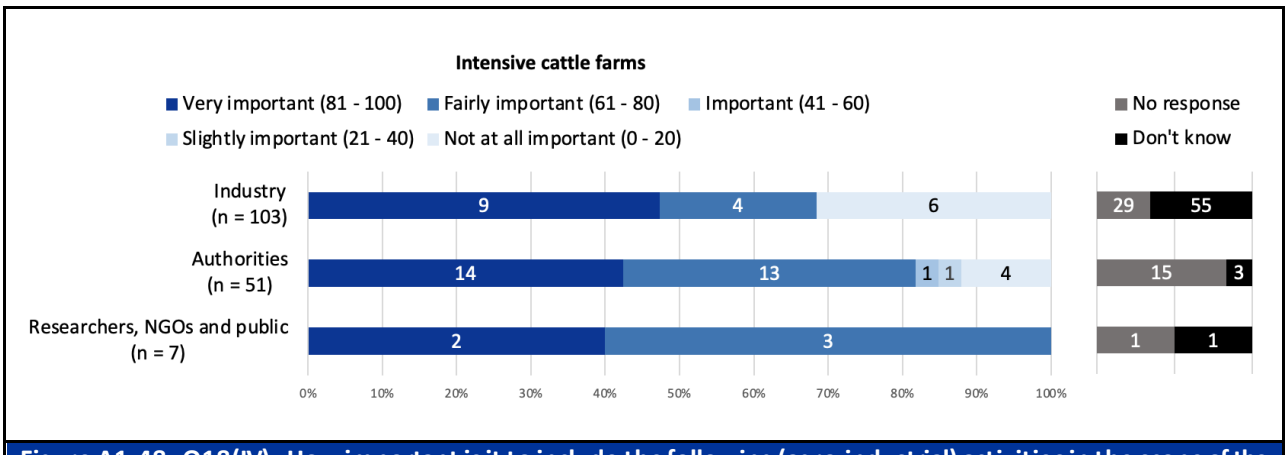


Figure A1-48: Q18(IV): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Intensive mixed livestock farms

The inclusion of intensive mixed livestock farms to the scope of the E-PRTR was considered fairly or very important by all respondents (Figure A1-49). The suggested thresholds varied from 40 to 20,000 animals per farm, with one proposal to use the sum of livestock units corresponding to the environmental impact of 2000 fattening pigs or the same as the possible IED threshold.

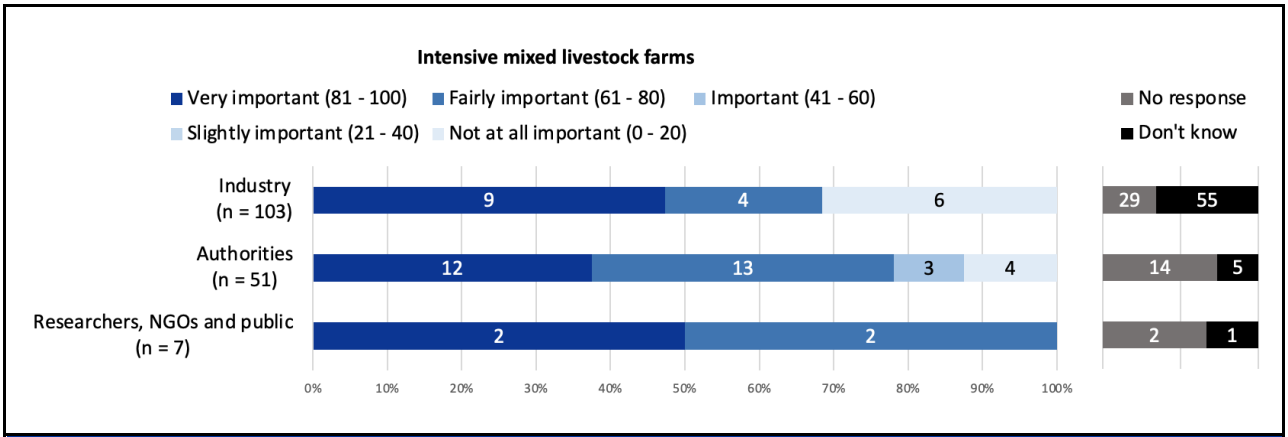


Figure A1-49: Q18(IV): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Intensive horticulture

Most of respondents considered the inclusion of intensive horticulture to the scope of the E-PRTR important (Figure A1-50). There were two types of thresholds suggested: by weight (e.g., tonnes or kilograms of products per year) or by surface area (e.g., m2 of roof area of greenhouses).

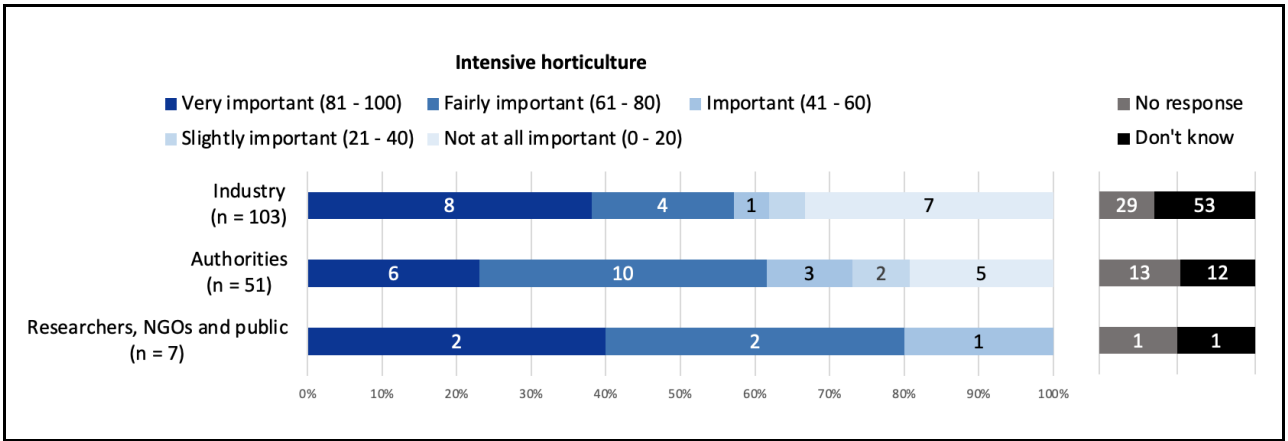


Figure A1-50: Q18(IV): How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

Alignment of E-PRTR and IED categorisations

Participants in the survey were asked the question about the importance of aligning the E-PRTR and the IED categorisations (Q20. For the following activities, how important is it to align the E-PRTR and the IED categorisations?). The majority of respondents from all groups of stakeholders considered the alignment important (see Figures A1-51 to A1-59). A large majority of researchers, NGOs and authority stakeholders indicated that aligning E-PRTR and IED activity categorisations would facilitate their work, whereas the majority of industry respondents thought that it would make no difference on their current tasks related to the pollutant register (Figure A1-60).

Some authority stakeholders thought that it was very important for the activity categorisations in the IED and the E-PRTR to be identical because differences in the categorisation create an extra administrative burden for plants, authorities, and national checks and can generate errors and mistakes. Authority respondents also believed that aligning the E-PRTR with the IED would allow assessing the influence of the IED on emissions reduction. Overall, the alignment was seen as an opportunity to facilitate data collection and reporting and increase coherency in the environmental control activity and quality of the data. However, although the majority of industry respondents noted that the alignment would facilitate the work of the operators and ensure more transparency, few stakeholders argued that it would change work procedures and create additional burden and costs for the industry, which may be disproportionate to the expected environmental benefit. Hence, the alignment could only be required when there is an interest to inform the public about the environmental impact of an activity.

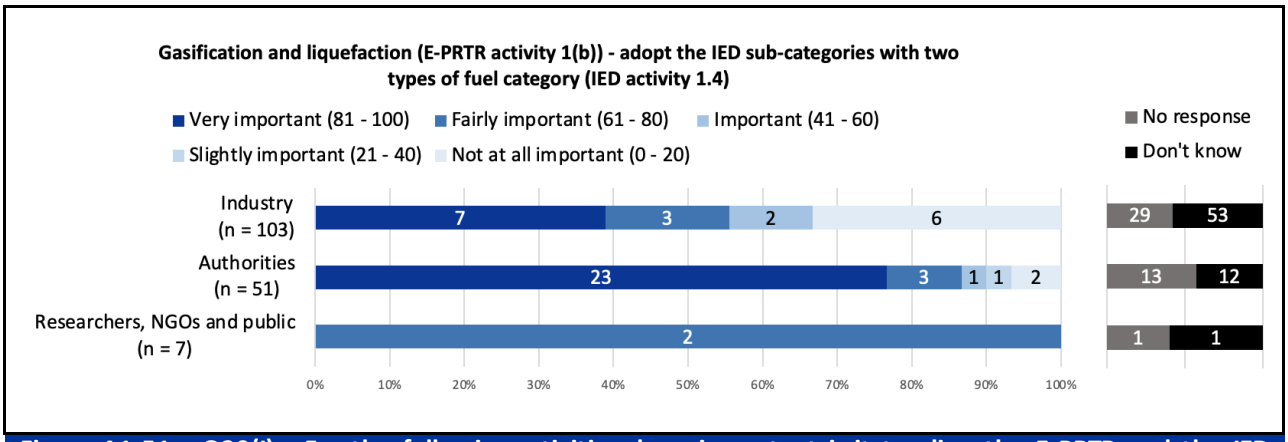


Figure A1-51: Q20(I): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

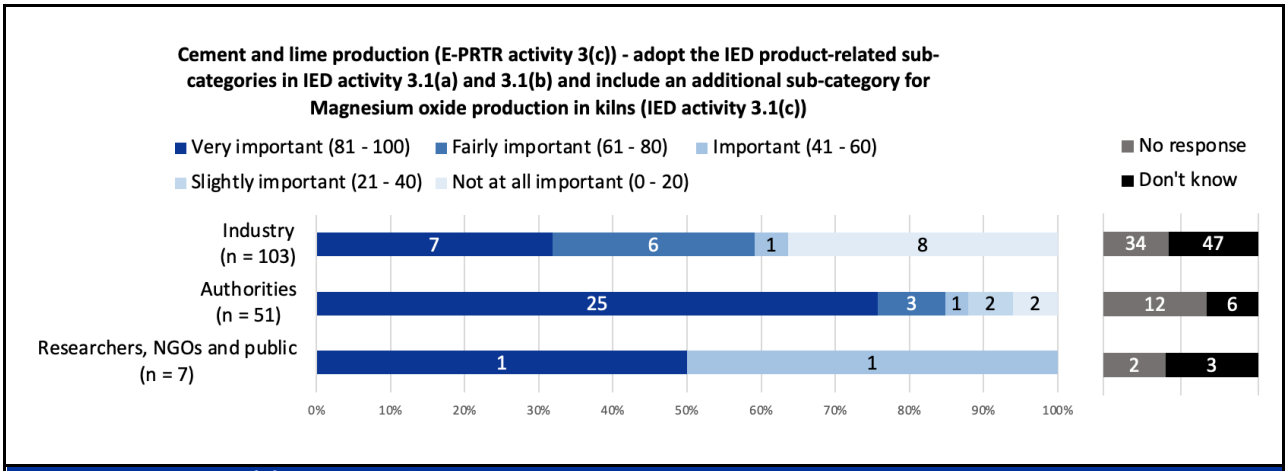


Figure A1-52: Q20(II): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

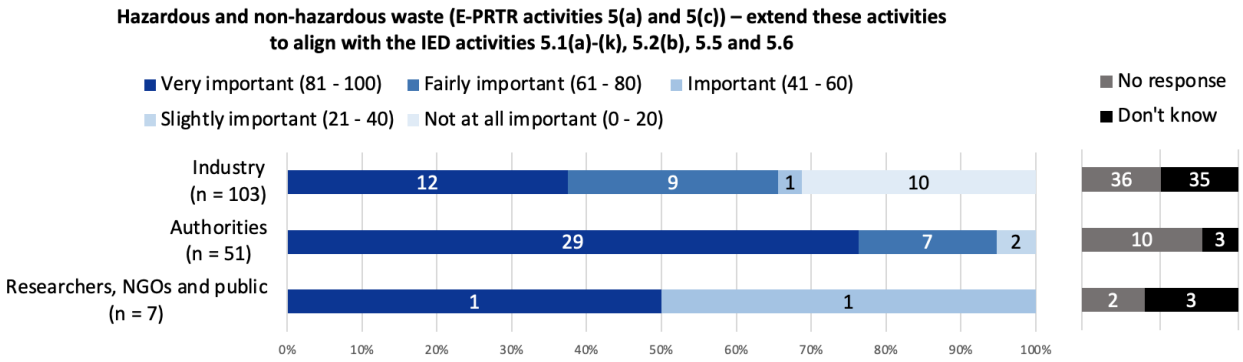


Figure A1-53: Q20(III): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

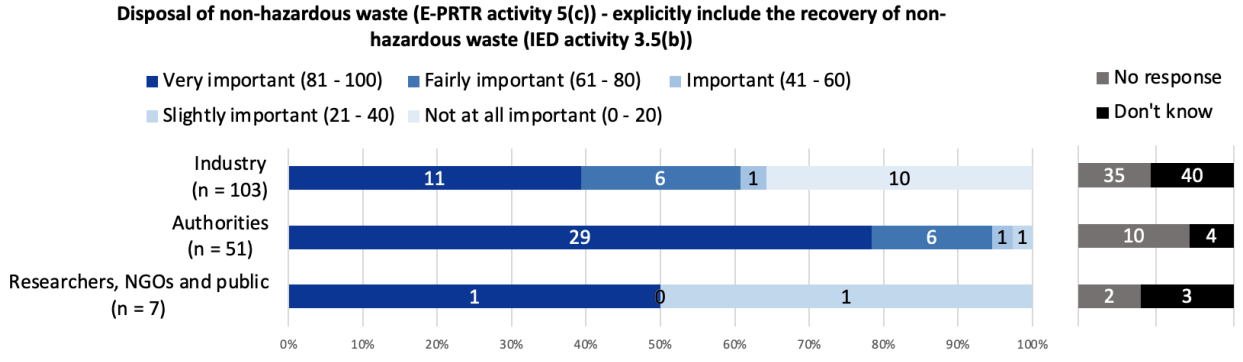


Figure A1-54: Q20(IV): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

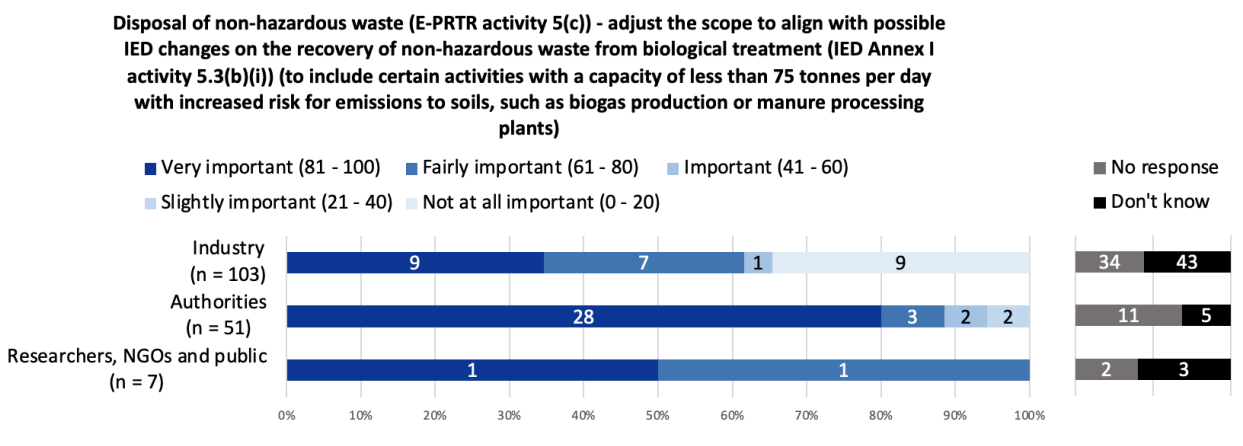


Figure A1-55: Q20(V): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

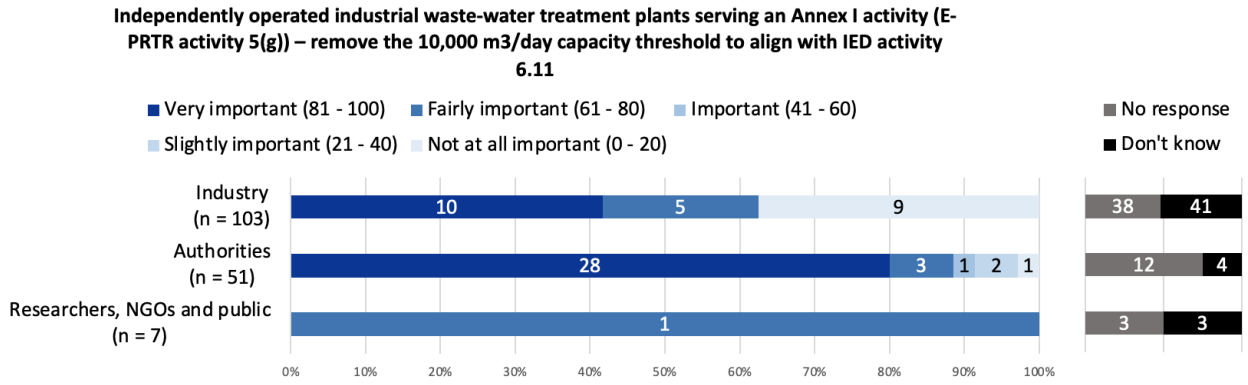


Figure A1-56: Q20(VI): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

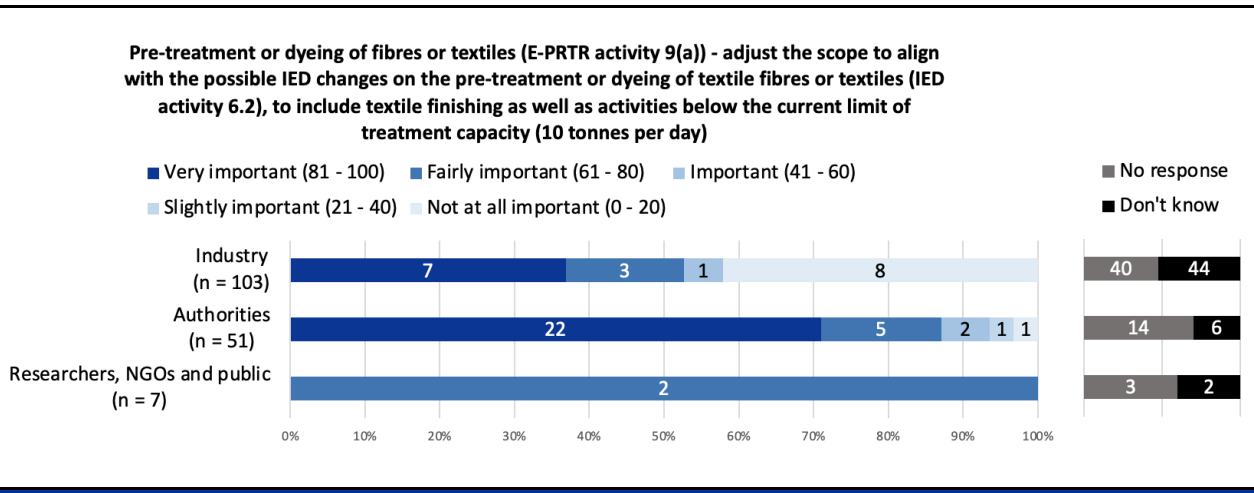


Figure A1-57: Q20(VII): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

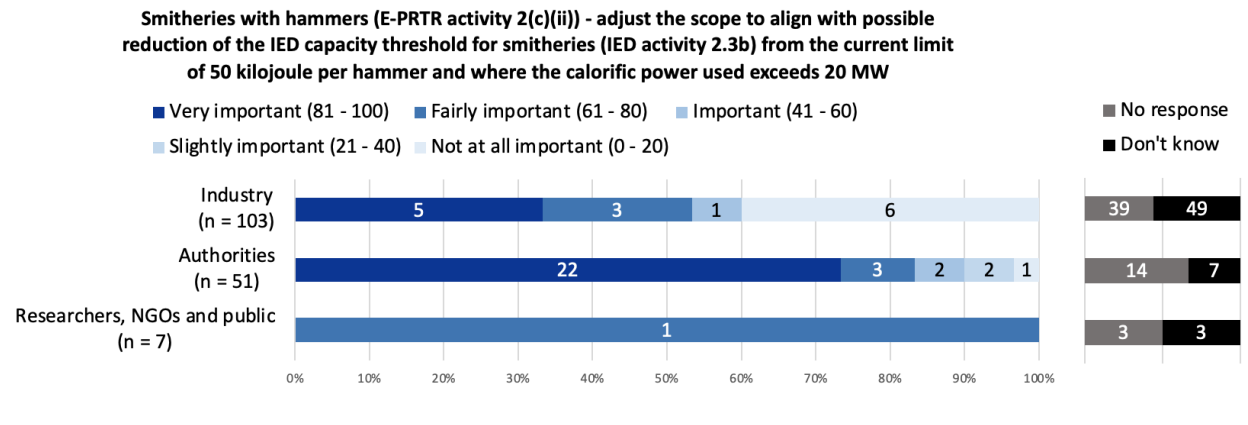


Figure A1-58: Q20(VIII): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

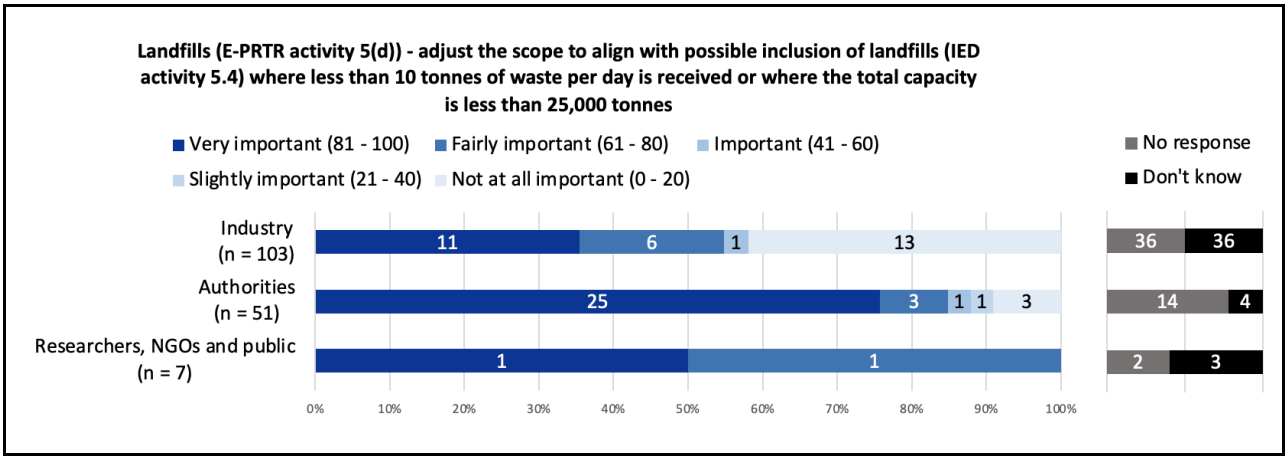


Figure A1-59: Q20(IX): For the following activities, how important is it to align the E-PRTR and the IED categorisations?

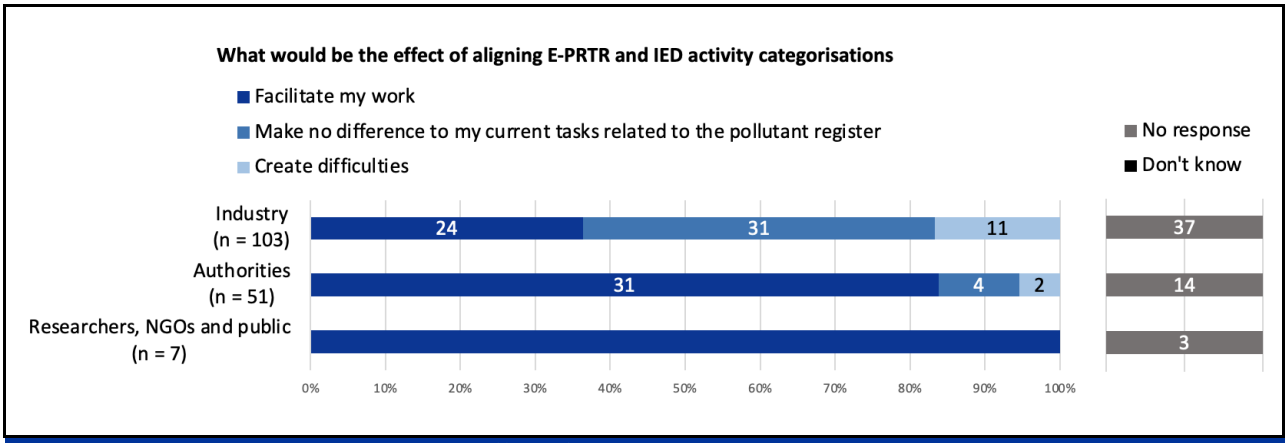


Figure A1-60: Q21: What would be the effect of aligning E-PRTR and IED activity categorisations as described in the preceding question?

Most of the respondents considered clarifying the definition of landfill releases by adding to activity 5(d) the words 'including flaring of vent gas' important (Figure A1-61). The industry stakeholder noted that flaring in the case of operating a chemical plant is not an abatement technique, but rather an emergency device, therefore should be handled as this.

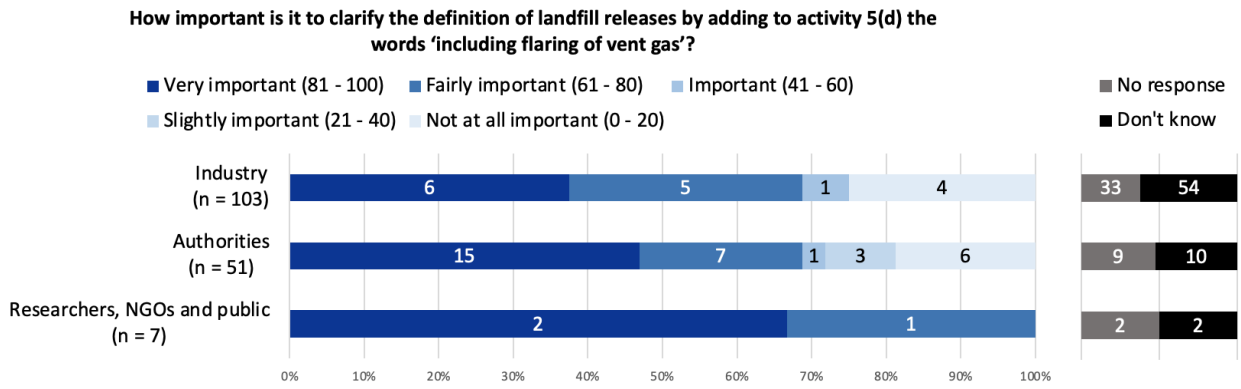
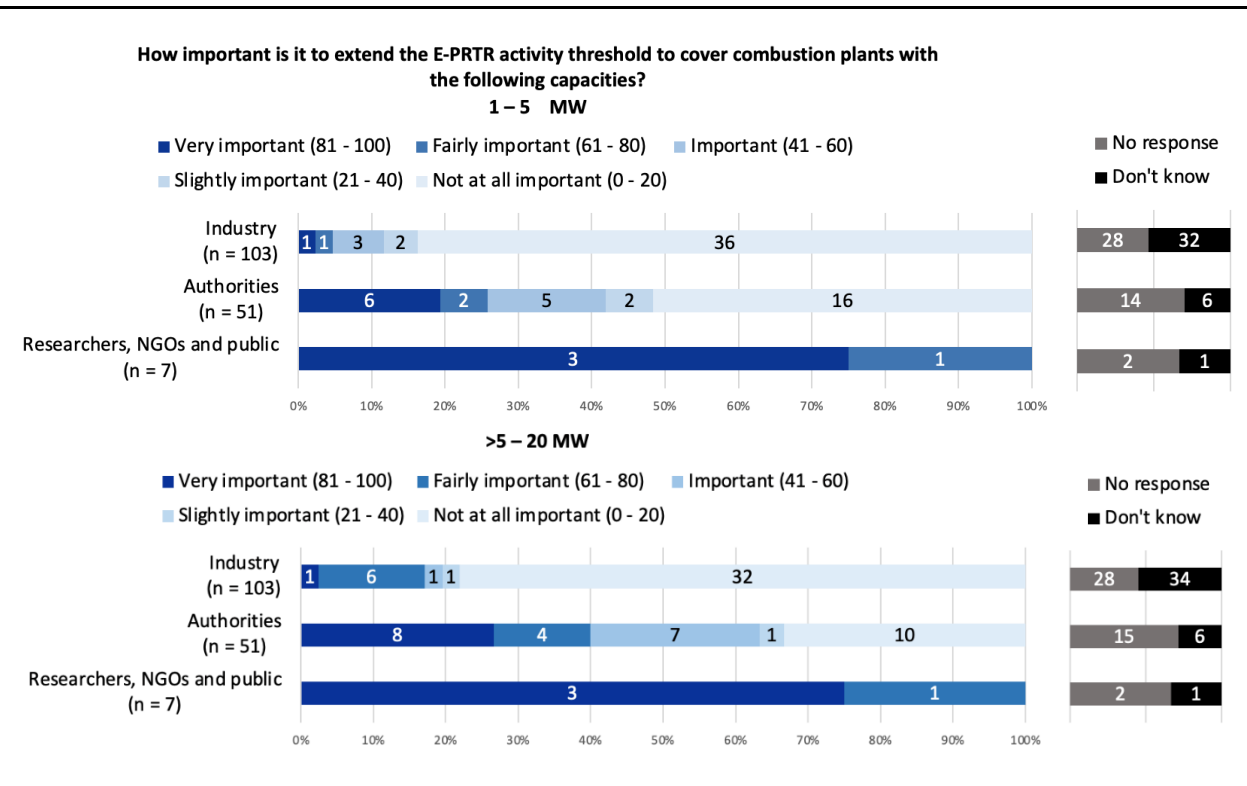


Figure A1-61: Q22: How important is it to clarify the definition of landfill releases by adding to activity 5(d) the words 'including flaring of vent gas'?

Regarding the extension of the activity threshold to cover combustion plants with the capacity of 1-5 MW, >5-20 MW, and >20-50 MW, the majority of the industry stakeholders thought it was not important at all. It was noted by the industry stakeholder that lowering reporting thresholds would mean that a high amount of plants would have to report for the first time, which would require monitoring and reporting systems to be installed and additional personnel to be employed due to higher workload and administrative burden. Although the authority representatives considered the extension of the threshold to plants with the capacity of 1-5 MW not important, the majority indicated that the extension of the threshold to >5-20 MW and >20-50 MW plants was important. All respondents in the researchers and NGOs group considered it important for all capacities (Figure A1-62).



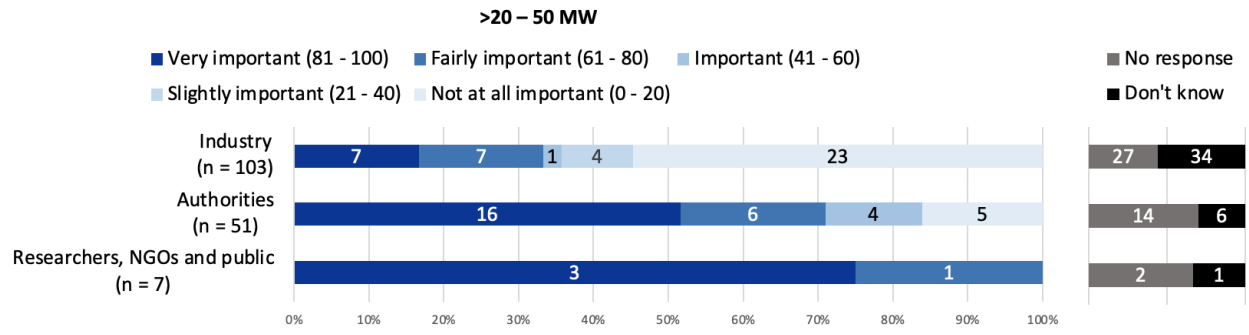


Figure A1-62: Q23: How important is it to extend the E-PRTR activity threshold to cover combustion plants with the following capacities?

When asked about lowering the existing threshold for UWWTP treatment capacities from 100,000 p.e. to 1000 p.e., 2000 p.e., 5000 p.e., 10,000 p.e., and 50,000 p.e., most of the industry respondents did not think it was important, whereas researchers and NGOs considered it important for all options. According to them, the population equivalent should not be the only factor determining the inclusion in the E-PRTR, and all wastewater streams carrying pollutants of concern and flow rates that warrant a particular concern should be covered by the register. The majority of authority representatives thought that lowering the threshold was important for 10,000 and 50,000 p.e. plants, not as important for 5,000 and 2,000 p.e. plants, and not at all important for 1000 p.e. wastewater treatment plants (Figure A1-63). There was a suggestion to consider basing UWWTP reporting thresholds on actual wastewater load to the plant rather than the capacity of the plant. Lowering the threshold to 10,000 p.e. was considered relevant by several authority stakeholders, especially for nitrogen and phosphorus. It was also noted that for reasons of coherence with the Urban Wastewater Treatment Directive (UWWTD) and practicability, both reporting obligations should be streamlined. Similarly, the industry stakeholders suggested aligning the thresholds with the UWWTD and the Water Treatment Directive (WFD). In addition, lowering the threshold to 10,000 p.e. was supported by some industry stakeholders. One of the stakeholders commented:

> *"We support a threshold in the order of 10,000 p.e, that UWWTP are significant contributors to emissions and thresholds should be lowered for such plants in order to get cleaner and more complete picture of the emissions to water. Should be set after careful assessment of pros and cons, and on the condition that the data will be reliable. The aim is to capture more emissions in the register without causing too much additional administrative burden."*

The respondent from the industry also suggested for monitoring to be located and carried out on the industrial wastewater of each producer, depending on the type of the industry, capacity, and technologies used in manufacturing.

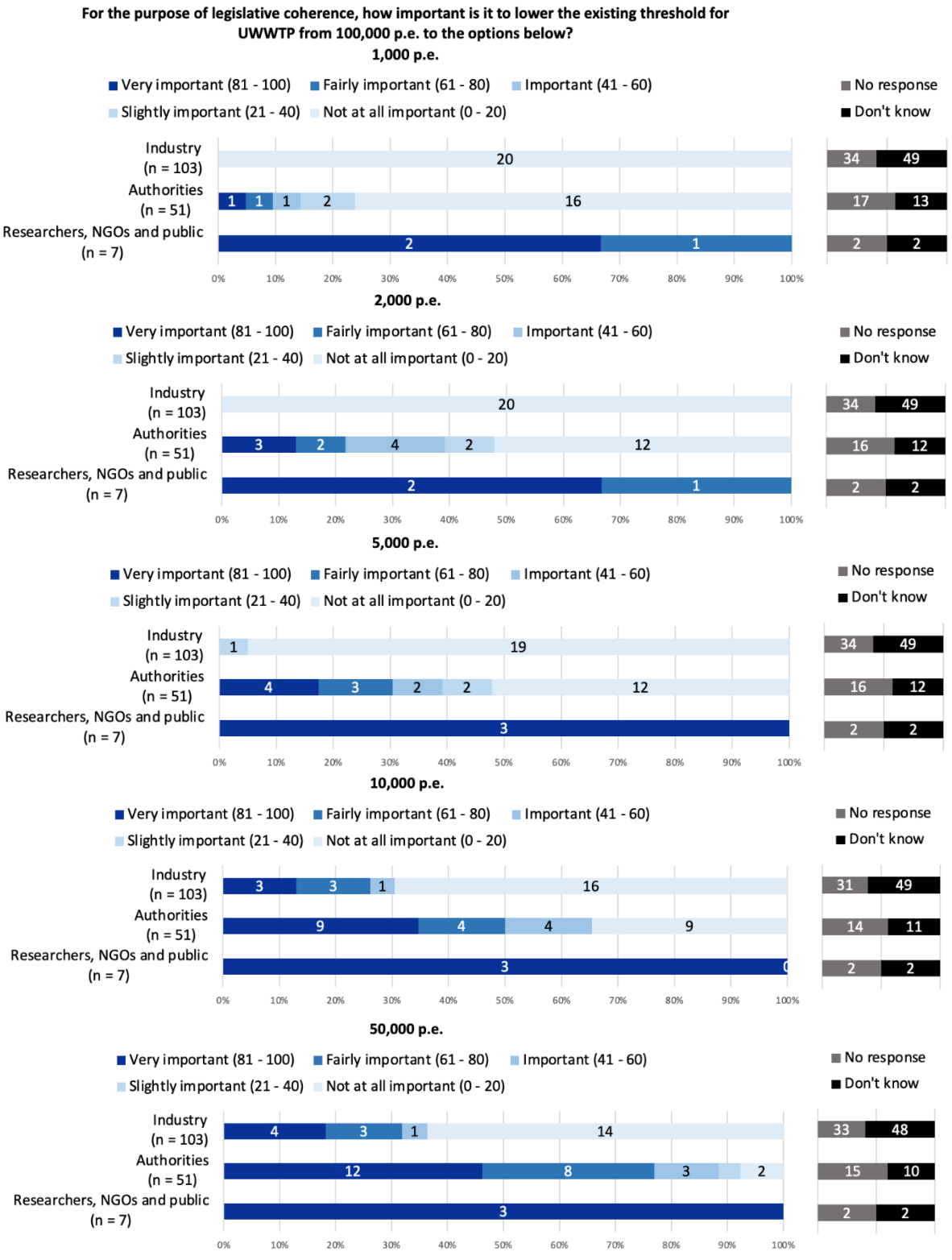


Figure A1-63: Q24: For the purpose of legislative coherence, how important is it to lower the existing threshold for UWWTP from 100,000 p.e. to the options below?

The inclusion of metal working activities was considered important by half of the industry and authority respondents. It was considered very important by researchers and NGOs (Figure A1-64).

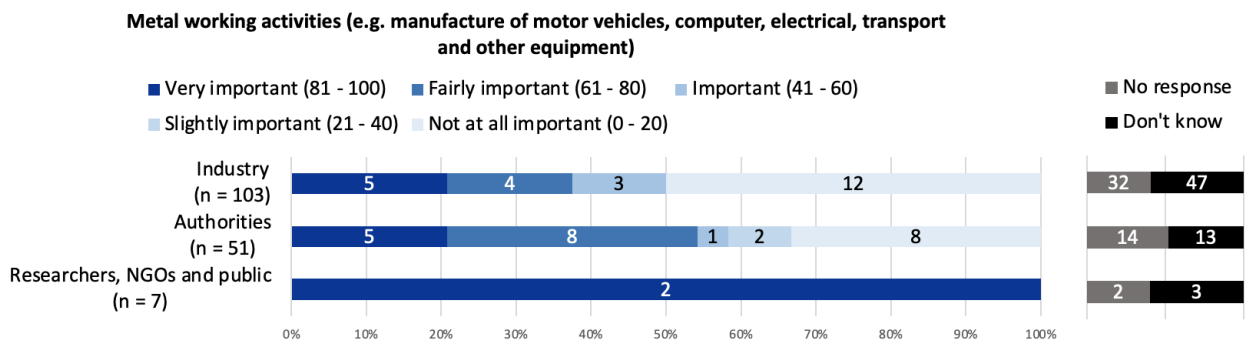


Figure A1-64: Q25: How important is it to include the following industrial activities in the scope of the E-PRTR Regulation?

Addition of activities with major environmental pressures in the EU and currently outside the scope of the E-PRTR

Stakeholders were asked if they were aware of any other (agro-)industrial activities with major environmental pressures in the EU and currently outside the scope of the E-PRTR. Most industry and authority respondents were not aware of any additional activities (Figure A1-65). Two out of three researchers and NGOs were aware of such activities. They suggested that diffuse emissions should be included in the register. The authority stakeholders noted that there were several activities that were out of scope but important for the environment. One respondent commented:

> *"**Emissions to air:** 1. Naphthalene refining for producing naphthalene crystals, beads and powder: crude naphthalene, delivered in liquid form is distilled in a continuous process to be purified up to 99,98%. It is then crystallized on a cooled conveyor belt before being crushed and packaged. This process does not fall under the IED because it involves only physical processing. This process, when it is not integrated in the petroleum refining plant or coal tar refining plant that is producing the crude naphthalene, can cause significant emissions of naphthalene to air <…> Naphthalene is classified as H351, suspected of causing cancer. 2. Production of polymer foam by using a physical blowing agent: foam processing deals with the application and subsequent discharge of organic compounds as blowing agents for creating plastic foams. These blowing agents need to be liquids characterized by a low boiling point. By either sudden increment of temperature or decrease in pressure, the liquid evaporates and helps create the foam, without actually taking part in the reaction. In physical foam extrusion, a gas supply is integrated to the extruder. The polymer pellets supplied from the hopper into the barrel are melted under high pressure with blowing agent. As the polymer exits from the die, foam cells are generated by the sudden pressure drop. The final step is cooling, calibration, and cutting of the extruded foam. Emissions result from the release of these blowing agents during foaming, or from the subsequent long-term release over several years. Except for polyurethane foam processing where a chemical reaction occurs between an isocyanate and polyol and which falls under the scope of the IED (category 4.1.h), polymer foam processing only involves physical processing and is not covered by IED … **Emissions to water**: 1) Naphthalene refinery (same as air emissions) 2) Production of polymers, plastics and derivatives without chemical reaction*

(production of coloured plastic pellets, of plastic caps, of communication cables, extrusion of plastics. Only the industry of plastic production with chemical reaction is already included in the IED Directive <…> 3) Industrial laundry: this industrial sector is required to use highly toxic substances for instance for the laundry of hospital linen. It is responsible for water releases of harmful compounds (organo-chlorine and organo-bromide compounds, phthalates) to the environment. In case of indirect water releases, those may even affect the biology of the downstream WWTP."

Other respondents from the authority mentioned biogas plants (digesters), emissions from applying animal manure on agricultural soils, the storage of digestate and the application of digestate on agricultural soils. These account for more than half of the total pollutant releases from industrial agriculture and biogas installations and defining these economic activities according to the E-PRTR and not as a transfer of non-hazardous waste would close a gap in the E-PRTR reporting on specific pollutants and would allow monitoring of substances that account for huge environmental pressures. The pharmaceutical coating, high VOC emissions and olive oil extracting activities were also mentioned.

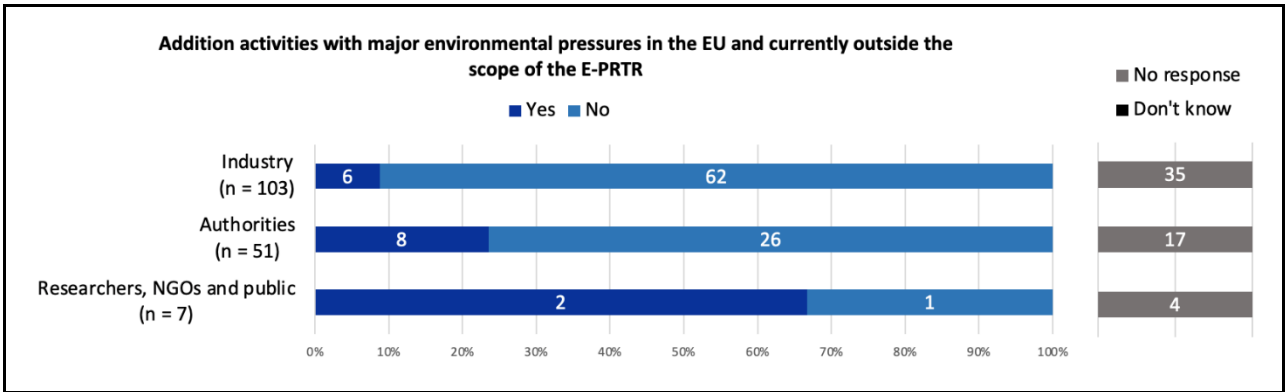


Figure A1-65: Q26: In addition to the activities mentioned in the preceding eight questions, are you aware of other (agro-)industrial activities with major environmental pressures in the EU and currently outside the scope of the E-PRTR?

Additional burden

The industry stakeholders were asked about the additional burden if all suggested changes in the preceding questions were implemented (Q27. If all changes suggested in the preceding questions were to be implemented, how would the revision of the scope of the E-PRTR Regulation with regard to activities and activity thresholds affect the time you spend on reporting information to your competent authority? Please indicate the number of additional person-days). Almost all respondents noted that companies would have to spend additional resources and increase reporting efforts, which can be problematic for small and medium-sized plants/companies. The reporting was considered 'very time consuming' already, so the requirement to report on additional parameters and substances would lead to more data and more time spent on gathering, assessing, compiling, and reporting it. The reporting of data as such was not considered time-consuming but rather the preceding steps for data collection.

There were several considerations on the number of additional person-days required to cover the increase in time spent on reporting. Some respondents noted that the number of person-days could significantly rise up or even double. Few industry stakeholders gave more precise estimations; for instance, one stakeholder indicated that at least 1/2 full-time employee for two years would be required for a plant that is already reporting, and at least 1/2 full-time employee for four years for a plant that has never reported

before. Another stakeholder estimated that one person-day would be required to cover the increase in time. For larger chemical sites, this could increase by several man-weeks according to one stakeholder, although another stakeholder from the chemicals industry thought it could be 10-15 person-days. Nevertheless, several stakeholders thought that the changes might not have a significant impact as long as the reporting does not change, and one stakeholder even suggested that if the reporting thresholds were made consistent with the IED, it might take slightly less time to report. The stakeholder from the steel industry indicated that any changes of the scope of the E-PRTR would not significantly affect time spent on the reporting of data. However, it may affect downstream standalone steel plants as it would dramatically increase time spent on collecting and reporting the information to the competent authority.

The authorities were also asked about how the revision of the scope of the E-PRTR would affect the time they spend on quality assurance (Q28. If all changes suggested in the preceding questions were to be implemented, how would the revision of the scope of the E-PRTR Regulation with regard to activities and activity thresholds affect the time you spend on quality-assuring the data provided by facility operators?). Only few respondents indicated that the time spent would decrease, with the majority thinking that the time would increase by at least 5-25% (Figure A1-66).

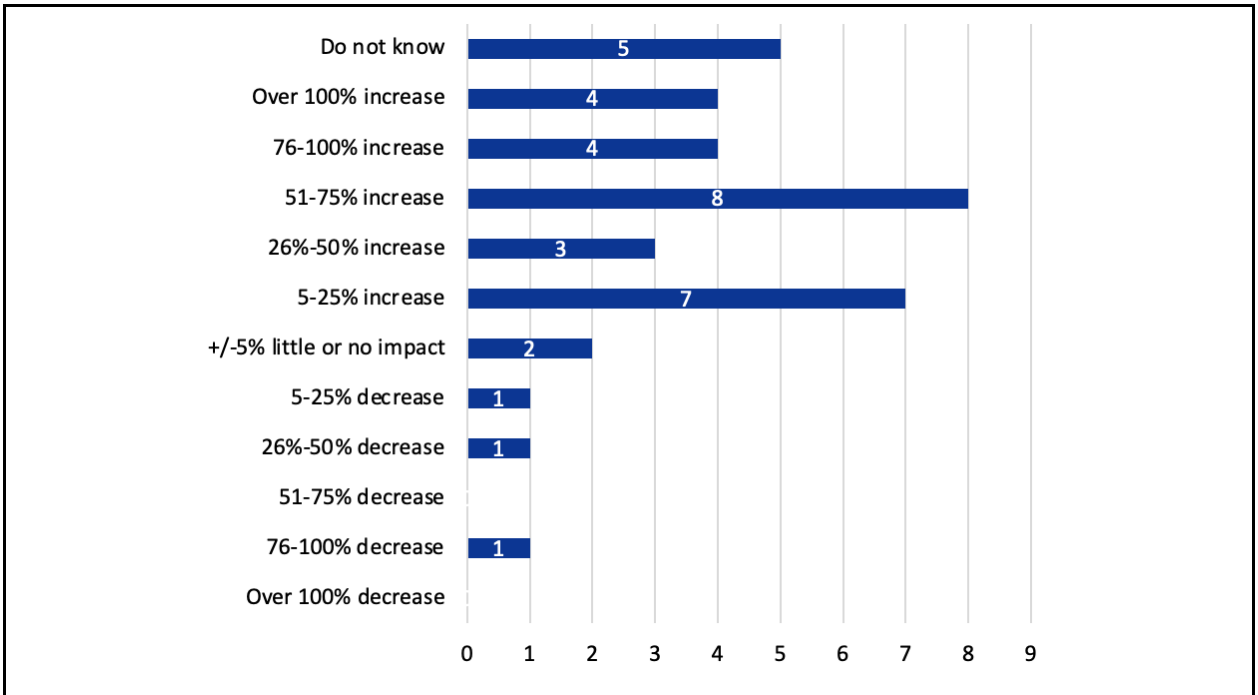


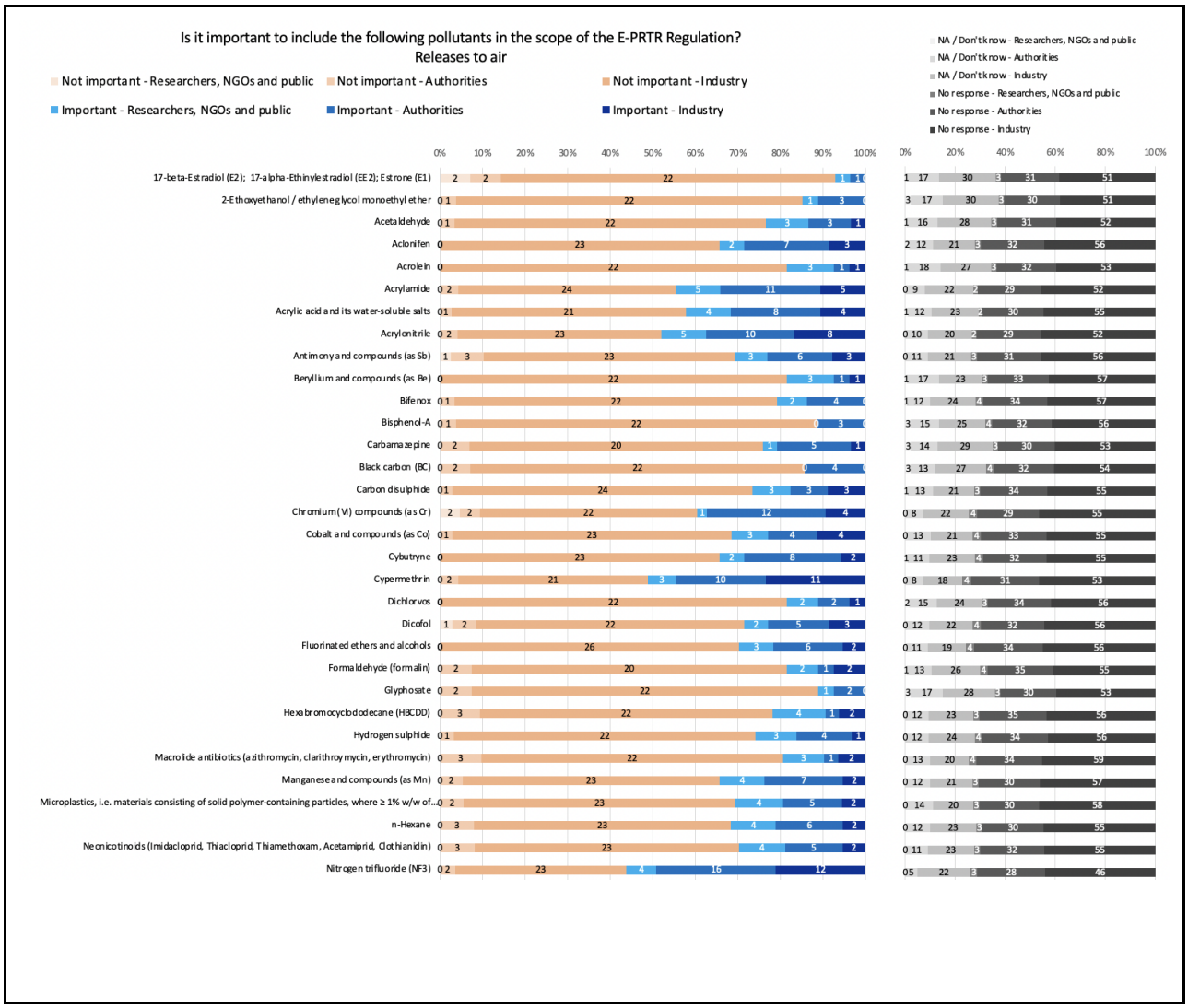
Figure A1-66: Q28: If all changes suggested in the preceding questions were to be implemented, how would the revision of the scope of the E-PRTR Regulation with regard to activities and activity thresholds affect the time you spend on quality-assuring the data provided by facility operators?

When asked what changes in the scope of the E-PRTR would trigger the change in the work time spent on related duties (Q29. What is the particular change in scope of the E-PRTR Regulation with regard to activities and activity thresholds that would trigger the change in the work time spent on PRTR-related duties?), many stakeholders indicated that the inclusion of combustion plants below 20 MW or 50 MW, UWWTPs under 100,000 p.e., and farming activities would add significant administrative and technical burden. However, one respondent noted that changes and the workload would be greater in the first year, and once the implementation is done, the increase in workload would directly be linked to the

increase of the sample size for both the quality check and helpdesk activities during surveys. The same respondent estimated 50 person-days of extra work, with the additional 20 days if the reporting on cattle was included. However, another stakeholder emphasised that only after an estimate of the number of the additional industrial complexes, thresholds, and pollutants they can decide on the additional person-days.

A1.2.7 Problem 2: Pollutants and thresholds for reporting releases

The E-PRTR's Annex II lists 91 pollutants. These cover a substantial proportion of pollutants listed in other EU environmental protection initiatives. Analysis of the IED and Best Available Techniques (BAT) conclusions, European environmental legislation and international recommendations, other PRTRs and the scientific literature identified a number of new pollutants for potential addition to the E-PRTR (ICF et al., 2020). E-PRTR may also have the potential to better align with controls set under the REACH Regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals, EC 1907/2006) and updates of the Environmental Quality Standards Directive (2008/105/EC). Respondents were asked about the importance of including 52 pollutants (substances and groups of substances) to Annex II of the E-PRTR Regulation. Figure A1-67, Figure A1-68 and Figure A1-69 show the results for releases to each environmental medium (air, water and soil).



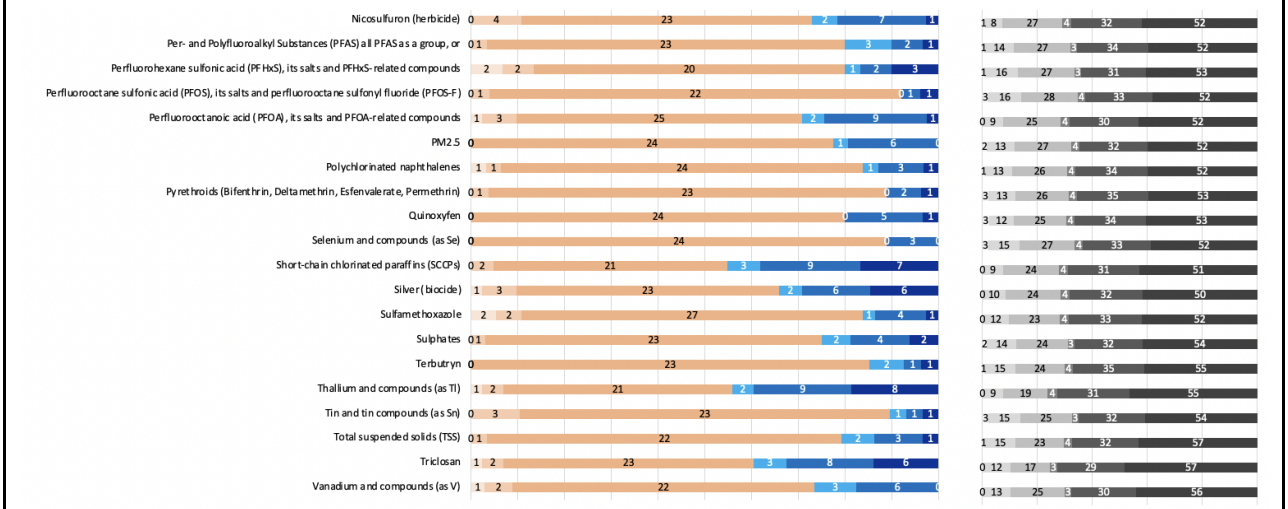
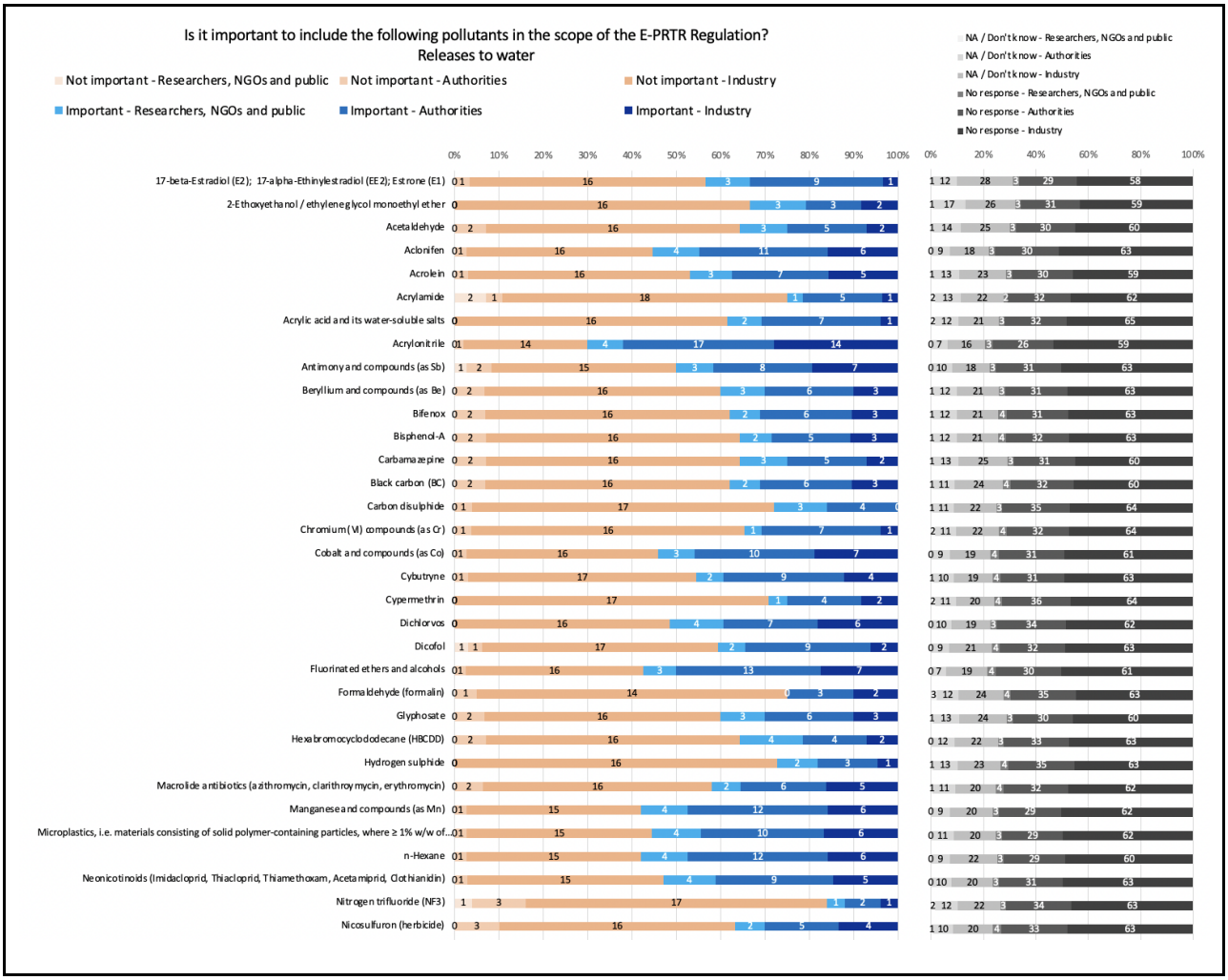


Figure A1-67: Q30(I): Is it important to include the following pollutants in the scope of the E-PRTR Regulation? Releases to air



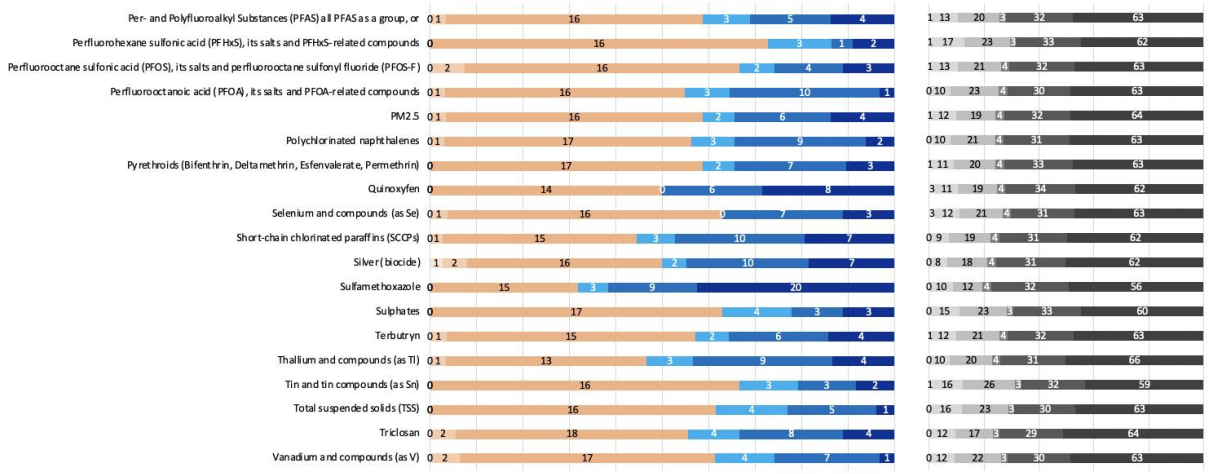
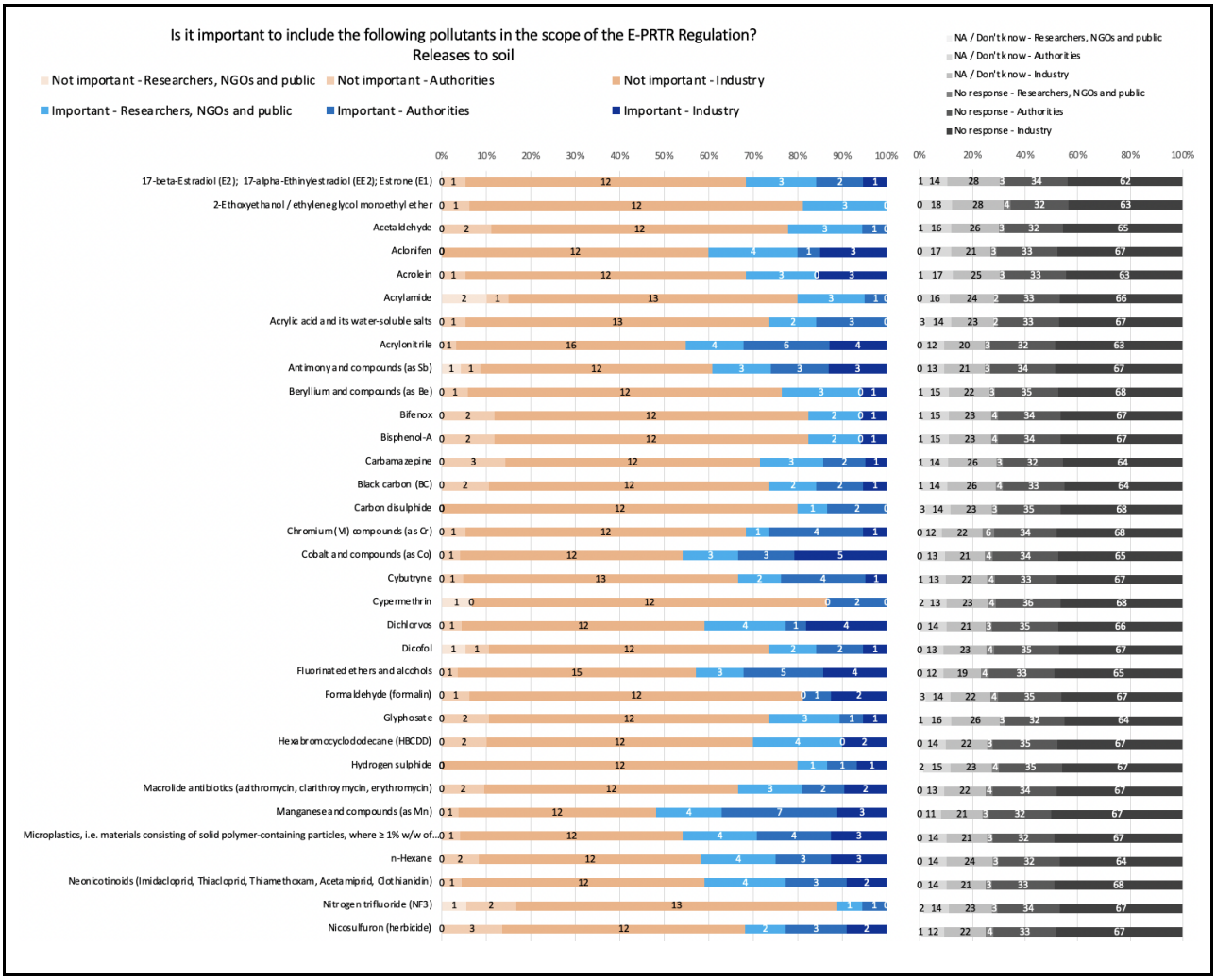


Figure A1-68: Q30(II): Is it important to include the following pollutants in the scope of the E-PRTR Regulation? Releases to water



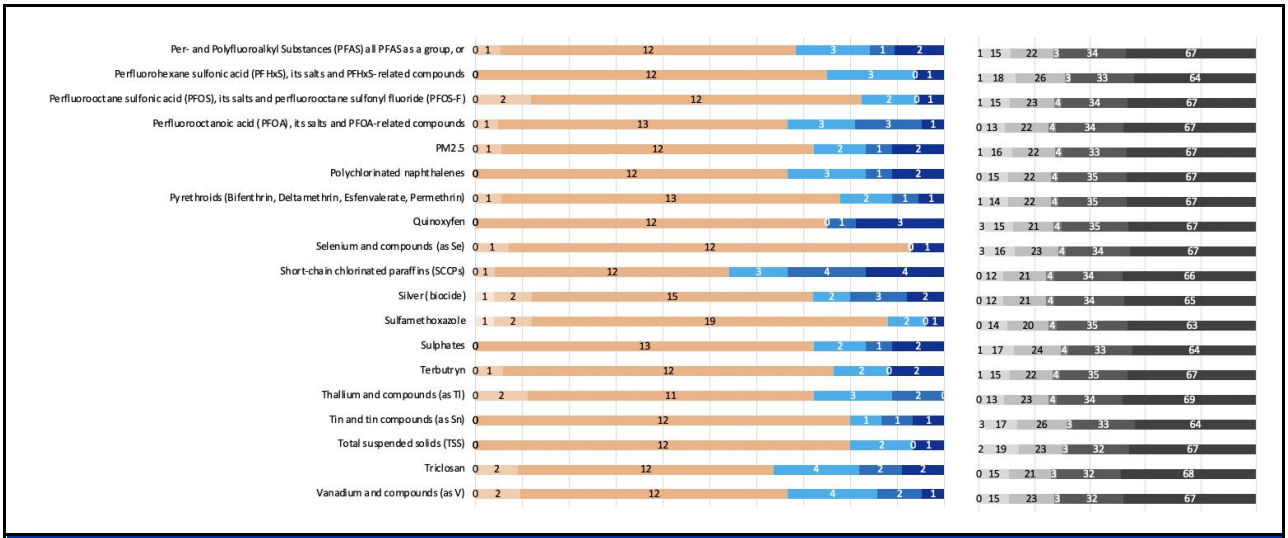


Figure A1-69: Q30(III): Is it important to include the following pollutants in the scope of the E-PRTR Regulation? Releases to soil

Many of the substances and groups of substances listed are water pollutants, and results reflect the respondents' expertise but also their knowledge of and the relative importance of these pollutants in their industrial sectors. Over 50% of the respondents to this question indicated that it is important to include the following pollutants in the scope of the E-PRTR Regulation:

- For releases to air:
  - Cypermethrin;
  - Nitrogen fluoride (NF3);
- For releases to water:
  - Aclonifen;
  - Acrylonitrile;
  - Antimony and compounds (as Sb);
  - Cobalt and compounds (as Co);
  - Dichlorvos;
  - Fluorinated ethers and alcohols;
  - Manganese and compounds (as Mn);
  - Microplastics, i.e. materials consisting of solid polymer-containing particles, where ≥ 1% w/w of particles have (i) all dimensions 1nm ≤ x ≤ 5mm, or (ii), for fibres, a length of 3nm ≤ x ≤ 15mm and length to diameter ratio of >3;
  - n-Hexane;
  - Neonicotinoids (Imidacloprid, Thiacloprid, Thiamethoxam, Acetamiprid, Clothianidin);
  - Quinoxyfen;
  - Short-chain chlorinated paraffins (SCCPs);
  - Silver (biocide);
  - Sulfamethoxazole;
  - Thallium and compounds (as Tl);

- For releases to soil:
  - Manganese and compounds (as Mn).

Survey participants were also asked to suggest other pollutants that should be considered for inclusion in the scope of the EPRTR. One NGO noted that there should not be a set reporting threshold for substances that are monitored in any case. Substances with PBT or P or B properties should not have thresholds due to bioaccumulation and persistency in the environment. Substances reported to the US TRI list are likely to be relevant for the EU too and should reported. Persistent mobile organic chemicals (PMOCs) (such as Trifluoromethanesulfonic acid and its halogenated homologues, 1-napthalenesulfonic acid, 1,3, di-o-tolylguanidine, GenX (2,3,3,3,-tetrafluoro-2 (heptafluoro-propoxy) propanoic acid) should be added as a group with no threshold. Substances that are identified as substances of very high concern according to Article 57 of REACH should also be reported. Information on facilities applying for a derogation to use SVHC from ECHA could be used to streamline the system. In an ideal world, the administrative burden would be reduced as facilities would only be required to report what they use or only those pollutants that are relevant for them or their sector. This may not be feasible in the short term, but a system where E-PRTR is more linked to REACH and ECHA's information on operators using substances of concern would be ideal. Crosslinking this information and finding synergies between the information held by various agencies is very important and would allow improving completeness and quality of the information while reducing administrative burden for operators and competent authorities. One researcher suggested that E-PRTR could address mixtures. The impact of mixtures may be higher than that of the individual substances, and with the implementation of effect-based methods to measure mixture toxicity thresholds could be established. Quaternary Ammonium substances should be considered for inclusion: these are biocidal active substances commonly used in disinfectants, which are extremely toxic to the aquatic environment.

One competent authority stressed the importance of adding dust, TVOC and the metals not yet included in the E-PRTR. Many competent authorities stated that substances addressed by other pieces of legislation should be included in E-PRTR Annex II.

Other pollutants mentioned by respondents:

- Air emissions from sulfuryldifluoride (F2O2S, used as biocide for wood preservation in ships);
- Hexafluorobutadiene (No CAS 87-68-3) and Naphtalene polychlores (No CAS 70776-03-0 and others);
- Styrene in order to allow international comparison with other PRTRs;
- Hexa-BDE and hepta-BDE;
- Polychlorinated naphthalenes;
- Salts and esthers of pentachlorophenols;
- Diclofenac, because of risks in surface water and soils are probable;
- Carbon Tetrachloride (CTC), an organic compound with the chemical formula CCl4, is a key intermediary component in the typical CFC production pathway. As such, CTC is a key building block in the production chain of fluorination and chlorination to produce CFC-11 and many other substances, controlled by the Montreal Protocol;
- Nitrogen trifluoride (NF3) is an extremely strong and long-lived greenhouse gas. Concentrations have doubled every five years since the late 20th century. NF3 has a 100-year global warming potential of 17,200;

- HFOs, which are alternatives to HFCs, because although they have a low GWP, some concerns have been raised on their accumulation in the environment and degradation products;
- Unsaturated hydro(chloro)fluorocarbons (HFC-1234yf CF3CF = CH2 HFC-1234ze trans, CHF = CHCF3 HFC-1336mzz CF3CH = CHCF3 HCFC-1233zd C3H2ClF3 HCFC-1233xf C3H2ClF3);
- 1,3-Butadiene (release to air);
- Addition of pollutants covered by taxes on polluting activities;
- Addition of pollutants listed in national PRTRs;
- Heptachlorepoxide;
- Individual compounds of PCBs and PBDEs;
- Lindane isomers;
- Alternatives to brominated flame retardants such as decabromodiphenyl ethane (DBDPE) and chlorinated organophosphate flame retardants such as tris (1-chloro-2-propyl) phosphate (TCIPP) and tris (1,3-dichloro-2-propyl) phosphate (TDCIPP);
- Additional phthalates such as DINP, DIBP and DBP.

More in general, respondents suggested to carry out a review of IED BAT Conclusion documents to ensure that relevant pollutants are included for individual industrial sectors, particularly those pollutants for which BAT AELs are defined.

Industry stakeholders noted that the addition of new pollutants or the decrease of existing reporting thresholds might erroneously display a picture of 'increasing' emissions of many facilities. Moreover, the measurement and subsequent reporting of new pollutants would entail significant costs (e.g. additional work time, measurement costs, hiring of third-party laboratories, etc.). These undesired effects could be mitigated by ensuring that truly relevant pollutants are reported in the E-PRTR. To this end, they stressed again the importance of the inclusion of additional pollutants following a robust science-based approach.

When asked whether the E-PRTR supporting guidance should specify which pollutants must be reported by which activity, the majority of the respondents considered such an option favourably (Figure A1-70).

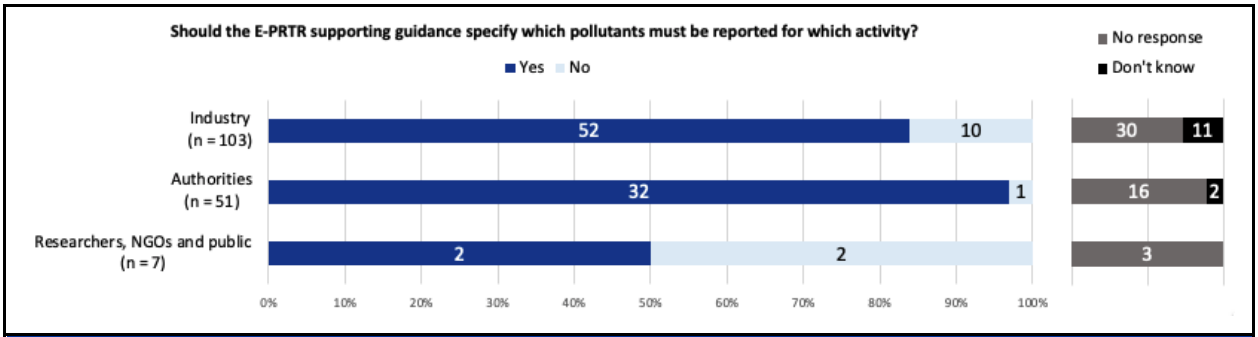


Figure A1-70: Q39: Should the E-PRTR supporting guidance specify which pollutants must be reported for which activity?

Reporting thresholds

When asked about the importance of reducing reporting thresholds to capture 90% of industrial releases, researchers and NGOs agreed on the importance of this measure to ensure the overall effectiveness of the E-PRTR. Around 27 national and regional authorities considered such a measure important or very important, while 22 authorities did not respond or had no opinion, with two authorities considering this

measure not at all important. Only a limited number of industry stakeholders considered this measure as important or very important, with the majority rating it as not at all important or not responding/having no opinion.

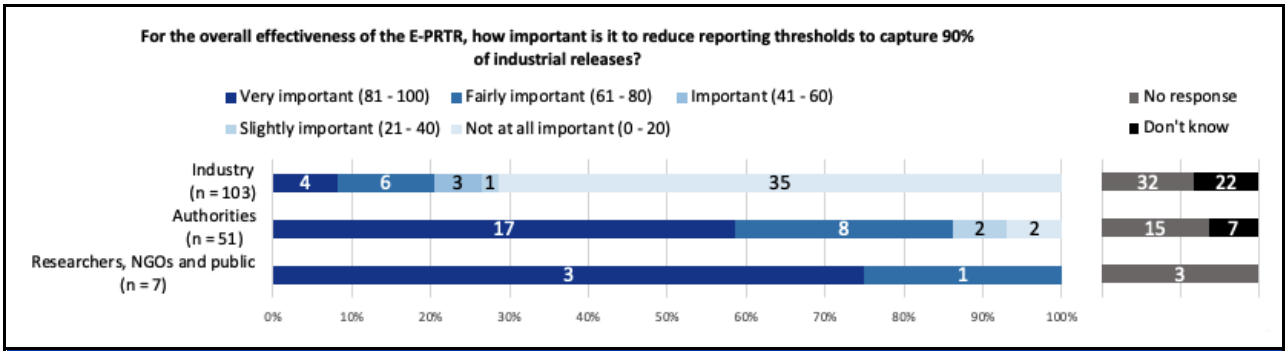


Figure A1-71: Q35: For the overall effectiveness of the E-PRTR, how important is it to reduce reporting thresholds to capture 90% of industrial releases?

Survey participants were also invited to provide suggestions about the appropriate E-PRTR thresholds for reporting releases of the pollutants considered (Table A1-6).

Table A1-6: Reporting thresholds suggested by survey participants

Pollutant	Releases to air	Releases to water	Releases to land
17-beta-Estradiol (E2); 17-alpha-Ethinylestradiol (EE2); Estrone (E1)		0.01 kg/y*	
Acetaldehyde	200 kg/y**		
Aclonifen		1 kg/y*** 0.4 kg/y****	
Acrylonitrile	1,000 kg/y**		
Antimony and compounds (as Sb)	10 kg/y**,***	30 kg/y***** 1.5 mg/l – 0.5 kg/y	
Beryllium and compounds (Be)		0.05 kg/y*****	
Bifenox		0.4 kg/y****	
Carbamazepine		1 kg/y*	
Carbon disulphide	50,000 kg/y** 5,000 kg/y****		
Chromium (VI) compounds (as Cr)		30 kg/y**,***	30 kg/y**,***
Cobalt and compounds (as Co)	5 kg/y**	40 kg/y** 150 kg/y*****	
Cybutryne		1 kg/y*** 0.4 kg/y****	
Cypermethrin		1 kg/y*** 0.4 kg/y****	
Dichlorvos		1 kg/y*** 0.4 kg/y****	
Dicofol		1 kg/y*** 0.4 kg/y****	
Formaldehyde	1,000 kg/y** 100 kg/y 20 mg/m^3	300 kg/y**	
Glyphosate		0.4 kg/y****	

Table A1-6: Reporting thresholds suggested by survey participants			
Pollutant	**Releases to air**	**Releases to water**	**Releases to land**
Hexabromocyclododecane (HBCDD)		1 kg/y*** 0.4 kg/y****	
Hydrogen sulphide	3,000 kg/y** 1,000 kg/y 5,000 kg/y		
Manganese and compounds (as Mn)	200 kg/y**,***	200 kg/y**,***	200 kg/y**
Nitrogen trifluoride (NF3)	500 kg/y**		
Per- and Polyfluoroalkyl Substances (PFAS) all PFAS as a group	0.1 kg/y	0.1 kg/y**** 0.4 kg/y****	0.1 kg/y
Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	0.1 kg/y	0.1 kg/y**** 0.4 kg/y****	0.1 kg/y
Perfluorooctane sulfonic acid (PFOS), its salts and PFOS-related compounds	0 kg/y**	0 kg/y** 0.1 kg/y**** 0.4 kg/y**** 1 kg/y***	0.1 kg/y
Perfluorooctane sulfonyl fluoride (PFOS-F)	0.1 kg/y	0.1 kg/y**** 0.4 kg/y****	0.1 kg/y
Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds	0.1 kg/y	0.1 kg/y**** 0.4 kg/y****	0.1 kg/y
$PM_{2.5}$	30,000 kg/y		
Polychlorinated naphthalenes		0.4 kg/y****	
Quinoxyfen		1 kg/y*** 0.4 kg/y****	
Selenium and compounds (as Se)		50 kg/y*****	
Sulfamethoxazole		0.1 kg/y 0.4 kg/y****	
Short-chain chlorinated paraffins (SCCPs)		1.5 kg/y***** 0.4 kg/y****	
Sulphates		1,500,000 kg/y**	
Terbutryn		1 kg/y** 0.4 kg/y****	
Thallium and compounds (as Tl)	10 kg/y**	10 kg/y*****	
Tin and tin compounds (as Sn)	2,000 kg/y**	100 kg/y***** 200 kg/y**	200 kg/y**
Total suspended particulate (TSP)	100,000 kg/y**	10,000 kg/y*****	
Total suspended solids (TSS)		300,000 kg/y**	
Triclosan		0.01 kg/y 0.4 kg/y****	
Vanadium and compounds (as V)	10 kg/y**	30 kg/y*****	

Notes:
Values suggested by one respondent unless otherwise stated
** Calculated as load/year/WWTP*
*** Threshold value used in France*
**** Same threshold value is already used in the E-PRTR for similar compounds*
***** Suggested by two respondents*
****** Ensures coverage of 90% of releases reported in the Flemish register*

Regarding thresholds, one NGO commented:

> *"There should be no threshold set if the substance is monitored why apply threshold on reporting? Rather the relevant threshold is "detection limit" and should be aligned to the state-of-the-art situation of monitoring standards (e.g. CEN). Irrespective of the previous point, for substances with PBT or P or B properties we oppose any thresholds due to accumulation and persistency in the environment as well as for CMR or other pollutants with hazard properties of equivalent concern."*

One public authority stressed that a good way to identify pollutants and reporting thresholds is to follow the approach used in ICF et al. (2020), i.e. using toxicity, volume and priority in other legislation. The same public authority also pointed to the Chemicals Strategy for Sustainability, which set the goal of a rapid phasing out of non-essential PFAS. PFAS should be addressed as a group, given the high amount of different PFAS compounds and the impossibility to target them all. Detection methods to measure total PFAS are available, for example, the TOF-CIC method. Alternatively, the E-PRTR should consider the inclusion of the 20 PFAS that have been identified as priorities in the Drinking Water Directive.

It was highlighted that in Norway, 15 PFAS compounds are reported individually and aggregated automatically by the reporting system. One national competent authority recommended having no thresholds for POPs.

In general, national competent authorities recommended to include pollutants regulated by other legislation for coherence. Examples are:

- PM2.5 and black carbon: toxic air pollutants targeted by other legislation and with air quality standards. One respondent suggested that thresholds should be correlated to the total dust threshold and that reporting should not require additional measurements but be based on typical correlation depending on fuel, plant size and abatement measures;
- Heavy metals such as Cobalt, manganese, CrVI: they are present in other international PRTR and are highly toxic for air and water. Group methods could be used for detection (total metals and compounds);
- Acetaldehyde and formaldehyde: High toxicity in, respectively, air and air and water.

Thresholds for water pollutants could be based on the EQS.

Regarding microplastics, these may be released by products and articles, so they may not come up as industrial releases to air or water.

Another national competent authority recommended to include all pollutants for which BAT-AELs or monitoring requirements in BAT conclusions are available. All POPs included in the Stockholm Convention should be reported, and TVOC should be reported along with NMVOC. Furthermore, there is the need to clarify the distinction between PM_{10} and dust and possibly include dust as BATc provide BAT-AELs for dust. Finally, some toxic metals (Mo, W, V, Tl) are not covered by the E-PRTR and should be included as released by industrial activities.

One industry stakeholder stated that pollutants should only be included if industrial sites are, overall, expected to be an important source of these pollutants. If the sources of a certain pollutant into the environment are mainly non-industrial, including the pollutants to the E-PRTR Regulation will bring low added value. Substances regulated under IED (with or without BAT) may be reported under E-PRTR, but

only for the relevant sectors, and appropriate thresholds should be identified in order to avoid an excessive increase of administrative burden vs a negligible amount of emissions reported.

In general, respondents suggested that, where possible, limits should be aligned to those in the IED.

Industry stakeholders noted that the inclusion of additional pollutants to the E-PRTR will pose an additional burden to operators, which for some sectors could be significant, and competent authorities. Emission monitoring would generally have to be based on periodic measurements (once every year or once every three years) and, therefore, substantive additional monitoring costs would occur, or emission reporting would have to be based on time- and labour-intensive estimates. Moreover, it is important to establish whether there are standardised measurement methods for the substances considered for inclusion.

The selection of the pollutants and the establishment of their reporting thresholds should follow a robust scientific method, to be discussed and agreed upon by an expert group, including industry experts. Furthermore, the consideration of any new pollutant for inclusion should be aligned with the focused approach to Key Environmental Issues (BREFs), i.e. only pollutants posing a significant environmental pressure should be included.

Sunrise and sunset mechanisms

Survey participants were asked to rate the importance of devising the sunrise and sunset mechanisms:

- The sunrise mechanism would allow the Commission to consider pollutants of emerging concern for addition to the E-PRTR periodically;
- The sunset mechanism would allow the Commission to consider periodically the removal of E-PRTR pollutants for which releases are reported in very low quantities for a number of years.

Figure A1-72 and Figure A1-73 show the results.

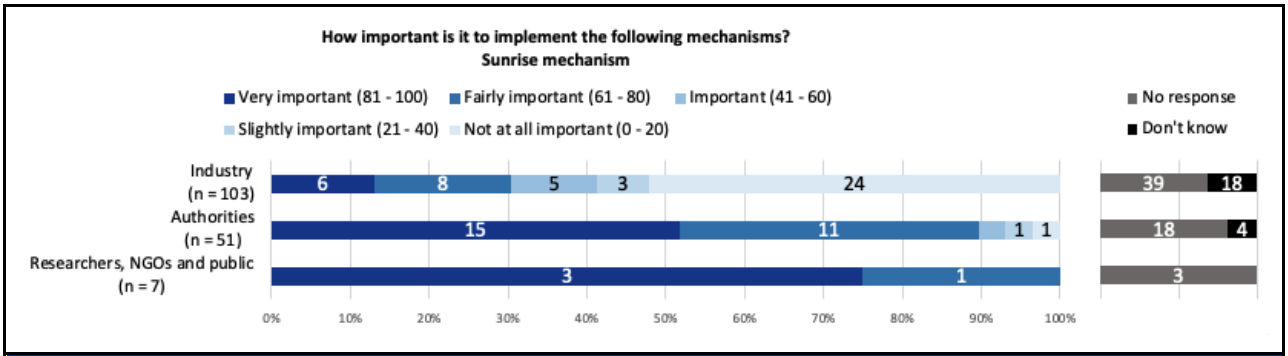


Figure A1-72: Q32: How important is it to implement the following mechanisms? Sunrise mechanism

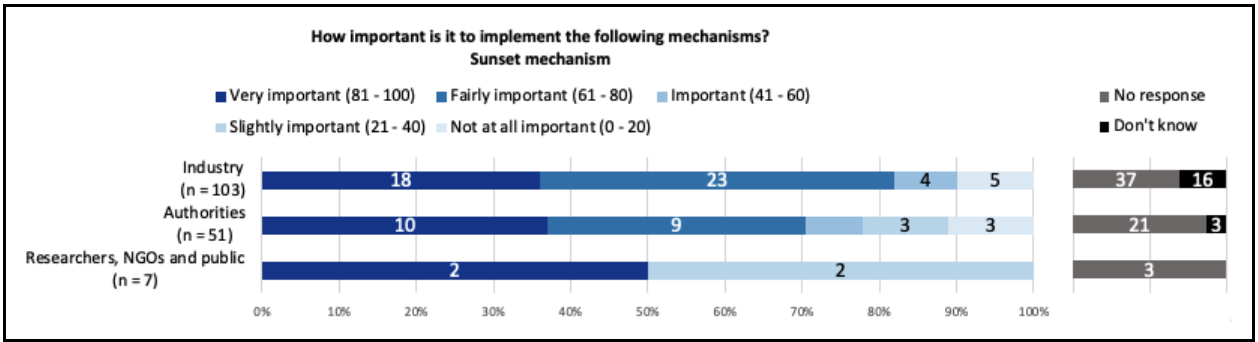


Figure A1-73: Q32: How important is it to implement the following mechanisms? Sunset mechanism

NGOs and authorities support the establishment of a more dynamic instrument. A key issue highlighted by the respondents is the frequency of the update of Annex II and suggest a fast-track system, including a dynamic update link to other legislation. Regarding the sunset mechanism, NGOs noted that reporting a substance with "very low quantity" does not mean it is of "very low impact", pointing to the example of PCCD/F. In general, there is no rationale to remove substances from reporting if the monitoring is still in place, also due to compliance and benchmarking reasons with other EU legislation. Moreover, even if the use of a substance is banned and hence it is unlikely of being released/transferred, it is not certain that the substance will not appear in the future again. For many substances, there is also a major accident risk due to their presence, even if used /stored under strictly controlled conditions (with no release or transfer occurring). Therefore, it is important to report about the presence and use of those substances, even if used as intermediate under strictly controlled conditions. Finally, even obsolete pollutants such as some POPs, banned pesticides, asbestos, etc., may be relevant for waste treatment activities (their elimination) so should not be removed. Authorities noted that it is important to keep in mind the minimum requirements of the UNECE Protocol on PRTRs and to retain the global dimension of the register.

National authorities stressed the importance of establishing such mechanisms while ensuring the participation of competent authorities in the decision-making process. In general, authorities noted that the sunrise mechanism should be prioritised over the sunset mechanism, as capturing the environmental pressure posed by emerging pollutants is more important than removing pollutants not relevant anymore, which can be done gradually and at regular intervals.

One authority noted that the sunset mechanism could help reduce the workload linked with data collection, but it should be considered when the industrial processes (from which the pollutants originate) have become obsolete. Otherwise, if the process is still attractive, there is the potential for further releases of pollutants that are not monitored and reported anymore. Moreover, both the sunrise and sunset mechanisms should not be implemented on a yearly basis, as it would result in an excessive burden due to the need to adapt national legislation. A five-year cycle may be more efficient.

In general, industry stakeholders supported the idea of a sunset mechanism, where pollutants that are not reported for a number of years are removed from the list, as it would ease administrative burden and allow to focus on more relevant pollutants/issues. However, system stability should be of common interest, and pollutants should not be added or removed too frequently. Some industry stakeholders would like a case-by-case approach, informed by sound science and robust data, to assess each pollutant individually and determine the value of including or removing it from Annex II. Moreover, a pollutant should only be added if standard methods (M/E/C) or clear methodology is available.

A1.2.8 Problem area 3: Information to track progress towards the circular economy and decarbonisation of industry

Data on the composition of waste transfers and data on resource consumption (e.g., energy, water, and raw materials) are currently not included or only partly included in the E-PRTR. They could be an important contribution to understanding progress towards realising circular economy objectives. The addition of contextual data, e.g., energy use, could also increase the usefulness of the E-PRTR in supporting the assessment of the environmental performance and the carbon efficiency of different industrial activities. If such data were reported to competent authorities and submitted to the E-PRTR, some might be claimed confidential business information (CBI) and excluded from public data products.

With regards to reporting of additional contextual information on energy consumption and energy recovery/reuse, by far the largest share of researchers, NGOs and public as well as authorities reported the former to be very or fairly important. In contrast, only a small percentage of industry stakeholders saw reporting as important to varying degrees, with over 80% of respondents from the industry considering the reporting of additional contextual information on energy consumption/recovery/reuse to be not at all important (Figure A1-74).

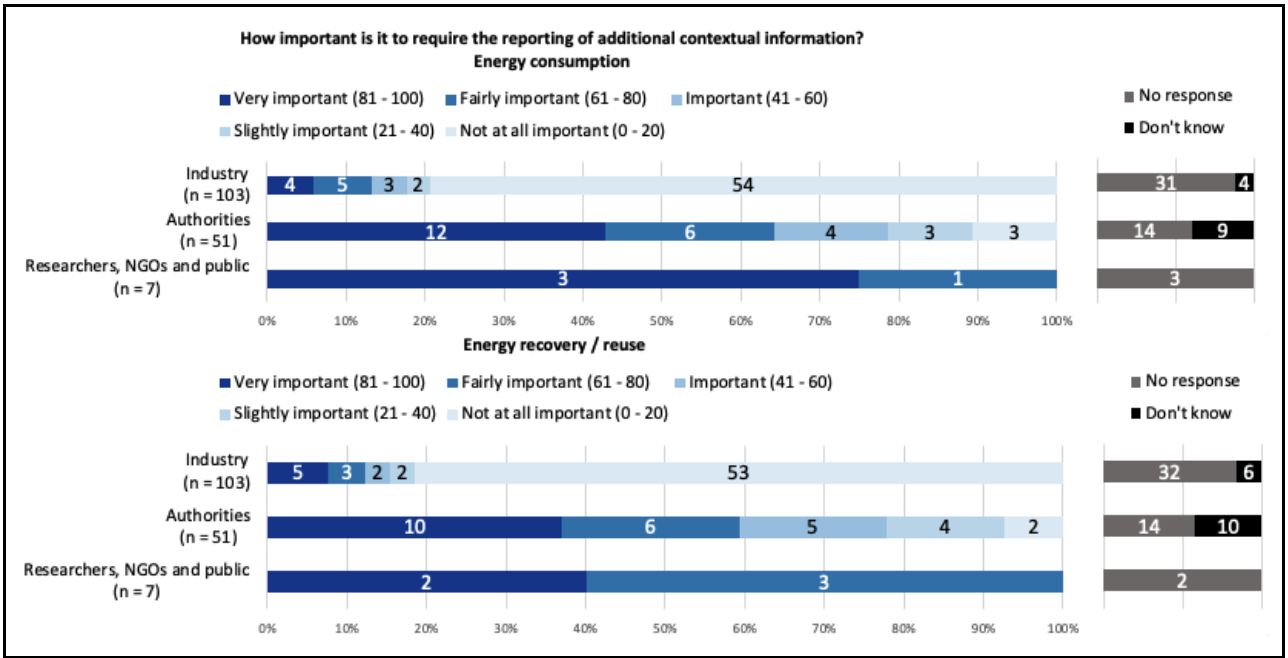


Figure A1-74: Q41 (I): How important is it to require the reporting of additional contextual information?

The importance of reporting additional contextual information on water consumption and the percentage of water reused was almost identical to the case above (Figure A1-75). While the majority of authorities and researchers, NGOs and public thought that the reporting of additional information on water was very or fairly important, half of all industry stakeholders participating in the survey saw reporting of additional contextual information on water consumed/reused as unimportant.

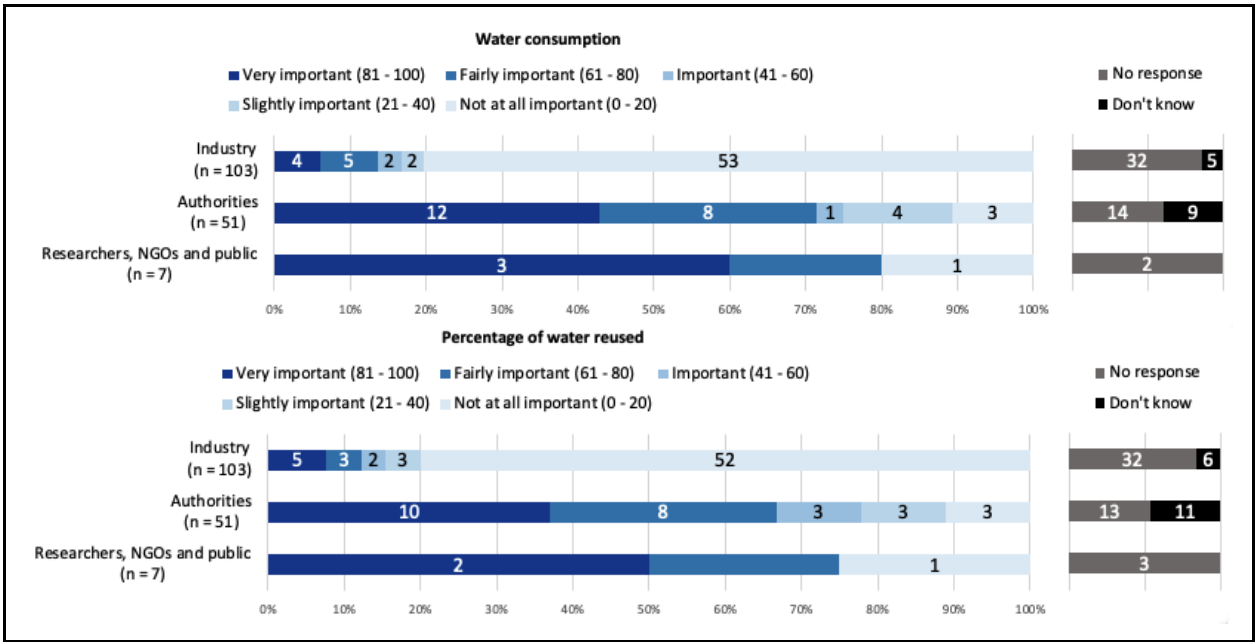


Figure A1-75: Q41 (II): How important is it to require the reporting of additional contextual information?

Finally, when it comes to reporting additional contextual information on raw materials consumption and composition of waste transfers, the majority of authorities and researchers, NGOs and public indicated that it was important, whereas the industry stakeholders thought the opposite (Figure A1-76).

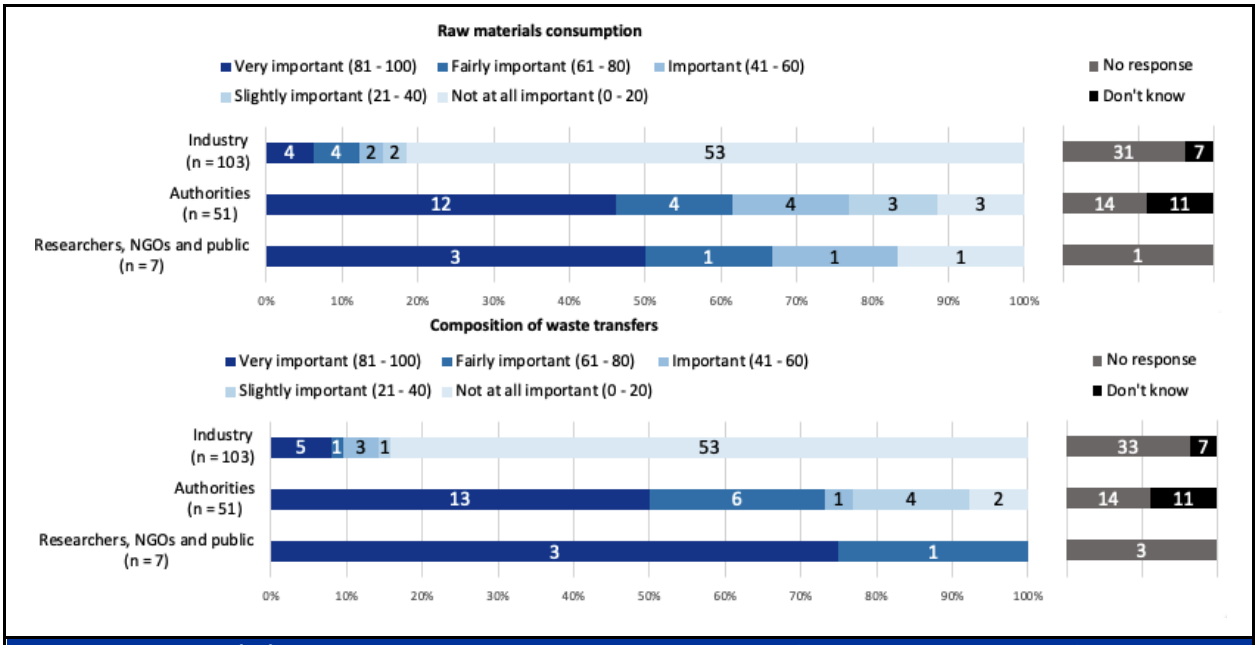


Figure A1-76: Q41 (IV): How important is it to require the reporting of additional contextual information?

Although there were only a few comments by researchers and NGOs on this topic, this group emphasised that all the elements altogether were of paramount importance for ensuring that the E-PRTR provides a meaningful contribution to aspects, such as benchmarking of activities, tracking of progress and

comparison of 'environmental performance'. Particularly, the linkage between energy and raw material consumption was drawn by the group in order to ensure energy efficiency resulting from both – process yields and process efficiencies.

Nevertheless, one of the respondents distinguished another missing yet necessary aspect that has not been mentioned in the survey:

> "*Another missing element as to reporting is related to the IED Baseline report (Article 22) as to presence of hazardous substances, the state of soil and groundwater pollution and site remediation measures. An electronic and harmonised reporting tool should enable the content of reporting about the presence of hazardous substances (inventory, sampling results), identification of issues linked to pollution and enable a tracking of any remediation activities that have taken place, with third party (independent) verification of the results made (this links to reporting on waste transfers, in particular if the soil / water is contaminated)*."

Based on authority representatives' comments, there were some concerns that despite its usefulness, an inclusion of contextual information would risk overloading the E-PRTR and, therefore, would require disproportionate efforts from authorities as well as operators. Nevertheless, a change of the type of information would be subject to a change of legislation and existing IT tools. Similarly to researchers, NGOs and public, the general view of authorities was best illustrated by the comment of one of the respondents:

> *"One relevant aspect to highlight is that one aspect on its own (in isolation) does not tell much of the story. "*

On the other hand, this group also believed that the E-PRTR, including additional contextual information, would be useful not only for internal validation procedure at the authority level but, as one of respondents commented:

> *"An inclusion of contextual information on these issues would be an important tool for increasing the amount of available data when revising BREFs and BAT Conclusion under the IED, especially regarding environmental aspects which are important for the achievement of a circular economy and to mitigate climate change."*

In addition to this, the need for organizing contextual information according to specific sectors in order to ensure comparability across them has been emphasized, distinguishing three areas of importance: raw material consumption, waste transfers and energy consumption. With regards to reporting on raw material consumption, authority stakeholders suggested that instead of focusing on raw materials, the information on the share of secondary sources in the latter should be reported and, accordingly, could be seen as a quick indicator of both - circularity and industrial symbiosis. Secondly, several stakeholders stressed the importance of reporting pollutant releases (not only mass pollutants) in waste transfers, although, in some countries' PRTRs, they are already monitored. Finally, the highest number of authority representatives mentioned the importance of reporting the level of energy consumption by differentiating between the origin of the energy consumed (e.g., excluding self-generation from renewable energy, such as solar panels) as well as making comparisons of environmental indications of energy efficiency and decarbonization. For this, however, confidentiality issues have been raised, which, according to authority representatives, could only be mitigated should the balance between confidential and public information was maintained.

Finally, the comments provided by the industry stakeholders were reflective of the figures above, with remarkably low interest in reporting any type of additional contextual information for several reasons. First and foremost, the issue of confidentiality was raised by a lion share of industry representatives who saw no additional benefit for the public from the reporting of additional contextual information. To elucidate, the importance of ensuring confidentiality was unilaterally emphasised by several stakeholders:

> *"The access, collection and dissemination of environmental information is governed by Regulation 1367/2006 (the 'Aarhus Regulation'). The Regulation only presumes an overriding public interest in disclosure when environmental information relates to emissions into the environment. Moreover, the rules protecting the disclosure of confidential business information (CBI) (e.g. Regulation 1049/2001) and competition law (e.g. Article 101 TFEU) must be respected. The Seville process is an example of good governance where CBI is handled with utmost caution (in particular through aggregation of plant data or anonymisation). However, it is doubtful that, in the context of the E-PRTR Regulation, anonymisation of the data or aggregation beyond the scope of the facility would help the public contextualise the environmental information at all. It is also doubtful that data relating to consumption will serve any purpose in the context of the E-PRTR Regulation. <…> In conclusion, besides the reporting of a minimum level of information that would help the citizens contextualise the emission/transfers data (e.g. activity levels, provided again that they comply with CBI and competition rules), the reporting of contextual information as proposed above would not bring any added value to information already provided on the state of the environment."*

Similarly, some industry representatives concluded that energy, water and raw material consumptions, in contrast to transfers and releases, were increasingly site- and configuration specific (e.g., plant design, process efficiency, technology, monitoring devices), which would only impede successful data comparability among sites and/or activities. As one of the stakeholders noted:

> *"It is important to generate information which is comparable. So, to a degree background information can be helpful. But, as we could see it during the very detailed data valuation of the WGC BREF, deep knowledge is required in order to fully comprehend the specificities of the single units. E-PRTR can only give a general guidance of overall emissions and as such cannot and should not be used to 'rank' or 'compare' the performance of installations. Again, simply because it takes a very specific view."*

Some respondents mentioned that providing contextual information not only would distort the European market/competition by disclosing production costs and secrets but would also incur additional costs and administrative burdens as well as would violate competition law (e.g. Article 101 TFEU), protecting confidential business information (CBI) (e.g. Regulation 1049/2001).

Finally, several industry stakeholders raised the concern over overlap of double regulation emphasising that the additional contextual information already exists in BREFs under the IED, and therefore, E-PRTR should not become a tool to support the IED BREF. To delineate, one of the respondents commented:

> *"It must be made clear that only environmental data should be reported to the E-PRTR. The E-PRTR is not a performance monitoring tool. Therefore, it is important that there is no quantification method specific to the E-PRTR as this would duplicate the work. The National methodology should be used."*

A similar view was shared by other representatives of the group who did not see the E-PRTR to be useful for measuring the progress towards circular economy objectives, but only to give a general overview of emission trends in the EU (e.g., across sectors, across Member States).

Burden of reporting contextual information

Additional burden on Industry

More than 80% of industry stakeholders, who were inquired about the additional burden of reporting contextual information on energy consumption as well as energy recovery/reuse, concluded that it would have a very or fairly significant impact on time spent for reporting information to the competent authority. In both cases (Figure A1-77), only three stakeholders reported that reporting additional contextual information on energy would have little to no impact on their time allocated for reporting.

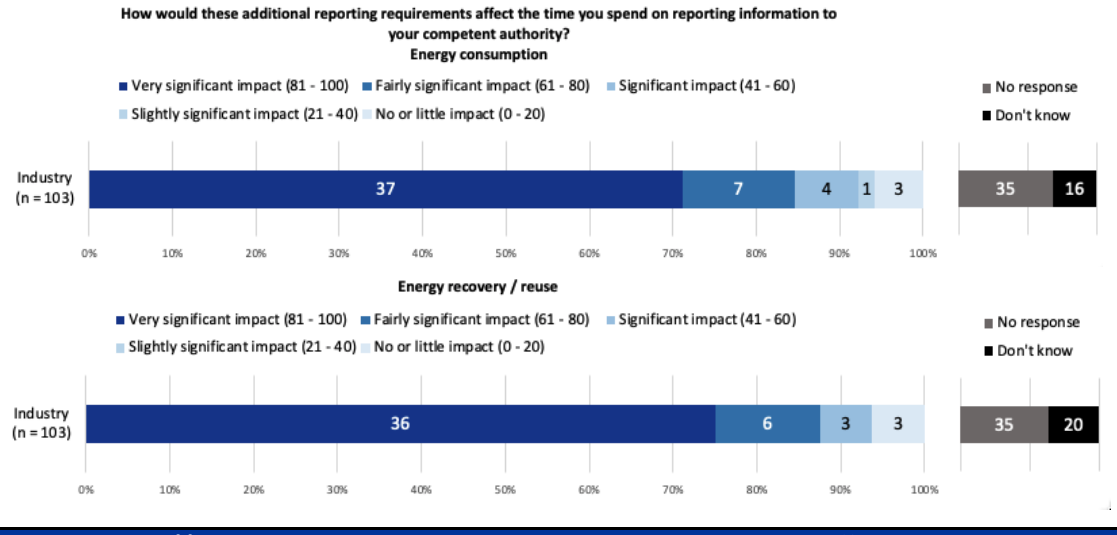


Figure A1-77: Q42(I): How would these additional reporting requirements affect the time you spend on reporting information to your competent authority?

Similarly, the burden for reporting additional information on water consumption and its percentage reused was seen as significant and fairly significant by the majority of all the respondents (Figure A1-78).

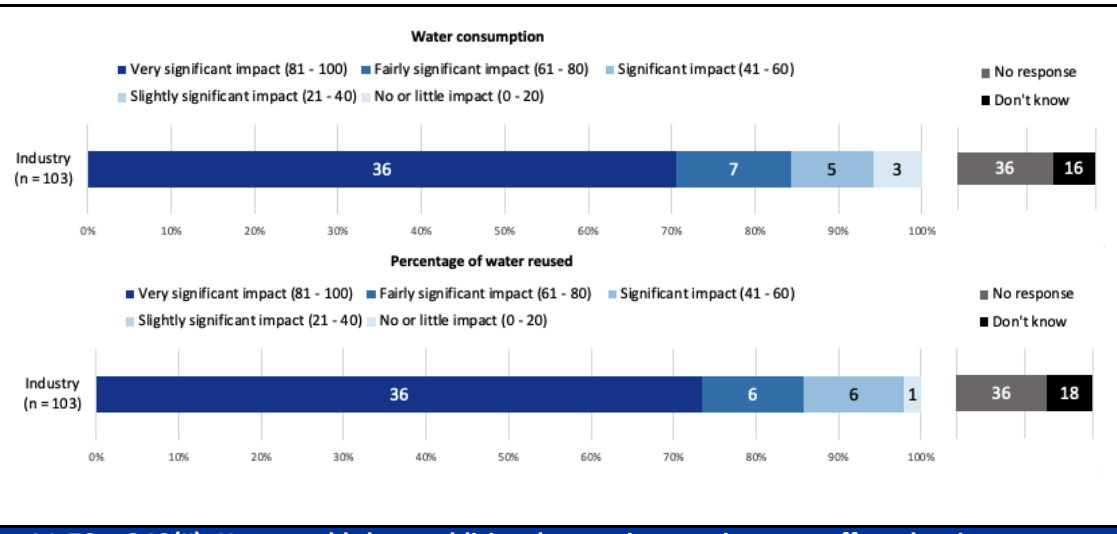


Figure A1-78: Q42(II): How would these additional reporting requirements affect the time you spend on reporting information to your competent authority?

Industry stakeholders indicated that reporting on the composition of waste transfers would have a very significant impact on their time spent for reporting to competent authorities (Figure A1-79).

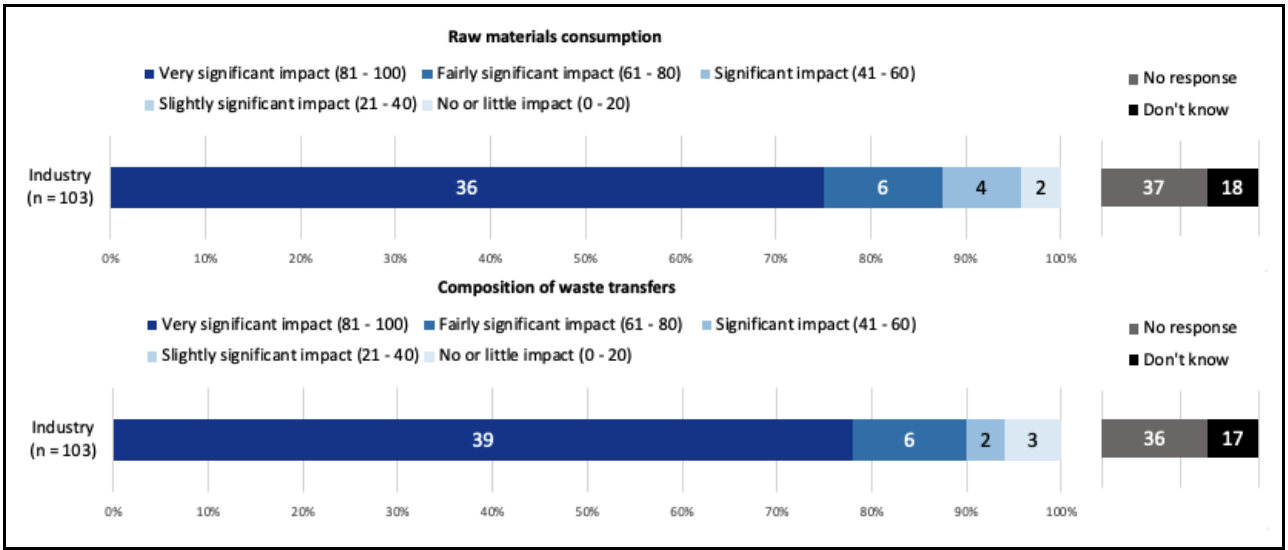


Figure A1-79: Q42(III): How would these additional reporting requirements affect the time you spend on reporting information to your competent authority?

Many authority stakeholders emphasised that the additional contextual information, which could be potentially included in the E-PRTR, was already reported under the IED permit. Accordingly, several respondents noted that if all additional reporting requirements (e.g., energy consumption, water consumption, raw materials consumption etc.) were included, the time spent on reporting would be significant. On the other hand, one respondent mentioned:

> *"Reporting is less of the issue but collecting and compiling all the data will be more complicated and time-consuming the more data are sought. Without proper comparability, we do not see much value in adding more details. More guidance is needed of what is in scope of a data collection and especially, what are the boundary limits within an installation/site/process has to report."*

Alongside the complex process of data collection, one of the respondents noted that, for instance, refinery energy consumption is already regulated under the EU Emission Trading System (ETS), whereas for additional reporting requirements, information of interest is seldom provided in a decentralised manner. In case additional reporting requirements were introduced to the E-PRTR, more guidance would be needed according to some industry stakeholders (e.g., what is in the scope of that data collection, what are the boundary limits within an installation/site/process that have to be reported).

Additional burden on authorities

The additional burden from quality assuring the data on both energy consumption and energy recovery/reuse was reported to be significant by most of the authority representatives (Figure A1).

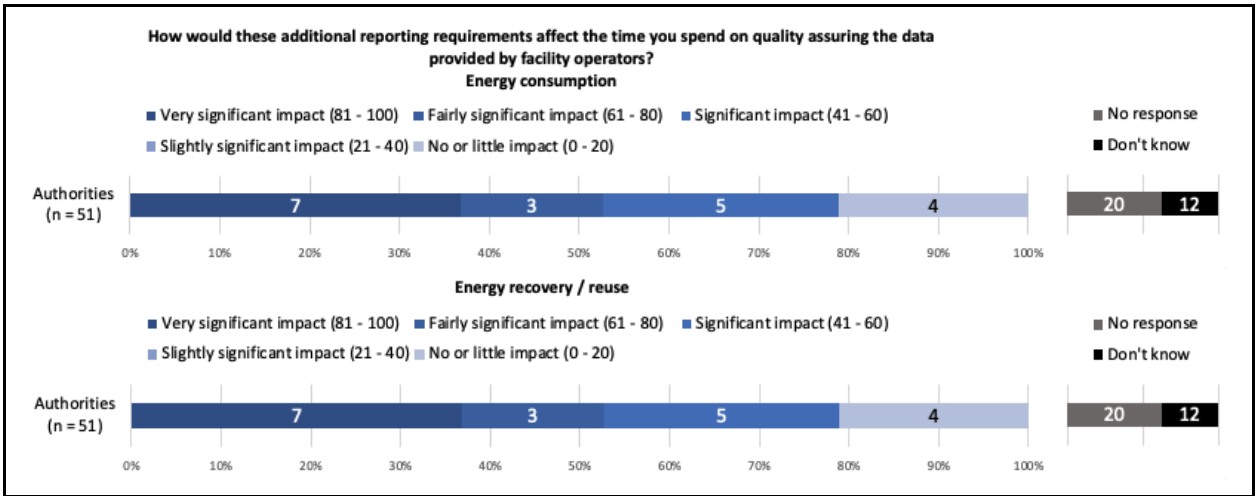


Figure A1: Q43(I): How would these additional reporting requirements affect the time you spend on quality assuring the data provided by facility operators?

Regarding additional requirements when quality assuring the data on water consumption and its percentage reused, the majority of respondents thought it would have a significant impact (Figure A1).

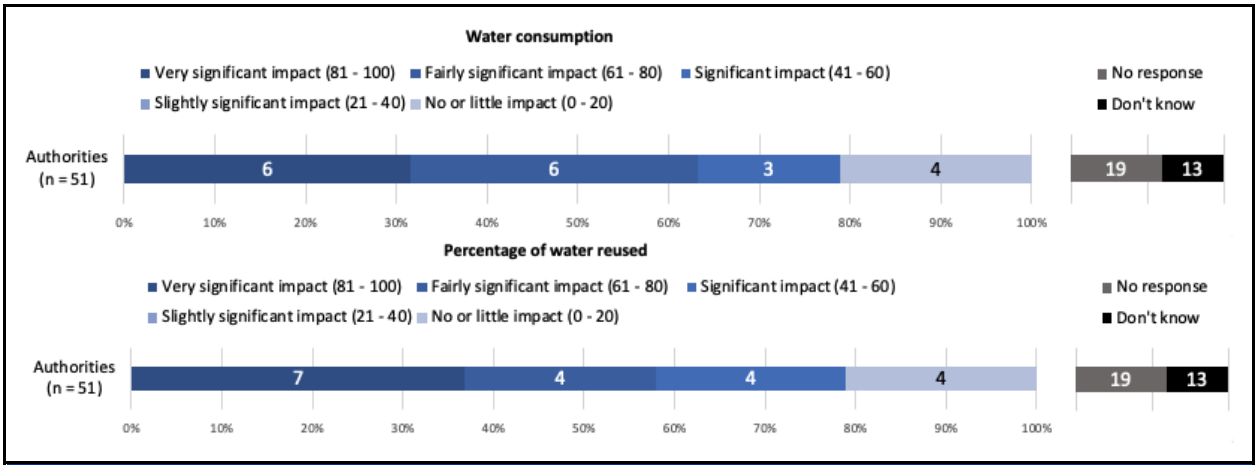
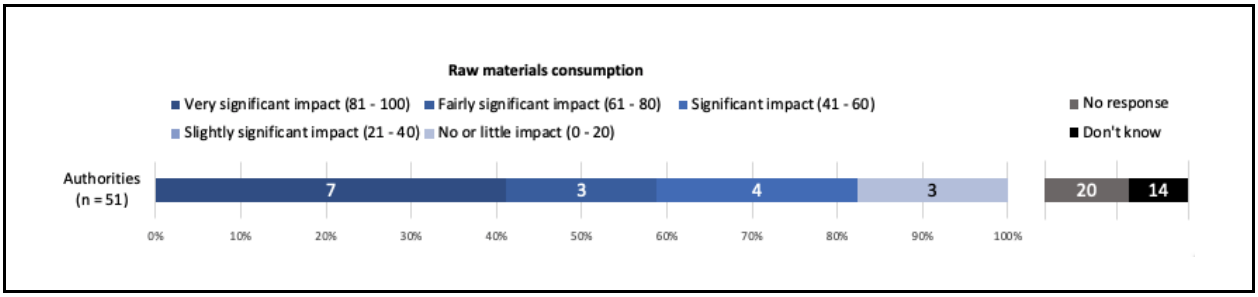


Figure A1: Q43(II): How would these additional reporting requirements affect the time you spend on quality assuring the data provided by facility operators?

Most respondents from authorities indicated that the time spent on quality assuring of data on raw materials consumption and composition of waste transfers would be significant (Figure A1).



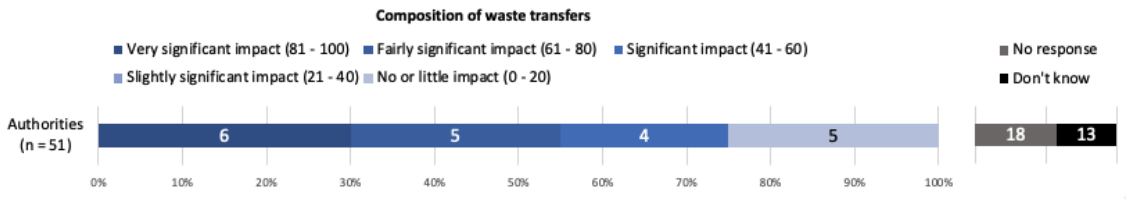


Figure A1: Q43(III): How would these additional reporting requirements affect the time you spend on quality assuring the data provided by facility operators?

Although none of the authority representatives could provide any supporting information on their predictions, several respondents indicated that the additional reporting requirements for quality assuring the data would remarkably increase the time spent on data validation as well as the bureaucratic/administrative burden not only for authorities, but also for operators, companies, and officers. Nevertheless, it was recognised by some authority stakeholders that the reporting IT tools would need to be updated accordingly. On the other hand, the other two stakeholder groups believed that reporting the above-mentioned additional requirements should not significantly affect their time, because this information was already monitored by economic operators and, therefore, the data was present. As an example, one of the stakeholders said that some industries are already reporting these additional requirements (except the data on raw materials consumption) on the national level, and the reporting of this information was not considered to be labour-intensive.

Reporting of disaggregated HFCs, HCFCs, CFCs and PFCs

A significant part of researchers, NGOs, public and authorities thought that the reporting of disaggregated HFCs, HCFCs, CFCs and PFCs was important, whereas only a small share of industry representatives also considered this requirement to be important (Figure A1).

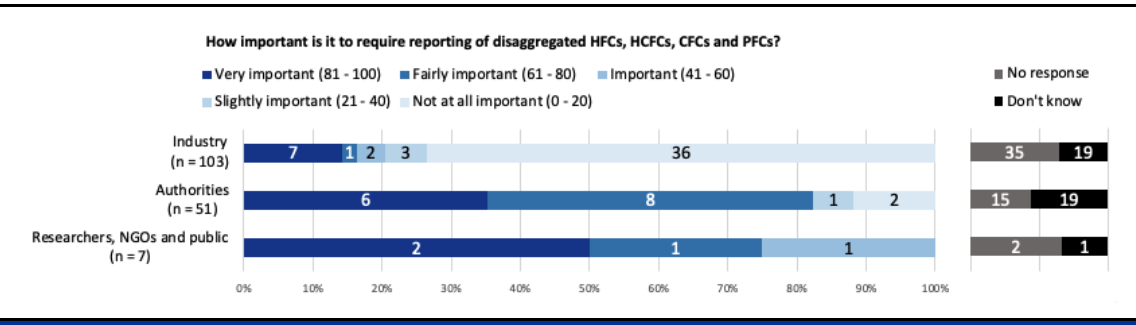


Figure A1: Q44: How important is it to require reporting of disaggregated HFCs, HCFCs, CFCs and PFCs?

As illustrated in the figure above, researchers, NGOs, public and authorities strongly believed that the E-PRTR should include reporting of disaggregated HFCs, HCFCs, CFCs and PFCs. When asked which individual sub-groups should be reported, two representatives of the former stakeholder group suggested that all F-gases and ODS, which are currently excluded from BREF/BAT discussions, should be indicated with a focus on by-product and fugitive emissions at all chemical plants in the EU. Similarly, authorities delineated the importance of reporting compounds that are in the EU F-Gas Regulation, but also the following:

- CO2 (kg);
- C2F6, CF4, CFC-11, CFC-12, CFC-13, HCFC-141b, HCFC-22, HFC-23, HFC-32, HFC-125, HFC-134a, HFC-143a, PFC-14, PFC-116, PFC-218, PFC-318/PFC-c-318, HFC-1234yf, HFC-1234ze trans;
- compounds with high global warming potential (GWP);
- individual gases required/defined by:
    - Annex I of Regulation No. 1005/2009;
    - Annexes I and II of Regulation (EU) No. 517/2014;
    - IPCC 2006 Guidelines;
    - 2019 Refinement to the 2006 IPCC Guidelines;
    - Montreal Protocol.

As one of the respondents noted, this is because data on the GWP of individual substances is already present:

> *"It is very important to require reporting of disaggregated HFCs, HCFCs, CFCs and PFCs because individual substances have different properties (e.g. global warming potentials range from hundreds to tens of thousands) which result in different impacts on the environment. Reporting on individual substances (or mixtures of them) would not be an added burden for reporters because the substances are not produced or used as a "group" but as specific substances, so the information is readily available."*

In contrast, only a minority of industry stakeholders recognised the importance of reporting individual substances admitting that mentioned components might have different lifetimes and different GWPs. Although the latter suggested that all compounds, including HFOs, should be reported, a large part of respondents noted that the aggregated reporting of the pollutants was enough, and no changes should be made. Nevertheless, some stakeholders indicated that, for example, in the iron, steel and glass industries, mentioned substances are either not released or not considered posing significant environmental risks. Alongside, several industry representatives shared a similar view on the limited importance of disaggregation and its questionable measurement reliability:

> *"With regards to the disaggregated reporting of HFCs, HCFCs, CFCs and PFCs: this might only make sense in cases where these groups or individual substances have in fact a significant and/or different environmental impact. If not, we question the need for a disaggregated reporting. As these substances are subject to a phase out ('sunset' substances), more detailed reporting will not make sense in the long run and should not be established for a limited, intermediate period. Besides this, it is also important to check whether reliable methods for the determination of the individual substances exist, which are a) leading to comparable results and have b) comparable sensitivities for the substances and comparable Limits of Detection (LoD) and Limits of Quantification "LoQ)."*

Finally, according to one of the industry representatives, some reporting obligations for these substances to regulators already existed, implying that it would only increase the administrative burden for the industry.

A1.2.9 Problem area 4: Reporting modalities and data flow

Releases are quantified and reported to the E-PRTR by individual facilities using a bottom-up approach. For some current and proposed E-PRTR activities, e.g., intensive livestock rearing, the bottom-up approach requires a large number of facilities to report. Such activities are often homogenous and are

carried out by many small facilities, but the aggregated releases are significant. Instead, a top-down approach could be considered where relevant national statistics or sector-specific statistics and relevant emission factors are used for selected activities, pollutants and/or sizes of facilities to derive reasonable estimates of typical releases. This could ensure a proportionate reporting burden reflecting the size and environmental impact of certain facilities and/or activities.

Stakeholders were asked if the introduction of flexibility in the EPRTR reporting modality for some sectors was important to them. The majority of respondents from all stakeholder groups thought it was important or at least slightly important (Figure A1). Few authority respondents commented that the top-down approach and more flexibility would not correspond with the principles of the E-PRTR, which is to report on the industrial facility level and also to increase the quality and precision of emissions data. One of the respondents commented:

> *"If this top-down information is submitted in an aggregated way, it would jeopardise the purpose of E-PRTR. E-PRTR was envisaged for large operators. Also, for the general public to check releases from large industrial activities in their vicinity."*

Several authority stakeholders noted that the flexibility could suit some sectors, such as livestock farming and could result in emissions data of better quality and a reduced administrative burden. Some respondents also mentioned that emissions are already estimated for the livestock farming sector or MCPs by applying emissions factors. However, standardisation of the reporting approach and emission factors across the EU would be important to increase the comparability of data. Some industry stakeholders also supported flexibility, especially to simplify the reporting for SMEs and reduce administrative burden, however not for all sectors and limited to certain activities. High-quality emissions factors and harmonised quantification and reporting procedures were seen as important by a few industry stakeholders. One of the respondents noted:

> *"The approach should be limited to activities where emissions are very proportional to the production level and very similar in nature. Moreover, emission factors should be sufficiently reliable and regularly reassessed."*

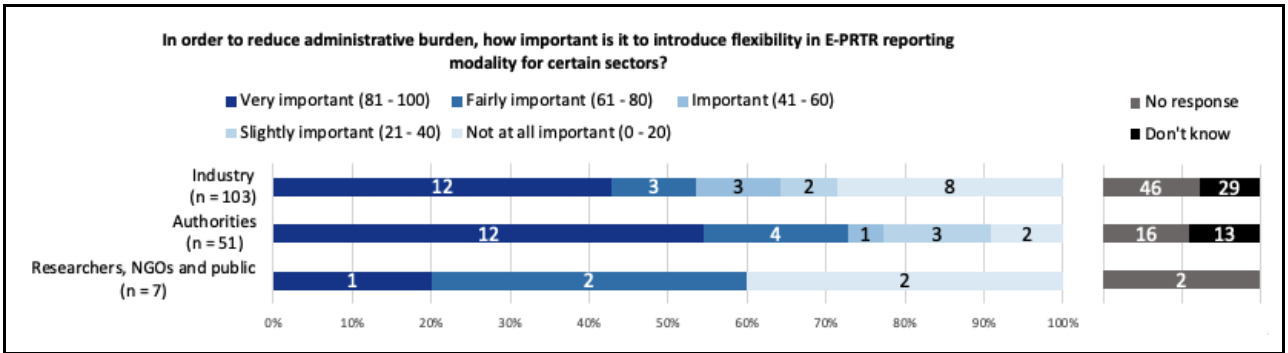


Figure A1: Q46: In order to reduce administrative burden, how important is it to introduce flexibility in E-PRTR reporting modality for certain sectors? E.g. national/regional collation for intensive livestock farming.

Stakeholders were also asked about the pros and cons of adopting a top-down approach (Q47. Beyond the reduction of administrative burden, what are the pros and cons of adopting a top-down approach for certain activities?). Authority stakeholders found many pros, such as better comparability and consistency of data, improved data quality, uniformity in assessment methods, more efficiency and cost-effectiveness,

reduced workload and cost to facility operators, better coverage of emissions, and applicability to complex sectors that are difficult to survey individually. However, some authority representatives thought that the data quality and accuracy could suffer, and important facility-level information would be lost.

Industry stakeholders also thought that the completeness and quality of data would increase with a top-down approach. Less focus on individual installations and sensitive business data and more focus on activity-related emissions were seen as pros. A stakeholder from the water industry noted that this approach would be cost-effective and precise enough. On the other hand, industry stakeholders indicated that this approach might not work for smaller sectors and facility-specific activities. One stakeholder commented:

> *"This top-down approach is not suited to facility-specific activities (i.e., the vast majority of industrial plants) where the aims and outcomes of the plants may be superficially similar, but the activities carried out on-site may differ with different plant designs."*

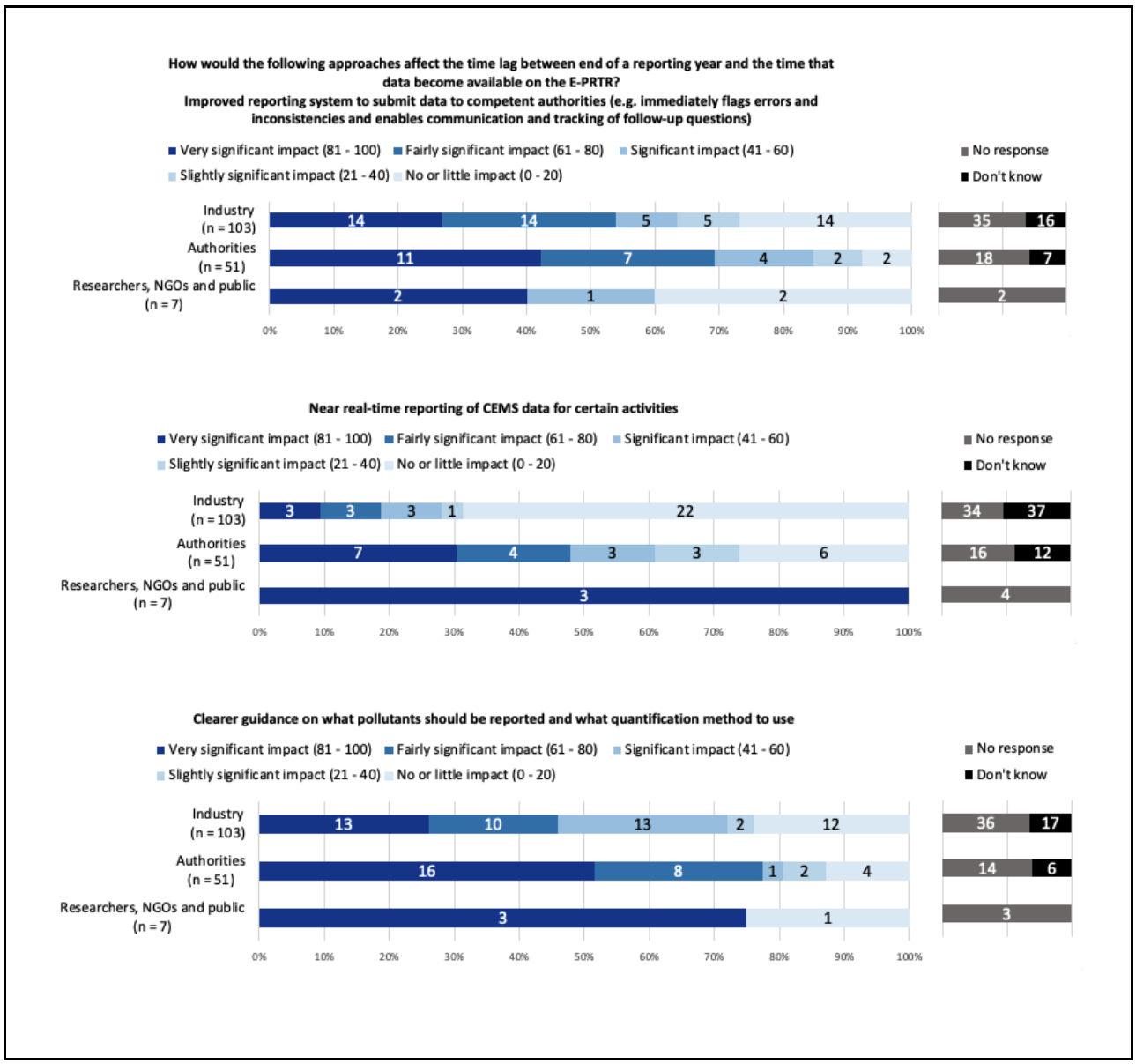
Furthermore, the approach might accelerate the inclusion of many new activities and increase the workload in terms of aggregate reporting. They also mentioned the risk of inaccurate estimates. Researchers and NGOs thought that this approach would assist automatisation and data reliability.

Table A1-7: Pros and cons of adopting a top-down approach for certain activities identified by different stakeholders.

	Pros	Cons
Industry	Less focus on individual installations and sensitive data	Might not work for smaller sectors
	Focus on activity-related emissions	Might accelerate inclusion of many new activities
	High share of coverage in some sectors	Increase workload in terms of aggregated reporting
	Increase in completeness and quality of data	Not suited for facility specific activities
	Cost effective and precise enough for water services	Risk of inaccurate estimates
		Effort to compile data would increase
Authorities	Better comparability and consistency	Uncertainty about data quality and accuracy
	Improved data quality	Loss of important facility-level information
	Uniformity in assessment methods	Less representativeness of data
	More efficient	Inaccurate estimates
	Cost-effective	
	Better coverage of emissions	
	Reduced workload and cost for plant operators	
	Beneficial for complex sectors that are difficult to survey individually	
Researchers, NGOs and public	Automatisation	
	Data reliability	

Approaches to shorten the time lag between reporting and publishing of data

Stakeholders were asked their opinion on several approaches for reporting and how it would affect the time lag between the end of a reporting year and the time that data become available on the E-PRTR. The improved system for reporting was considered to have a significant impact on the time lag by the industry and authority stakeholders. The views on a near real-time reporting of CEMs data for certain activities were different for different stakeholders – the industry did not think it would have a significant impact on the time lag, whereas researchers and NGOs thought the impact would be very significant. The majority of respondents from authorities indicated it would have a significant impact. All stakeholders indicated that the introduction of clearer guidance on what pollutants should be reported and what quantification methodologies should be used as well as guidance and tools to assist competent authorities with the review process would have a significant impact on the time lag. A similar trend was observed on improved submission systems to EEA, although fewer industry stakeholders thought it would have a significant impact (Figure A1).



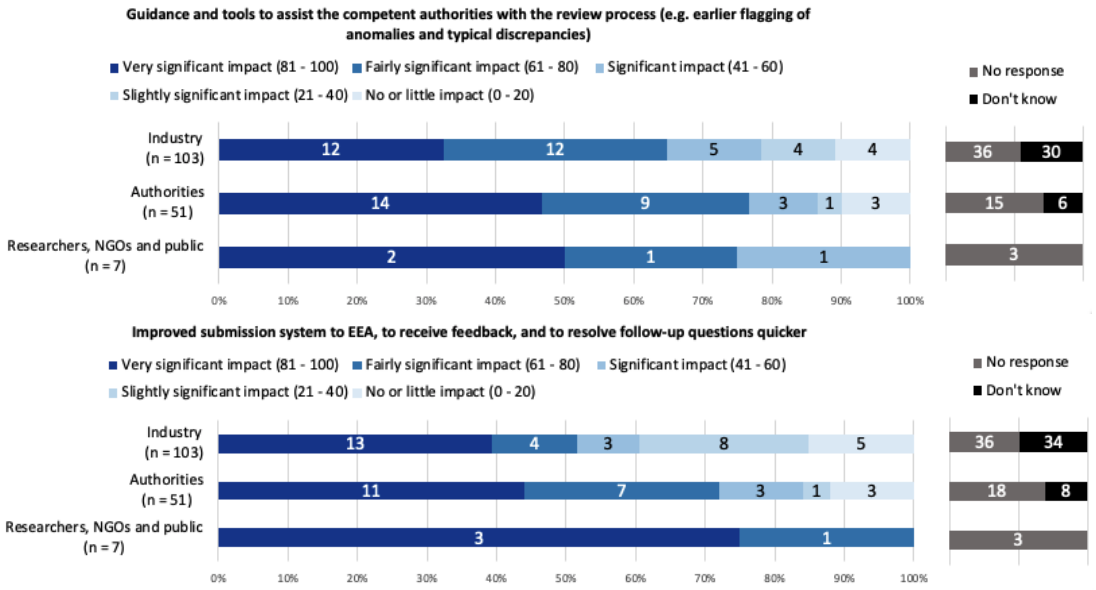


Figure A1: Q48(II): How would the following approaches affect the time lag between end of a reporting year and the time that data become available on the E-PRTR?

Many stakeholders from the industry indicated that the quality of data was more important than the speed at which it was reported. In addition, many did not support shorter reporting timeframes as E-PRTR was about long-term trends and not a tool to react to short-term emissions. One stakeholder even suggested increasing the reporting frequency to 3-4 years for facilities with no substantial changes to plant capacity, technology, or operation. One industry stakeholder commented:

> *"The quality of the information should supersede the speed. Even if "online reporting" is implemented for some activities (CEMS data), quality assurance would still be required and slow down the process at the end of the year. We question whether there is actually a need for faster reporting. The E-PRTR is not a "tracking tool" to monitor/identify, e.g., emissions above the emission limit levels authorized to a facility. The E-PRTR is about long-term emissions trends. Hence, annual reporting suffices. Instead, more focus should be on the quality of the data. Aligning the different reporting systems and focus on few tools could help improving the data quality and comparability. Changes in a legal entity (like ownership) lead to a disruption in the reporting history. Data have to be entered again, and entities under new ownership are not (necessarily) comparable anymore."*

Few industry stakeholders noted that the pressure on national PRTRs and operators would increase, and the suggested approaches would end in more confusion and errors and create an additional burden. In addition, several respondents thought that quality assurance would still be required despite online reporting.

Respondents from the authority thought that the implementation of the approaches would likely reduce the time lag but might increase administrative burden and costs or might prove unworkable or technically challenging. In addition, the online reporting would still need data validation. The stakeholder commented:

"With near real-time reporting, data could be available immediately. The data would have to go through some validation which would take some time. A system would have to be created to address outliers."

The respondent from the researchers and NGOs group noted that real-time reporting could significantly reduce the time lag, as for many parameters, there is already a continuous monitoring requirement. It was also suggested that the raw data would be made available without verification to reduce the time lag but to inform the viewer whether the data is 'verified' or 'pending verification'.

Challenges with the implementation of new reporting approaches

Stakeholders were asked about challenges that the implementation of each approach would create for their organisation.

- ***Improved reporting system to submit data to competent authorities (e.g., immediately flags errors and inconsistencies and enables communication and tracking of follow-up questions)***

For the authority stakeholders, the need for additional budget and human recourses, development of new IT systems, and technical knowledge to create and adopt such systems were seen as main challenges. The industry stakeholders had similar views and indicated that the need for more resources and the development of improved IT systems would create challenges. In addition, data security and confidentiality, as well as the non-compatibility of IT systems across the EU, were seen as an issue.

- ***Near real-time reporting of CEMS data for certain activities***

Administrative burden in dealing with CEMs flows, cost of operation, and technical implementation, such as data transmission in the EU, connecting different systems, and no existing interfaces, were seen as main challenges by the authority stakeholders. The industry stakeholders identified even more challenges: high investment and maintenance costs, the complexity of the system, the need for data validation and quality check, no approved methodologies, the development of data export systems, and lack of monitoring systems. Researchers and NGOs did not identify any challenges.

- ***Clearer guidance on what pollutants should be reported and what quantification method to use***

Additional costs for the development of the guidance and facility operators, administrative burden, variation between member states, harmonisation of data declaration, and the decision on what pollutants to use were identified as main challenges by the authority stakeholders. The industry stakeholders noted that different local and national standards, as well as changes in legislation and the adaption to guidance, were the main challenges. Finally, researchers and NGOs indicated that the risk of counter-productive effects might be an issue.

- ***Guidance and tools to assist the competent authorities with the review process (e.g., earlier flagging of anomalies and typical discrepancies)***

The authority stakeholders indicated resources, costs for development, training of personnel and stakeholders, technical knowledge, and ICT as main challenges. In addition, the mismatch between flagging criteria or benchmarks with national or facility level circumstances was also seen as a potential issue. For the industry, the comparability of different national PRTR systems across the EU was seen as the main challenge.

- ***Improved submission system to EEA, to receive feedback, and to resolve follow-up questions quicker***

The main challenge identified by the authority stakeholders was the availability of a Member State or the EEA to provide answers quickly. Different national PRTR systems across EU Member States and their reporting structure and/or process towards the EEA were seen as the main issue for the industry stakeholders.

Potential impacts of approaches to shorten the time lag

The industry and authority stakeholders were asked about the impact of the implementation of some or all of the approaches to shorten the time between the end of the reporting year and the availability of data on their organisations. The majority of respondents thought that the impact would be significant (Figure A14). The industry stakeholders noted that the approaches would lead to an increase in labour resources and costs. One industry stakeholder commented:

> *"Automated reporting can be costly and require intensive monitoring/maintenance. Standards are not always available. We question whether more reporting will lead to actual reduction of emissions. We stress to focus on the relevant emissions <…> The question is, for instance, whether quality assessment and additional reporting by the MS [Member State] is needed (or could be skipped for the sake of faster reporting). In the end, we need to focus on the overall picture in order to achieve significant emission reduction. The benefit of such implementation might not be in good relation to the costs."*

There were some contrary views in the authorities' stakeholder group regarding the impact of the implementation of the approaches. Some noted that it would increase the administrative burden and require additional resources. However, others thought it would reduce working time. In addition, it was seen as a way to improve the reporting process and make it more efficient. However, it was also highlighted that the changes would require technical knowledge as well as additional costs and training for personnel and stakeholders to adopt those changes. The authority stakeholder commented:

> *"Estimate that there would be significant impact due to ICT [Information and Communications Technology] development required to improve collection of data from reporters and reporting of data to EEA. This would be a long-term project (5-10 years) and many improvements will happen anyway as ICT and reporting systems mature."*

Several authority stakeholders thought that changes would reduce the time lag.

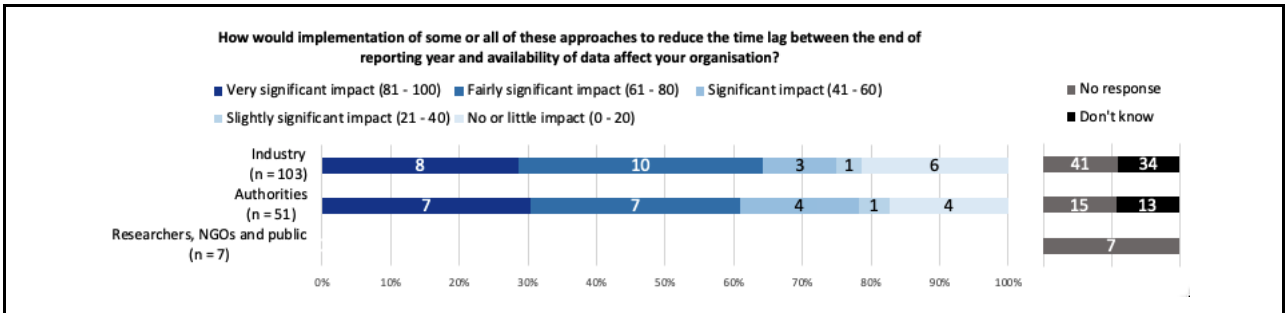


Figure A1: Q50: How would implementation of some or all of these approaches to reduce the time lag between the end of reporting year and availability of data affect your organisation?

A1.2.10 Problem area 5: Access to E-PRTR information

Reporting at sub-facility level

As illustrated below (Figure A1), researchers, NGOs and public were by far the most supportive of the requirement to report releases at a 'sub-facility level', even though there were only three responses from the stakeholders of this group. Compared to almost half of the authority representatives, who said that reporting by installation was very and fairly important, there were only five industry representatives who believed it to be a fairly important requirement. Instead, the majority of the latter group saw this type of reporting to be unimportant.

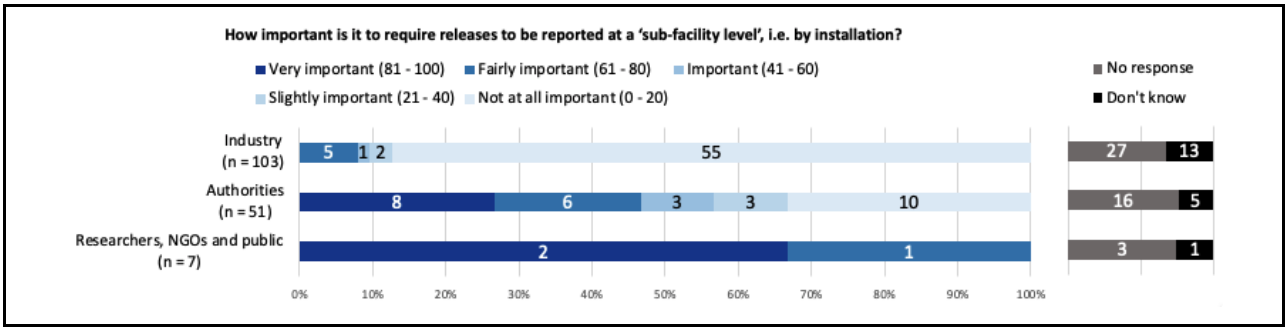


Figure A1: Q51: How important is it to require releases to be reported at a 'sub-facility level', i.e. by installation?

One of the key areas of concern highlighted by authority and industry stakeholders was a different understanding of the term 'installation' across the EU Member States. According to one of the authority representatives, an 'installation' was not necessarily a sub-set of a 'facility', emphasizing that the relationship between the two is still very unclear in the legislation. Nevertheless, the aforementioned groups raised some technical/practical concerns which might arise when moving from a facility to a sub-facility level. One of the respondents commented:

> *"It is very difficult to report emissions and waste transfer at a sub-facility level. Some things can be common to multiple units (e.g., water consumption). In many cases, infrastructures are shared, and emissions are common. Disaggregated values are not available."*

A similar view was shared by another authority stakeholder:

> *"If the idea is to move from facility level to sub-facility level, there is a risk for disaggregated individual installations to pass under reporting thresholds. Valuable information would then be lost."*

Accordingly, the concern has been raised by some stakeholders that should the reporting at installation level was implemented, all the current capacity and pollutant thresholds would need to be checked and, therefore, lowered because currently, they correspond to reporting at facility level only.

Although some representatives of authority believed that reporting at the installation level would make the E-PRTR more useful for BREFs as well as evaluation of different abatement techniques and policy measures allowing to mitigate the number of the most polluting facilities, a large number of industry stakeholders believed that it would not only have a limited benefit for the public but would also increase the costs and the administrative burden, especially for operators and authorities. Instead, the common view of industry representatives was that the public was interested in the overall view offered by the E-

PRTR, which currently balances between the right level of information and the right level of complexity. To ensure this, according to one industry stakeholder, comparability was the key:

> *"The E-PRTR Regulation aims to increase public awareness on environmental issues and increase public participation in environmental decision-making. It is a very useful tool to follow the environmental impact of facilities over time. <…> The natural scope of the E-PRTR Regulation should therefore remain at the 'facility' level, and the quality, clarity and comparability of the data should prevail over the quantity of the data. "*

Burden of reporting at a sub-facility level

The low level of support for the requirement to report at the installation level displayed by the industry stakeholders can be explained by the fact that almost all of the latter group believed that it would have a significant effect on their workload. Although researchers, NGOs and public displayed a similar position, the overall number of respondents for this group was remarkably lower compared to the number of industry stakeholders. Interestingly, a share of authority representatives who saw reporting at the installation level to have more than a moderate effect on their workload was fairly similar to those who saw it as moderately or even less significant (Figure A1).

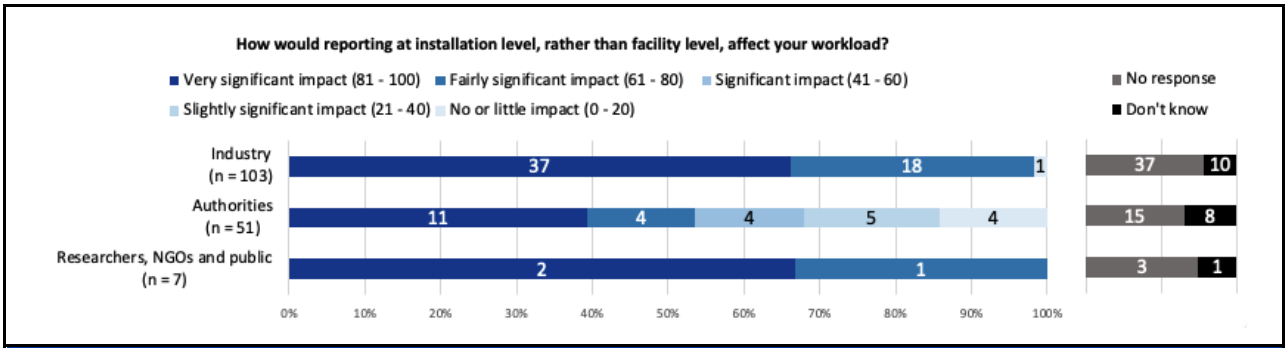


Figure A1: Q52: How would reporting at installation level, rather than facility level, affect your workload?

As illustrated above, all three stakeholder groups thought that reporting for each installation would result in a more complicated data collection process, where the effort and the time allocated would be multiplied by the number of installations. However, some authority stakeholders noted that it would only apply if industrial sites included more than one installation, which, in some countries, is not the case. Accordingly, it was proposed that reporting by activity rather than by installation would be a more time-wise approach, given that some installations might perform the same main or secondary activity. To illustrate, one of the industry stakeholders commented:

> *"For a steel plant, it currently takes two full working days only to put the gathered data into the online response system. The workload for reporting at installation level would rise significantly."*

Nevertheless, one of the respondents shared that the experience at the national level showed a substantial increase in the workload due to permanent discussions with authorities on definitions of installations/system boundaries and changing thresholds at the installation level.

Ease of access and use

All respondents from all three stakeholder groups thought it was easy to access/use published E-PRTR information (Figure A1).

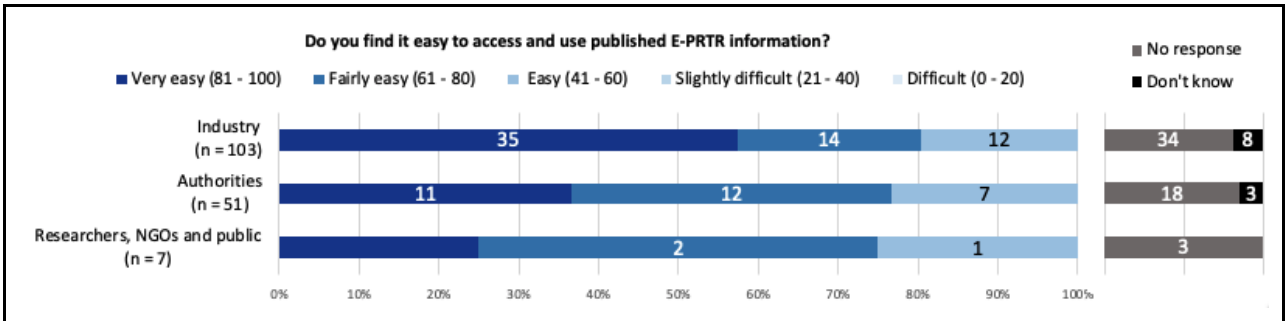


Figure A1: Q53: Do you find it easy to access and use published E-PRTR information?

Although easy accessibility was emphasised by all three stakeholder groups, authorities and industries noted that the easiness of access to the E-PRTR was highly dependent on the experience of using it. Accordingly, one of the authority stakeholders commented:

> *"It is easy because you are used to using this data, but it is complicated for a citizen who is not familiar with these platforms. The information on the complexes should be obtained in a simpler way through training pills for the general public. It should also be advertised that this registry exists since it is unknown to the population."*

With regards to areas for improvement, researchers, NGOs and public as well as authorities mentioned the insufficiency of data on permit conditions, pollution intensity compared to the benchmark values of similar activities and a limited comparison between activities/pollutants/waste/countries, which complicated the easiness of using published data.

Usefulness of E-PRTR data

Stakeholders were asked if the E-PRTR was useful for several purposes, such as to understand environmental concerns, increase transparency and engagement, inform policy development, increase the accountability of operators, prevent or reduce environmental pollution, and achieve the European Green Deal goals. More than 60% of all respondents indicated that the E-PRTR was very useful for understanding environmental concerns in their local areas. The majority of the authority and industry stakeholders also thought that the register was very useful for increasing transparency in environmental information and decision making, although this was not the case for researchers and NGOs (Figure A1-80).

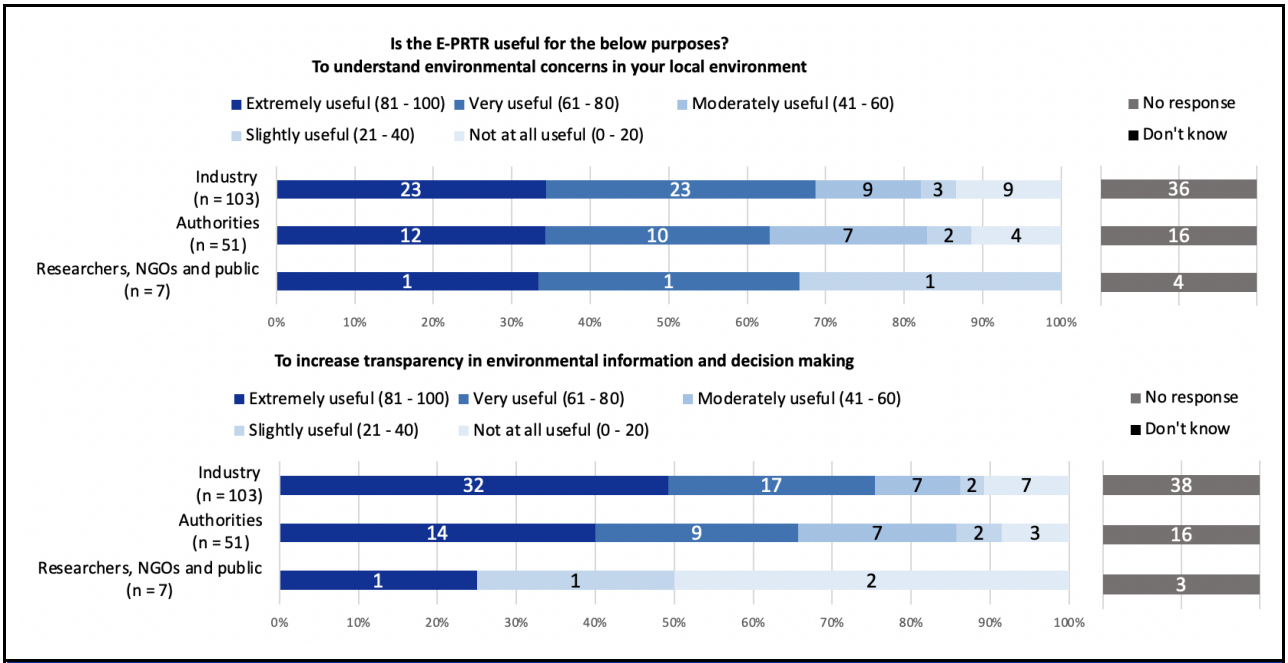


Figure A1-80: Q54(I): Is the E-PRTR useful for the below purposes?

Approximately half of all respondents indicated that the E-PRTR was useful for increasing the engagement of the public in environmental information and decision making and informing policy development on a national and EU level (Figure A1-81).

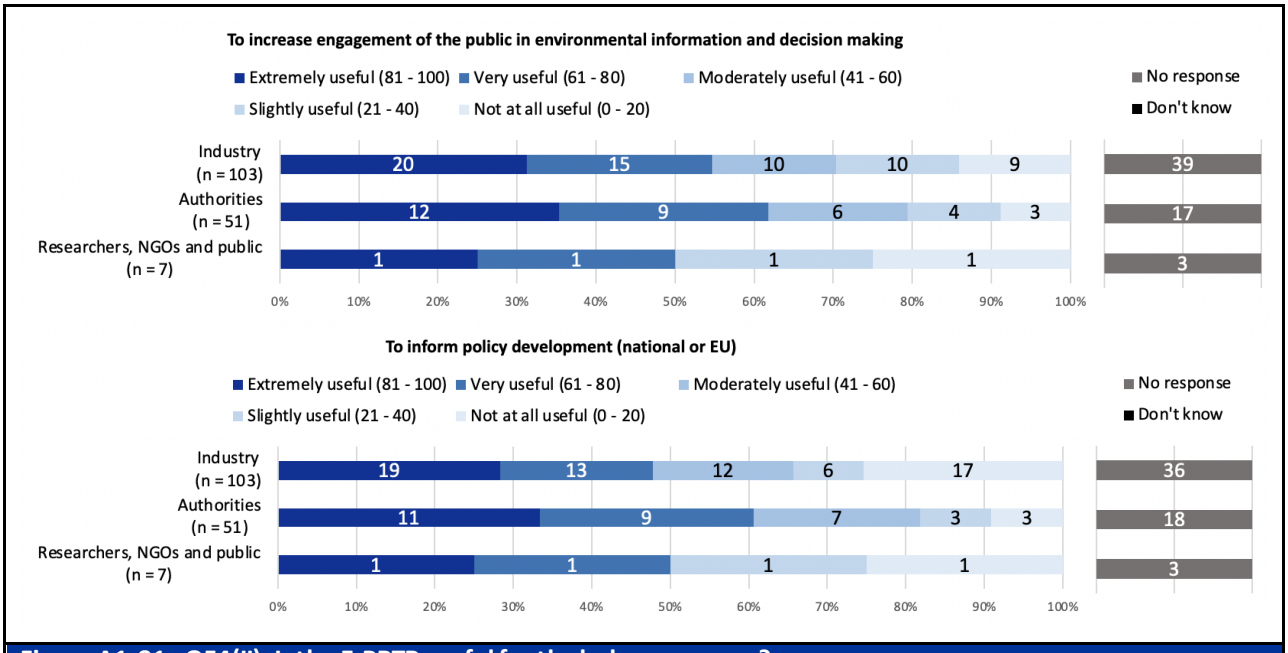


Figure A1-81: Q54(II): Is the E-PRTR useful for the below purposes?

The majority of the industry and authority stakeholders thought that the register was very useful to increase the accountability of operators of polluting activities and provide an incentive to improve their

environmental performance. Only half of the respondents from researchers, NGOs and public group thought the same. The majority of the authority respondents, researchers and NGOs indicated that the E-PRTR was useful for preventing and/or reducing environmental pollution, whereas less than a half of the industry stakeholders thought the same. Finally, only half of all respondents thought that the register was useful to achieve the European Green Deal goals (Figure A1-82).

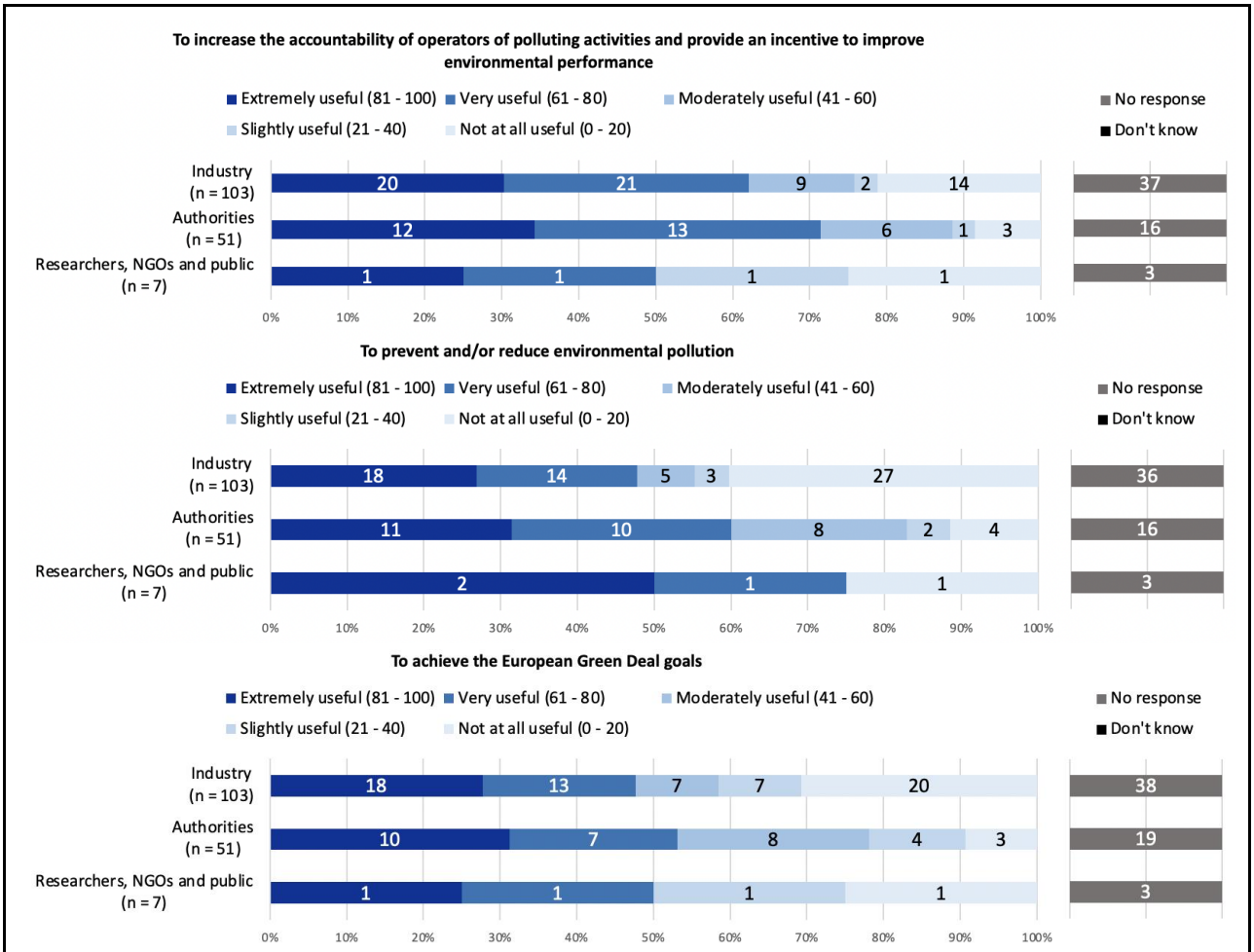


Figure A1-82: Q54(III): Is the E-PRTR useful for the below purposes?

Some authority respondents noted that the register does not provide a complete picture of industrial emissions, and more information and data should be provided by the industry (e.g., lowering thresholds, providing contextual information). Few stakeholders commented:

"The E-PRTR can be a very useful tool in future, but only if it is enhanced (additional activities and pollutants, lowered thresholds, contextual information, reporting on installation level)."

"For accountability of operators, the information is not specific enough to evaluate environmental performance/accountability."

"Generally not very useful due to very few and scattered data. In a [country] context, the thresholds for the covered substances are very high, which means that only relatively few facilities have to

report data. Many [country] facilities are below the capacity thresholds. A number of types of activities are not covered by Annex 1 and therefore do not report emissions (e.g., biogas plants and cattle farms).”

Authority stakeholders thought that the E-PRTR could be one of the tools to monitor the progress towards achieving the EU Green Deal Goals, especially the Zero-Pollution framework. However, some contextual information would be needed for informing the Circular Economy and decarbonisation. Respondents from this group also noted that the register did not prevent or reduce pollution, and it was difficult to compare data to environmental or health impacts.

Industry respondents noted that the register was too technical for the public in general; therefore access and availability should be reinforced to improve transparency and engagement. Some stakeholders thought that the reporting to E-PRTR led to reductions in emissions or improvements in the environmental performance of installations. One industry stakeholder commented:

“Reduction of pollution is the consequence of a) environmental legislation and b) environmental awareness of companies. There is a minimal contribution of PRTR. To understand environmental concerns in your local environment, MS would have to provide local registers of a) diffuse pollution releases and transfers b) sector-specific registers, e.g., domestic heating, transport. PRTR is to be seen as an inventory, not as a measure to achieve political goals.”

Several industry stakeholders emphasised that the register should not be used as a tool for evaluating the progress of EU policies and legislation or the performance of installations. Few stakeholders commented:

“E-PRTR is only a reporting tool and nothing else. For plant, the most important is to apply the permit requirements, which includes BAT, national and local requirements.”

“The E-PRTR is well designed for specific and targeted purposes (i.e., providing environmental information and data for the public on the effectiveness of the policies in place and eventually inform policy development). We abstain from commenting on the usefulness of the E-PRTR regarding any other purposes listed here since we believe it should not be redesigned with a view to meet any other objectives but the existing ones. We suggest that an upcoming revision of the guidelines should aim at improving the effectiveness, completeness and accuracy of the E-PRTR but do not support that it is amended with a view to address "purposes" that are already or may be better addressed through other existing or new policies and measures.”

According to the industry stakeholders, improved consistency and robustness of the E-PRTR would improve the accountability of plant operators, which would have a positive knock-on effect on the environment.

One of the respondents from researchers, NGOs and public group commented on all aspects:

“For local effects, the data needs to be put in context with the situation regarding the Environmental Quality Standards (e.g., water quality, air pollution, soil quality, etc. in the area) <…> To understand 'concerns' it is important to enable the citizen to put into context / compare the facility level performance with the "best in class" / average performance at EU level for the same facility <…> there is hardly any information in relation to "decision making' <…> since the status of decision making (potential for engagement opportunities) is not reported there is no ease of engagement in decision making or other sort of engagement is not incentivized / unclear) <…> Policy development

related information is missing <…> accountability of operators is very limited since there is just a reporting obligation on the "business as usual" situation (annual pollution loads) on a limited set of pollutants <…>. There is no reporting on the techniques/practices to prevent or reduce pollution at the source and during the full LCA. This is particularly important to consider for certain industries where the pollution impact may be even "exported " outside of the EU (e.g., pesticides, Biocides production or LVOC production) <…> for the EU Green Deal: the PRTR could help tracking progress towards achieving the SDG and EU Green Deal <…> Enabling all citizens to understand the content is certainly important.

Availability in languages other than English

When inquired how important it was for the E-PRTR to be available in languages other than English, more than a half of industry and authority stakeholders indicated that it was a fairly or very important aspect. Out of the two respondents from researchers, NGOs and public group, one indicated that it was important, and the other one that it was not important at all (Figure A1-83).

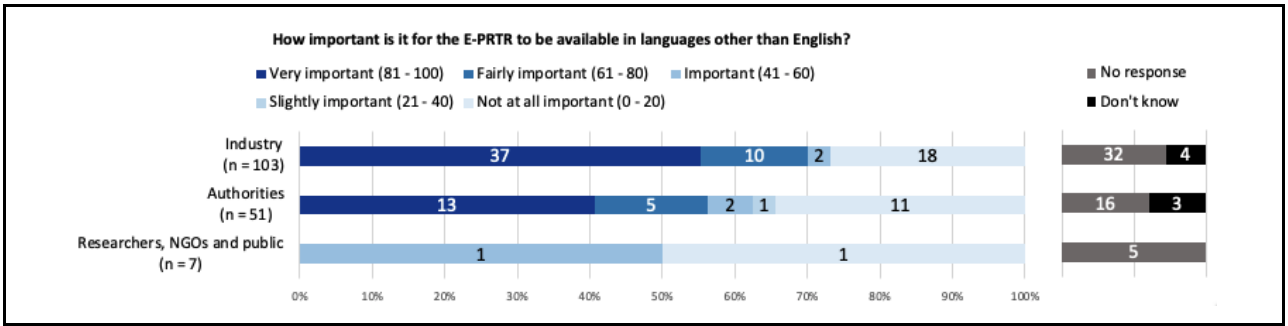


Figure A1-83: Q55: How important is it for the E-PRTR to be available in languages other than English?

A1.2.11 Problem area 6: Releases from diffuse sources and releases from products

Article 8 of the E-PRTR Regulation fulfils the Kiev Protocol requirement to include information on releases from diffuse sources with a sufficient level of geographical disaggregation. The Kiev Protocol defines "diffuse sources" as the "many smaller or scattered sources from which pollutants may be released to land, air or water, whose combined impact on those media may be significant and for which it is impractical to collect reports from each individual source". This definition covers, for example, road transport, shipping, aviation, agriculture, fuel distribution, domestic heating and facilities that are below PRTR capacity thresholds.

The previous limited E-PRTR exercises to estimate releases to air and water from diffuse sources are now substantially out of date. More current data on releases from diffuse sources would provide a more holistic and comprehensive quantification of releases from EU anthropogenic sources to set releases from EU (agro-)industrial sources in context.

Future data could be compiled by Member States providing information specific to their country; by new Commission studies; and/or by utilising spatially resolved information delivered by other reporting mechanisms, e.g., the National Emissions Ceilings Directive (NECD, 2016/2284/EU), air emissions

inventories or Water Information System for Europe (WISE) data under the Water Framework Directive (2000/60/EC).

Access the E-PRTR information on releases from diffuse sources

When asked if they ever accessed the E-PRTR information on releases from diffuse sources, half of the authority respondents, third of the industry respondents and two-thirds of researchers, NGOs and public said 'yes' (Figure A1-84).

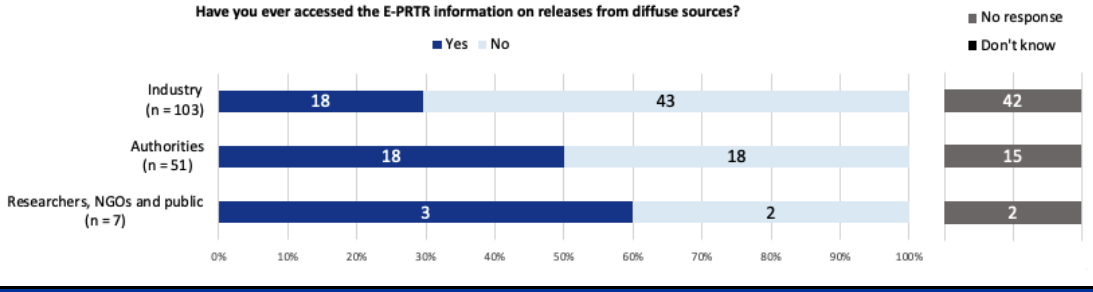


Figure A1-84: Q56: Have you ever accessed the E-PRTR information on releases from diffuse sources?

How to improve E-PRTR information on releases from diffuse sources

All respondents to a lesser or higher extent thought that proposed options would help to improve the current E-PRTR information on releases from diffuse sources (Figure A1-85).

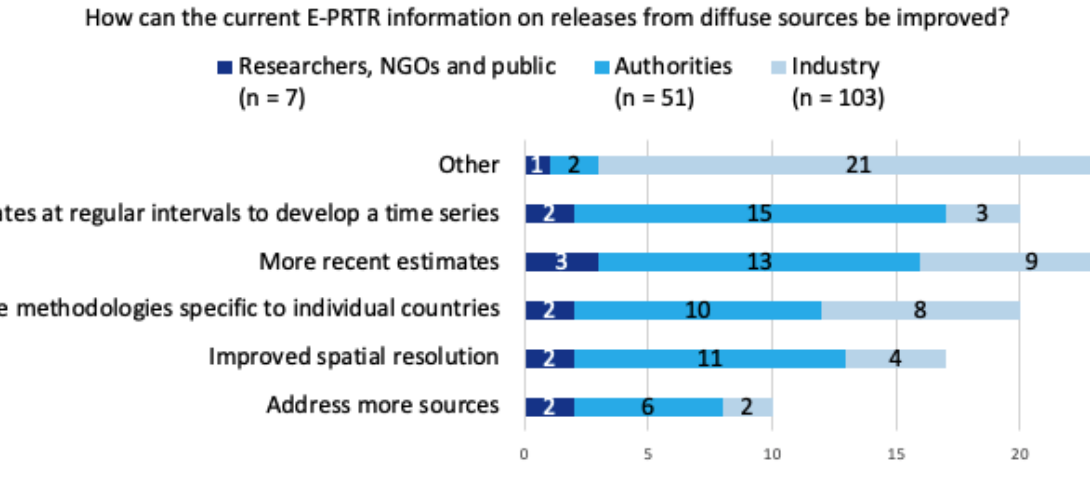


Figure A1-85: Q57: How can the current E-PRTR information on releases from diffuse sources be improved?

Most stakeholders indicated that a Member State's report using standardised template and emissions factors at regular intervals would be the best way to compile estimates of releases from diffuse sources. Member State's report using methods that best capture the situation in their country at regular intervals was also needed as a preferred way by stakeholders (Figure A1-86).

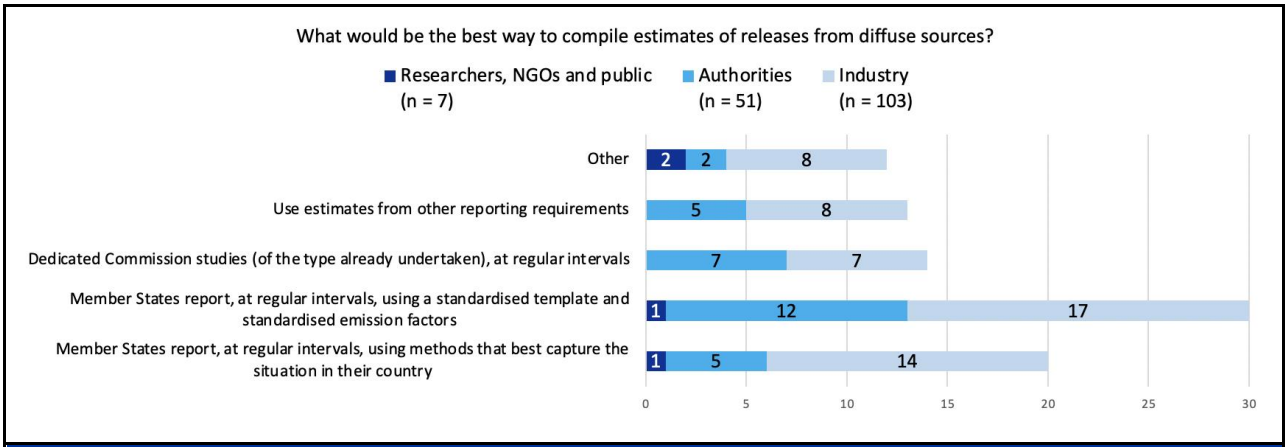


Figure A1-86: Q58: What would be the best way to compile estimates of releases from diffuse sources?

The authority respondent noted that the standardisation of reporting should be implemented:

> *"In principle, it would be best using a standardised template for all EU Member States, but there may be circumstances in each Member State that speak in favour of using methods that best capture the situation in their country."*

In addition, one respondent from the authority suggested considering estimates used for river basin management plans under WFD.

Some industry stakeholders thought that the E-PRTR was not well suited for reporting on diffuse emissions:

> *"Due to the high complexity involved, EPRTR is poorly suited for providing information on releases from diffuse sources. If diffuse emissions are added, the most important boundary condition is that the estimates are made in a consistent way (i.e., not each member state according to different assumptions) and in a realistic way (i.e., not driven by worst-case default assumptions). This would require a centralised approach in order to avoid the variability which is currently experienced in such emissions."*

One of the industry stakeholders did not see the need for improvements at all:

> *"There is no need for improvement as the relevant diffuse emissions for chemical industry are already included in the national reporting to E-PRTR. Changing the reporting requirements now will generate incomparable data to previous years. We also question the collection of diffuse emissions is necessary at all due to the different national prevention strategies for diffuse."*

The usage of standardised emissions factor in the absence of measured data was proposed by the respondent from researchers, NGOs, and public group.

Releases from products

Stakeholders were asked about the importance of the E-PRTR to estimate releases from products. The large majority of industry stakeholders thought it was not important at all, whereas all researchers and

NGOs thought it was important. Most of the authority respondents indicated that it was important (Figure A1-87).

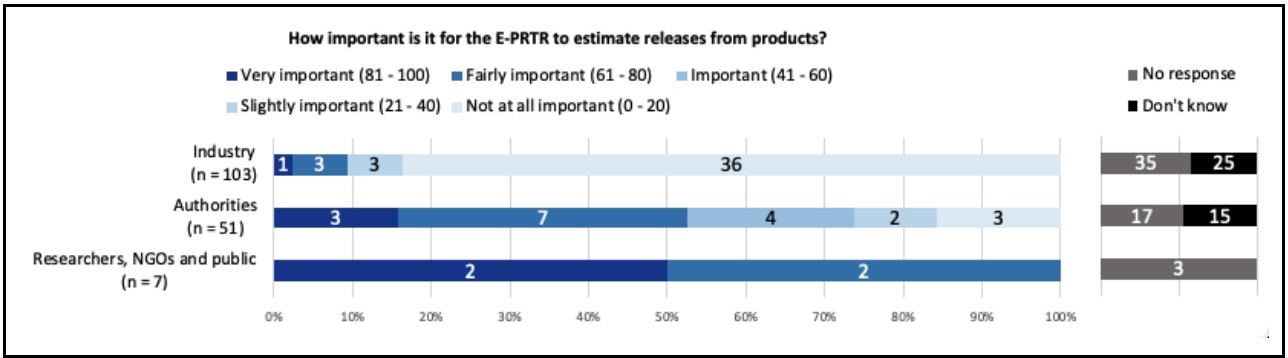


Figure A1-87: Q59: How important is it for the E-PRTR to estimate releases from products?

Several respondents from authorities noted that emissions from products were not in the scope of the E-PRTR and including these emissions would completely alter the concept of the register. Authority respondent commented:

> *"The focus in E-PRTR has primarily been on emissions from industrial sources, and there is still a need to improve data from industrial sources. The significance of releases from products is probably unclear. There is a varying release from various products, and it is extremely difficult to make a determination of the releases as release can occur in different degrees depending on the product's use over time and place."*

> *"To estimate releases from products sounds closer to Life Cycle approach. It can't be adopted partially. If you replace the current approach with this new approach, you possibly will lose the availability and consistency of time series by pollutants and activities."*

Nevertheless, several authority stakeholders commented that they were missing emissions from the use of products, e.g., pharmaceuticals. One of the respondents saw the need to address emissions from products in the future, but it should be supported by extensive research.

Many industry stakeholders noted that emissions from products were out of the scope of the E-PRTR as this is already a part of the REACH Regulation. One stakeholder commented:

> *"There is currently no clear definition of "products" and "releases from products" but, in any case, such releases extend well beyond the scope of the E-PRTR Regulation. We do not see how this type of information can be made compatible with the current scope of the E-PRTR. We believe that the E-PRTR Regulation is not the appropriate instrument to tackle releases from products."*

In addition, the industry stakeholders thought that the estimation of emissions from products would be almost impossible due to the complexity of the chemical industry. One of the respondents commented:

> *"Product emissions depend on the use of the product and the circumstances of this use. Therefore, the number of possible scenarios for each product can be infinite and, of course, such an assessment would be beyond the scope of each SME. The time factor is another aspect to consider. The standards for products likely to generate negative effects normally already include methodologies*

adapted to the product for their evaluation. Therefore, it makes no sense to think of adopting such an approach."

According to the researchers and NGOs, there is a strong need to estimate releases from products.

Mechanisms to derive estimates of releases from products

Stakeholders were asked to suggest mechanisms to derive estimates of emissions from products (Q60. What do you consider would be the best mechanism to derive estimates of releases from products?). Several authority stakeholders suggested using the top-down approach and applying emissions factors. Few respondents commented:

"If national statistics are complete and available for the relevant different products, a review of emission factors from products must be provided and agreed by reporting entities; in this way, estimates could become feasible."

"Top-down approach gathering the lifetime of products, the concentration of pollutants in the products, and the volatility/transmission to humans of the pollutant trapped in the product."

Although most of the industry stakeholders thought that emissions from products were out of the scope of the E-PRTR, some respondents suggested using software and modelling to derive estimates of releases. The respondent from researchers, NGOs and public suggested making the manufacturers of products responsible for annual reporting of the estimated releases from products they sell each year. In addition, one respondent commented:

"Real measurements data extrapolated to representative data sampling basis, based on "worst case" assumptions that may be rectified where evidence to the contrary is provided <...> For products that are foreseen to be released to the environment under "normal conditions of use" (e.g., pesticides, biocides, etc.) the precise tonnage bands, destination and applications of use should be known and hence reported."

A1.2.12 Remarks

Please provide any other comment or suggestion you would like to share regarding the revision of the E-PRTR Regulation

Fifty-two general remarks were received from the stakeholders. National, regional and local authorities provided 13 comments, business and industry associations – 29, private companies – 8, NGO – 1 and European institutions – 1. Six themes emerged in the remarks (**Figure A1-88**).

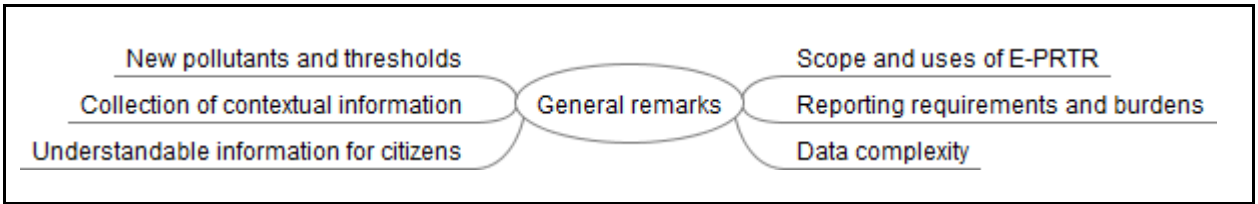


Figure A1-88: Major themes in general remarks

Many comments about the **scope and uses of the E-PRTR** were received from industry/trade associations. In general, comments advocated no changes in the scope and uses of the E-PRTR. E.g.:

> *"E-PRTR should remain a tool dedicated to emission reporting, serving pollution prevention directives such as IED, Water Framework directive, NEC etc."*

> *"E-PRTR proved to be a useful tool for monitoring emissions, but further enhancements would only increase complexity without granting additional benefits."*

In other comments, the industry/trade associations objected to the use of the E-PRTR for assessing the performance of different facilities and identifying key environmental issues:

> *"The E-PRTR Regulation shall not be the reference to identify well-performing installations for the BREF review process. While the E-PRTR is about absolute amounts of substances emitted by a facility during a year (i.e. one or several IED installations most of the time covering much more than one unit/process), the Seville process gathers and analyses data at unit/process level in view of setting performance standards for the different sectors. As a result, E-PRTR data cannot and should not be used to identify well-performing plants in this process. In order to secure that the integrated approach is followed, the correct analysis of all environmental impacts has to be performed when deciding the list of well performing plants. Only with balanced trade-off decisions can the environment be protected as a whole."* (Industry/trade association)

> *"The E-PRTR Regulation shall not be the reference to identify key environmental issues in the context of the BREF making process. Pollutants of relevance listed under the E-PRTR Regulation do not have the vocation to automatically become Key Environmental Issues (KEIs) in the Seville process. For the purpose of identifying KEIs, it is crucial to assess the potential for the BREF review to improve the situation."* (Industry/trade association)

> *"Recently, there has been discussion on the fact that EPRTR should help identifying the best performers for the Sevilla process under the IED. We believe that this approach is not appropriate, as EPRTR cannot take into account many of the factors (which are indeed analysed during the Sevilla process), and there is the concrete risk of setting benchmarks which depend on factors unrelated to the plant management (and therefore permits), as e.g., plant size, economic aspects."* (Industry/trade association)

Other groups of respondents provided no similar remarks.

Comments about adding **new pollutants** were expressed both by the respondents from industry and authorities. However, the remarks in each group were essentially different. The authorities proposed adding new pollutants or combining the addition of new pollutants (e.g., "for the emissions in water permethrin is important, but Bifenthrin, deltamethrin and esfenvalerate not known") with decisions on the thresholds (e.g., "it does not make sense to lower capacity thresholds without also lowering thresholds for the list of substances").

Differently, **opinions varied among the representatives of industry/trade associations and private companies**. Some of them welcomed new pollutants, while others opposed the addition of new pollutants or expressed concerns about some groups of them (PFAS, per- and polyfluoroalkyl substances). E.g.:

"We believe that a better inclusion of further sources in E-PRTR would possibly help to meet the policy objectives. It may help to show that industrial sites are not always the main emitters of certain pollutants." (Industry/trade association)

"The addition of new pollutants or the decrease of existing reporting thresholds may erroneously display a picture of 'increasing' emissions of many facilities. Moreover, the measurement and subsequent reporting of new pollutants would entail significant costs (e.g. additional work time, measurement costs, hiring of third-party laboratories, etc.). These undesired effects could be mitigated by ensuring that truly relevant pollutants are reported in the E-PRTR." (Industry/trade association)

"*In questions 25 and 26, it is suggested that all 'Per- and Polyfluoroalkyl Substances' (PFAS) as a 'Group' be included as pollutants in the E-PRTR. 'PFAS' is a very broad term covering a wide universe of substances with different physical, chemical, environmental and biological properties. Some PFAS are used in gaseous form, while others are used in liquid or solid form. In addition, the current OECD definition of 'PFAS' include polymers, such as fluoroplastics, fluoroelastomers and perfluoropolyether as well. It is therefore not scientifically sound to have a unified threshold for releases to air, water and soil for such a large group of chemicals."* (Private company)

Several comments from industry/trade associations noted that lowering **thresholds** for pollutants is not necessary and might have negative impact (e.g., increased reporting costs, misleading data):

"*We don't see the need to lower the p. e. thresholds for X [name of the sector removed to ensure confidentiality – author comment] since reporting data is representative and lowering thresholds would lead to increased costs*." (Industry/trade association)

"*In the case of activity thresholds, the conclusions of ICF et al. 2020 that there ""were no cases where IED thresholds were lower than the E-PRTR thresholds"" should be noted. The addition of new pollutants or the decrease of existing reporting thresholds may erroneously display a picture of 'increasing' emissions of many facilities."*

A lot of comments from national/regional/local authorities and representatives of industry/trade associations considered **reporting requirements and burdens**. Authorities were mostly concerned with implementing new reporting requirements and provided recommendations how to make them work. E.g.:

"We suggest that any increase in reporting obligations for new pollutants and new activities are increased in a stepwise level in order to give industry and operators time to adapt to new obligations."

"Modify article 9 .1 including Article 9 Quality assurance and assessment 1. The operator of each facility subject to the reporting requirements set out in Article 5 shall assure the quality of the information that they report."

"For reasons of coherence and for reasons of practicability activities in the scope of E-PRTR and IPPC activities should be streamlined. Reporting obligations under UWWTD and PRTR should be coordinated."

However, in the comments by industry/trade associations, the introduction of new **reporting requirements was mainly associated with increased administrative burden and costs**. E.g.:

"*To keep it as pragmatic as possible and avoid additional administrative burden and excessive additional costs*." (Industry/trade association)

"*The European Commission should greatly simplify the reporting obligations of companies and activities, as information is duplicated, at a significant cost, without many (or very few) environmental benefits*." (Industry/trade association)

"The burden of measuring/monitoring and reporting pollutants in E-PRTR should be kept to the minimum. Pollutants to be reported should be relevant for the sector and linked to the pollutants mentioned in the BREFs." (Industry/trade association)

Only one comment from a national authority mentioned administrative and cost burdens for businesses as well, e.g., "In answering this form, no consideration has been given to administrative and financial burdens for the business community. In addition, this answer has not taken a position on whether possible changes are politically and economically realistic to implement.".

The comments addressed the issue of **providing understandable information for citizens**. However, the comments from industry/trade associations emphasised the relation between requirements to provide contextual information and the growing complexity of information for its end-user. E.g.:

"User friendliness of the data submitted - for the different purposes and objectives- is to be improved. It does not need to be a standalone instrument but should fulfil the various needs of the other EU environmental acquis policy frameworks to track progress towards achievement of the set objectives, share better knowledge on how to continuously improve and rate efforts made by all economic actors to that end." (NGO)

"The main effort to improve the PRTR need to focus on improving the website in order to ensure the public better access and understanding of the concept. We do not support additional reporting requirements. The focus should be on improving the data quality and the presentation of the reported data in the current regulation." (Industry/trade association)

"The E-PRTR is a tool to inform the public and foster public participation in environmental decision-making. It is not suitable for evaluating progress of the IED. Collected data should be focused on pollution. It is not necessary to gather data on all parameters." (Industry/trade association)

"There are still many gaps to fill in this context, and it is of absolute importance to fill these gaps in order to reach as many citizens as possible with the right level of complexity." (Industry/trade association)

Furthermore, the issue of **collection of contextual information** received substantial attention of industry/trade associations that abundantly commented on it. In most cases, the requirement to collect contextual information was viewed in a negative light, and issues of confidentiality and reporting burdens were highlighted. E.g.:

"In order to have a complete and meaningful picture one should collect a very large amount of contextual information (e.g., plant configurations, size, geographical conditions, capex and opex, etc.) and this would require a lot of effort and time from operators and CA. This will also generate confidentiality issues, as this contextual information could be used to derive confidential information, especially if plant specific." (Industry/trade association)

"If more detailed information down to the level of individual installations / units / processes would be requested, the time spent on gathering and reporting such data would multiply without any environmental benefit." (Industry/trade association)

"The addition of contextual information to the E-PRTR would create unwelcome complexity to the E-PRTR. It is doubtful that data such as water, energy or materials consumption, which are very site-specific, would serve any purpose in the context of the E-PRTR Regulation. Moreover, the reporting of such data, as already experienced for the reporting of production volumes, would often fall under rules protecting the disclosure of confidential business information (CBI) or competition law." (Industry/trade association)

The issue of data **complexity** and the complexity of the E-PRTR that would increase with new requirements was visible in various comments by the representatives of industry/trade associations and private companies. Additionally, a bunch of comments addressed different aspects of complexity that could possibly result from the revision of the E-PRTR Regulation. E.g.:

"E-PRTR proved to be a useful tool for monitoring emissions, but further enhancements would only increase complexity without granting additional benefits." (Industry/trade association)

"This register is not necessary from an industry point of view. If the system is maintained, the existing system should remain in place without changes/extensions so as not to overload the system. E-PRTR gives a good overview of the emissions of the different sectors. The data basis in our country [country name has been removed to ensure anonymity – author comment] is satisfactory. Additional data collection in E-PRTR is not necessary, the data is already available in the authorities." (Industry/trade association)

"The already complex regulations must not become even more complex. This would also increase the workload on company level significantly. E-PRTR is an information tool and not a control or benchmarking tool. Different plants, especially in the chemical industry, will lead to non-comparable data. The tool can therefore lead to wrong conclusions." (Private company)

To summarise, general comments by the national/regional/local authorities mainly focused on the suggestions that would help introduce E-PRTR changes or make them work. Differently, industry/trade associations and private companies drew attention to challenges that could potentially arise for businesses as a result of introducing the suggested E-PRTR changes (in particular, in the areas of pollutants and their thresholds and providing contextual information).

A1.3 Interviews, workshop and focus groups

A1.3.1 Overview

Forty interviews were conducted with the representatives of public authorities, civic societies and non-profit organisations, as well as industry representatives. The interviewees represented international bodies, the European Union institutions, national authorities, industry or trade associations, non-governmental and other organisations.

Notes made by the interviewers were used for analysis. Analysis was complemented by written position papers and responses provided by the respondents.

Two stakeholder workshops were held during the study period:

- The first Stakeholder Workshop was held online on 15 December 2020. The aim of the workshop was to provide more information on the impact assessment process, work plan and the follow-on consultations, and present the problems together with the possible policy options being considered in the impact assessment, which formed the focus of consultation activities. Webinar recordings and slides are available for download here and from the European Commission CIRCABC website.
- The second and final Stakeholder Workshop was held on 9 July 2021. The purpose was to present the policy options considered for each problem area, the preliminary results of the assessment of their impacts, and the results of the consultation activities. Webinar recordings and slides are available for download here and from the European Commission CIRCABC website.

Two focus groups were held to refine the assumptions used for the impact assessment and better define some of the measures under consideration:

- The first focus group was held online on 2 September 2021 and saw the participation of 15 stakeholder representatives. It focused on the discussion of the potential inclusion of additional activities and pollutants in the scope of the Regulation, and the associated capacity and reporting thresholds.
- The second focus group was held online on 3 September 2021 and saw the participation of 17 stakeholder representatives. It focused on the discussion of the issues around the provision of contextual information, reporting modalities, access to E-PRTR information and reporting of diffuse sources.

Figure A1-90 shows the total number of respondents broken down by consultation activities.

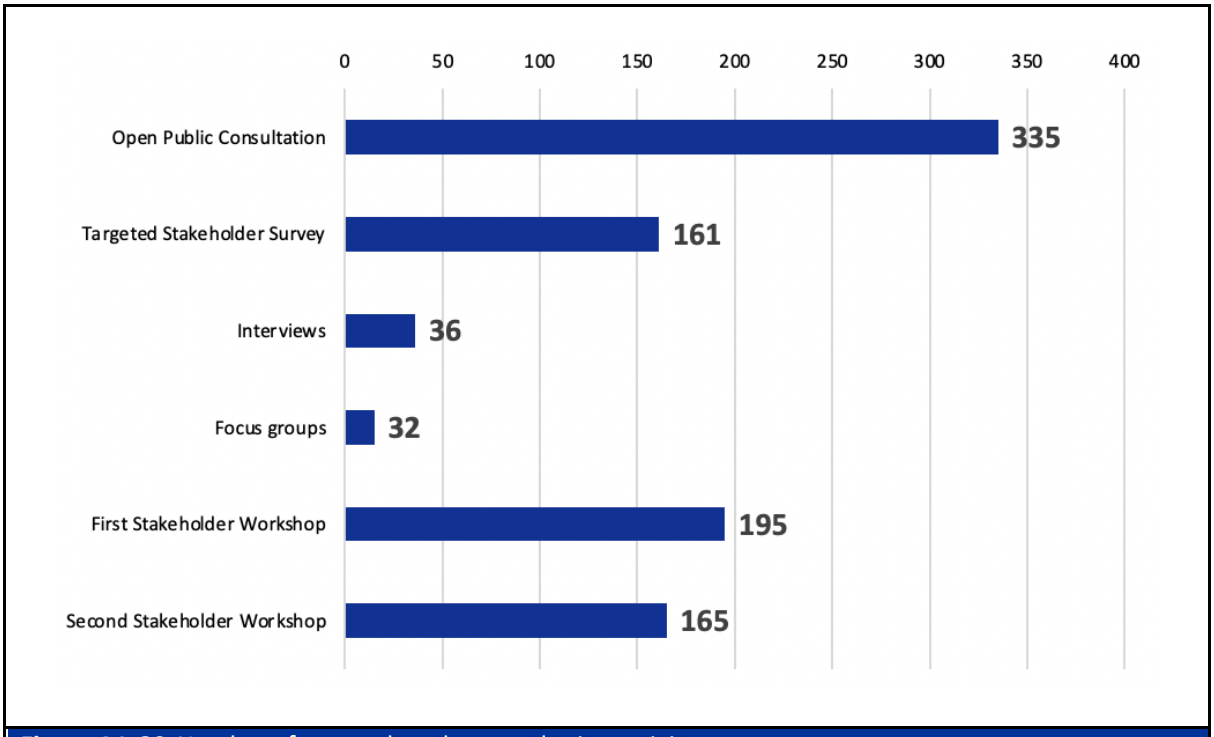


Figure A1-89: Number of respondents by consultation activity

The qualitative information received from stakeholders during consultation activities was analysed by using thematic analysis. This is presented in the subsections below.

A1.3.2 Problem area 1: activities and activity thresholds

The respondents mostly commented on activities that should be included to or excluded from the E-PRTR Regulation. There were no contradictory opinions in different groups of the respondents (public authorities, NGOs and industry) in this problem area. Figure A1-90 summarises the major themes that emerged in the discussion.

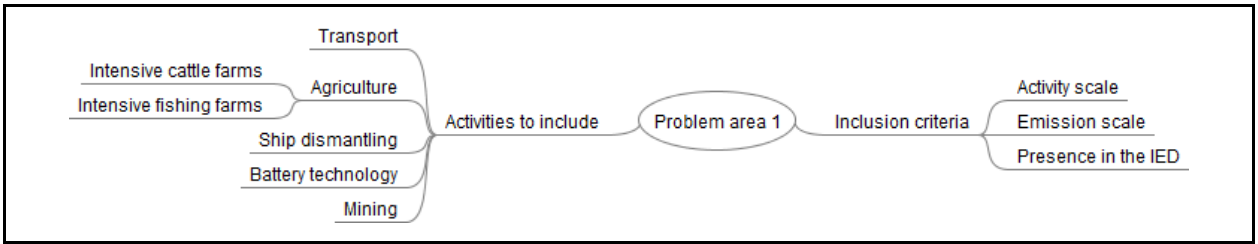


Figure A1-90: Themes in problem area 1

Some respondents provided general criteria that would prescribe what activities the E-PRTR should cover. **Criteria for inclusion** mostly addressed the scale of activities. However, other criteria, such as the scale of emissions, the presence of activity in the Industrial Emissions Directive (IED), were also covered, e.g.:

> *"Just because of the scale of the industry. But a lot of the activities on the survey list are likely to be relevant sources of potential emissions."*

> *"If you compare the upstream steel processing with the downstream sector, we are absolutely not talking about the same order of magnitude of emissions. So, this is why we believe actually that downstream FMP plants should not be included in the scope of the regulation."*

> *"If it's in the IED, it should be included. If it's not in the IED, it shouldn't be included."*

The respondents also named **specific activities** to be covered by the E-PRTR. These activities included five areas – transport, agriculture, ship dismantling, battery technology, and mining. E.g.:

> *"We need to focus on transport because we have got all this data from E-PRTR that does not include transport, and we know that the concentrations of nitrogen oxides are still increasing in some areas, and it can only be from transport if we've covered everything else in E-PRTR."*

> *"We need to focus on agriculture because we can see from E-PRTR that it produces much percentage of our emissions of nitrogen oxide or whatever it might be."*

> *"At the moment, mining sits outside of the normal, big pieces of environmental legislation and probably needs to be aligned with everything else and brought under the same roof."*

"Battery technology is an obviously growing market, including for transport and renewable electricity storage, and they have finite lifespans, and the majority are made using hazardous materials. Ship dismantling for the potential for environmental impact and because of the growing acceptance that Europe needs to be more self-sufficient and taking care of things better ourselves."

"With regards to intensive cattle farms and intensive fishing farms, we have proposed a revision of the IED directive to include these two. If this happens, they should be maintained in the scope of the E-PRTR regulation."

Focus group discussion

On the question of the further alignment of the E-PRTR Regulation with other legislation and in particular with the IED, an NGO representative highlighted that the alignment is not always desirable for the purpose of the completeness of environmental benchmarking. This is because the scope of the existing legislation is mainly focused on the releases and emissions but does not take into consideration the inputs (e.g., energy consumption, material consumption, water consumption etc.).

An industry representative noted that the alignment of the scope of the E-PRTR with other legislation is generally useful when there is an interest of the public on the environmental pressures of an activity. An example is the upstream iron and steel production, where public's interest on the environmental pressures is there. This is however questionable for downstream activities.

A PRTR expert noted that it would be useful to align with other instruments that request information on the point source level. But if you compare to, for example, the NEC Directive, that requires information on a national level, it is not that important to align with the activities that are included. For those instruments, it is more important to align with pollutants, because this would allow comparison of different datasets and could be used for the development of emission factors, etc. This would be good from the validation point of view. Similarly, an NGO representative commented that a data quality rating system would allow to compare the data, including the information on what monitoring device is used and how often the calibration is carried out.

On the question about costs and benefits of including additional sectors in the scope of the E-PRTR Regulation, an industry representative noted that small and medium-sized companies often do not have environmental teams working on the environmental issues and their monitoring. A national competent authority stressed however that the question of costs should not be exaggerated because the medium- and large-sized companies already have operating reporting systems and hence, data needed. Even if an additional measuring system is needed, except for small plants, the investment is generally small compared to the investment in the production equipment or waste treatment equipment. Another national authority representative agreed on the point about the cost, and that there is much more data available already that could be easily reported. Different size companies, such as bigger medium-sized combustion plants or bigger medium-sized wastewater treatments plants, are not yet covered by the E-PRTR but they are already reporting data under different reporting obligations and permitting regime. Therefore, the reporting to the E-PRTR should not levy a significant additional administrative burden, at least for bigger facilities. Of course, setting up a new reporting system for E-PRTR is an additional burden, but it is a burden that would occur only once. An NGO representative highlighted that if you monitor, you should not have reporting thresholds. Similarly, there should not be thresholds for hazardous waste. An industry representative stressed that some of the figures used in the impact assessment carried out in the context of the E-PRTR review process were underestimates. For instance, with regards to oil and gas

operation facilities, there are many aspects which should be taken into consideration. An NGO representative questioned the concept of high complexity of facilities and therefore data collection, as continuous emission monitoring tools exist. A state-of-the-art reporting infrastructure should be defined and considered as a default. If there is a good reporting infrastructure in place, costs can be saved on both sides of industry and competent authorities. Industry representatives commented that the E-PRTR is a very time-consuming reporting system. Complexity is due to the number of installations on the same site and emission streams to be reported. A national competent authority representative noted that, currently, the E-PRTR holds a largely aggregated data and requires only one number to be provided on a facility level and not for all installations within the facility. Monitoring at facilities is not done on a facility level, it is done on a much lower level, on the installation level. So, if there is a large plant with hundreds of installations, there is a need to compile data, because E-PRTR requires only one number, and to compile all the data requires extra work.

A1.3.3 Problem area 2: pollutants and thresholds for reporting releases

The respondents mostly focused on sunset and, especially, sunrise mechanisms in their comments. They expressed the general opinion about the benefits or shortcomings of the mechanisms and commented on some aspects of their implementation. Figure A1-91 summarises the major themes that emerged in the discussion.

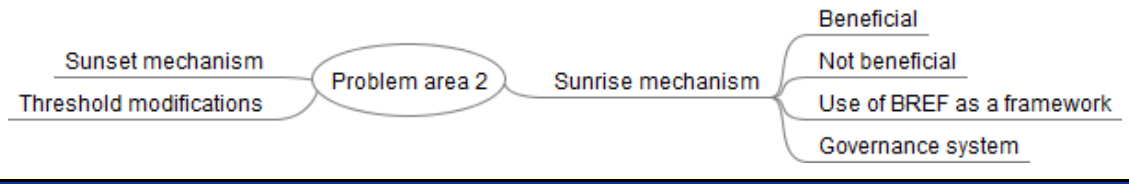


Figure A1-91: Themes in problem area 2

There were not many comments on the **sunset** mechanism. Most respondents mentioned it occasionally and positively (e.g., "we could imagine that a sunrise/sunset mechanism could be good", "there should be a review of substances periodically to identify substances which have little to no emissions anymore").

However, the discussion was more focused on the **sunrise** mechanism. Sunrise mechanism received both positive and negative reactions. **Positive reactions** were brief and emphasised the importance of including the emerging pollutants, e.g., "E-PRTR will need to take account of pollutants with emerging concern". **Negative reactions** were related to general doubt if new pollutants should be added and uncertainties about the mechanism of adding them, e.g.:

> *"But should a new pollutant be added? For reporting, that would depend on if the Member States could agree."*

> *"Emerging pollutants may be difficult to set thresholds for. Perhaps, E-PRTR is not the tool for identifying emerging pollutants."*

> *"We're not for adding pollutants. There's a long list at the moment."*

"As far as the sunrise mechanism was concerned, the idea was received with a bit more resistance, especially on how the selection of new pollutants would be carried out, and the idea to add new pollutants of emerging concern in a systematic manner was criticised."

Both public authorities and industry representatives provided negative reactions to sunrise mechanisms.

In other cases, the respondents focused on the identification and addition of the emerging pollutants. Multiple comments arguing that BREF (Best available techniques reference) documents should be used as a framework for monitoring and adding emerging pollutants were received:

"Pollutants should be updated via the BREF framework."

"When the pollutant is included in the BREF, and it is required to be monitored, at that point one could say that the pollutant has been properly assessed, and then it can be included in the E-PRTR, for the relevant sectors."

"It could be useful that pollutants identified for evaluation under the IED and the BREFs could be reported in the E-PRTR."

"BREFs are updated every 6-8 years. It may make more sense to use these to add in emerging pollutants".

Additionally, the respondents cared about the **governance** of the sunrise mechanism. Some comments indicated that adding new pollutants should be fast and transparent, as well as based on scientific evidence. E.g.:

"E-PRTR needs to work fast for this. There should be a way for it to work quicker. 'Sunrise' is more important than 'sunset'. Our question is: what sort of system would you set up? Would they use comitology to set it up? If so, it would take 5/6 months to set up. Countries do not like when things change. With comitology, they can discuss the proposal. They [Member States – author comment] would accept this more than something where they have no say. It would need to be an implementing act, not just guidelines. Official guidance is very time-consuming. <…> It would be better if it was something less formal and something that you can change more regularly."

"What would be the best mechanism for adding a new pollutant to a list is looking at the system. It should allow faster changes of information. It would be better if we had clear governance. There should be more transparency. Implementing a new system would not be great. We need to incorporate the general public and experts from Member States."

"For adding new pollutants and changing thresholds, clear and robust criteria should be confirmed to ensure pollutants are not included for the sake of it."

Five controversial comments on the **modification of the thresholds** were received. Three comments suggested lowering the thresholds:

"Our organisation [the title was eliminated to ensure anonymity – author comment] objects to establish any reporting thresholds in particular for CMR or P or B or T properties or other pollutants with hazard properties of equivalent concern. If monitoring is done on a certain pollutant, it does not make sense to apply reporting thresholds in order not to share that available information."

"Dust thresholds could be lowered somewhat to recognize the advances in flue gas abatement and ELV setting."

"Companies below the threshold may now be emitting more than those above as these smaller installations have not been required to limit emissions as much. Hence why a reduction in threshold would be beneficial."

On the contrary, two comments argued that the modification of threshold is not beneficial: "reducing the thresholds without having more human resources to check all the data all the time will generate more issues and probably will reduce the usefulness of the register, we feel very strongly", "it is really important for us not to add new pollutants or new activities not in the IED or to modify thresholds in a way that is different from the IED because it will be a burden for operators and local and national authorities".

An industry representative suggested that to include any additional pollutants and amend their thresholds, there is a need of thorough and robust analysis based on the scientific information that would determine the real environmental impact of the E-PRTR.

Focus group discussion

On the question about the sunrise and the sunset lists, an industry representative considered that there is no rationale to remove substance from reporting if the monitoring is still in place, also due to compliance and benchmarking reasons with other EU legislation.

An NGO representative noted that it may be important to keep the reporting of obsolete substances, and this should be looked at on case-by-case basis.

An industry representative noted that the purpose of the E-PRTR is to provide clear, simple, comparable information to the public and that, currently, there are issues with comparability of data in the E-PRTR as some data are not always reported and supported. Before increasing complexity, data comparability should be guaranteed. Regarding the sunrise mechanism, BREFs/Key Environmental Issues (KEIs) are already good tools to identify pollutants. We should not consider all existing pollutants regulated by all kinds of legislation or international conventions and put them into the E-PRTR without a proper assessment of whether these pollutants are relevant for the activities, for the sectors and the facilities of concern. A robust scientific approach to the identification of pollutants should be used instead. We also should make sure that when new pollutants are added to the E-PRTR, this does not show artificially that pollutants are increasing for a facility just because they are just starting to be reported. So, there should be a mechanism explaining that from this time onwards, this new pollutant is being reported.

A PRTR expert noted that not all pollutants, for example those included in the OECD short list, are relevant for all industries, so guidance documents could specify what substances or pollutants are expected from what type of activity, to simplify reporting.

An NGO representative noted that to increase public involvement in decision-making, it is important to focus on pollution prevention at the source. Keeping the E-PRTR as it is with the extended list of pollutants, changing the threshold here and there would not address any of this. NGOs working with the E-PRTR are more interested on benchmarking, compliance promotion, comparing where industry stands compared to others, how they can improve the performance. They are interested about reducing impact and not

about better reporting. This is the UNECE term for taking more preventative and mitigation measures and this is where we should collectively work towards. This works better for the products and diffuse emissions, like in the Norwegian system, where there are a lot of product groups where we can also track the releases from those products and bring it back to the industry. This is what consumers are maybe more interested about. Another important thing is how this works together, and not duplicate existing things as we do not want to add extra burdens. It is rather to use data in a better way, integrate more data. There are certain pollutants which are released more during the product life phase, where we should consider the dynamic approach of the sunrise mechanism. The work done by the REACH community can be correlated with the industrial activities covered under the IED or the E-PRTR.

A1.3.4 Problem area 3: information to track progress towards the circular economy and the decarbonisation of industry

Most comments in the discussion on the problem area 3 related to contextual information requirements and E-PRTR as a tool for tracking the progress towards the circular economy. There was almost no discussion about the role of E-PRTR for tracking the progress in decarbonisation; however, there were no negative reactions as well. Figure A1-99 summarises the major topics that emerged in the discussion.

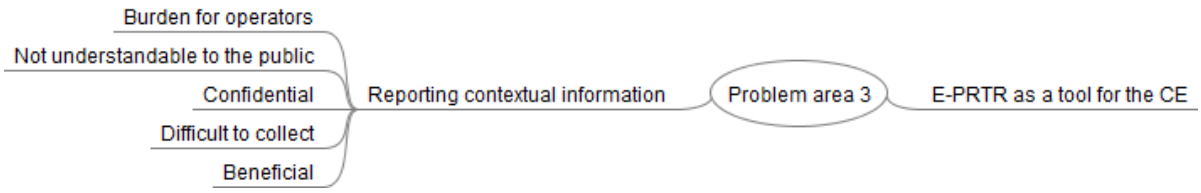


Figure A1-92: Themes in problem area 3

A lot of comments were received on the requirements to report **contextual information**. The reactions both from the industry and public authorities were mainly negative for several reasons, as shown in Figure A1-92. First of all, the respondents argued that reporting contextual information will require a lot of effort and will become a **burden**. E.g.:

"[It will – author comment] add a burden to the reporting."

"We do not want to add new data to the E-PRTR Regulation because it will really be a huge burden for operators and authorities."

"It is difficult to precisely assess the additional time that our operators would spend on reporting this information, but clearly, this would be significant. We have not been able to quantify precisely what this additional time would be. It is a very demanding exercise. They are asking for very detailed information on energy and so on."

Additionally, the respondents pointed out that **contextual information will not serve its purpose to inform the public** because its interpretation requires specialised knowledge, so it will not be understood and could be misinterpreted. E.g.:

"There are also issues surrounding this information being used to compare facilities which are not comparable due to differences in processes, production volumes etc. For the chemicals industry,

every process is unique, and the provision of contextual data to make it seem like they are comparable would lead to inaccurate conclusions being drawn by end-users."

"We feel that for a visualisation and communication too,l you need to provide data that are meaningful. At least for this sector, this data would not be meaningful without the overall explanation. But this, of course, will be too much, and people will not go into that detail."

"If we want to serve simple, clear, and comparable information to the public, then do we want to include contextual information that is actually not going to serve this purpose?"

"To understand this contextual information, the reader would need to understand the process very clearly to make sense of it; it is better to leave it to the BREFs technical working groups than people through the E-PRTR."

Many respondents highlighted that contextual information discloses specific business details that are **confidential**, publicizing such information might affect competition. E.g.:

"There might be issues around competition or data confidentiality."

"There are concerns about the sharing of CBI [confidential business information – author comment] as even if this is presented at some point suitably aggregated so as to maintain confidentiality, but this must be carefully managed to adhere to competition law."

Finally, some respondents also were sceptical about collecting such information and elaborated on **difficulties in obtaining it**. E.g.:

"Contextual information would be difficult to collect and may not be allowed to be shared with the person responsible for E-PRTR reporting."

"For some companies, it is hard. Confidentiality could be an issue. There could be competition issues, the use of resources [could be a problem – author comment]. The data would be difficult to obtain."

However, there were positive responses about including contextual information, highlighting that it could be **beneficial** while recognising possible pressure from industry. E.g.:

"I do not see any good reason why people would not want that information [contextual information – author comment] to be in there; unless you are a producer of a high global warming potential material, then you do not necessarily want to admit that in your public records."

"Yes, there is always resistance from the industry. There should be a balance between the desire of industry and that of the public. Definitions are really important. They need to be very consistent."

Most respondents did not see **E-PRTR as a tool for tracking the progress toward the circular economy** and suggested that it should be implemented by a different legislative tool. E.g.:

"We would encourage the use of other monitoring ideas for measuring progress towards the circular economy but do not see the E-PRTR as a tool to do this. Emissions are not linked to the circular economy."

"The E-PRTR is not the place to report on products. It is very difficult to see how E-PRTR could be used for the circular economy performance for different sectors."

"We are aware that the circular economy should be covered, including the BREF process, but again is it [E-PRTR – author comment] the right instrument?"

"For circular economy, I am sure that E-PRTR is not the right system at the moment. What would you be tracking through E-PRTR that would really give you information on the progress towards the circular economy? I am not entirely sure that we have really got good overall systems for tracking the circular economy. The circularity seems an unnecessarily complicated addition."

Focus group discussion

During focus group discussion, one NGO representative commented that the E-PRTR can and should be a tool to make the best use of data, where data is reported for a reason. Currently, there is a huge gap on the inputs, energy, and resource consumption, which links to the circular economy. They want to promote the circular economy, but it is not possible without the right scope boundaries. There should be a value chain approach and not just an installation level approach. Also, reporting needs to fulfil benchmarking, compliance promotion, and inclusive governance aspects. Regarding CBI, the NGO held that it is not always clear what exactly is CBI. Under the IED requirements, for example, industry has to set BAT on consumption, including energy, so it cannot be considered CBI any longer.

One Member State competent authority representative noted that the E-PRTR could be a good instrument for working with the BAT conclusions but finds that there is too little information and data. About 20-25 years ago, Denmark introduced the so called "green accounts", which was a more comprehensive PRTR reporting instrument. Danish companies had to report about energy use, water use and raw materials consumption, and do a three yearly environmental reporting. It was a big burden for the companies. Also, it is very difficult to compare different installations, since they have different production parameters. Furthermore, to have high data quality, there is a need for a lot of manpower to ensure that data are correct, even when some automatic tools to compare data are used. So, if new information requirements are introduced, competent authorities will need additional resources.

Another NGO representative considered that there is a need to think more about the needs of the end users. So, if the idea is to inform, the public needs to know three things: one is if pollutants being released are harmful; these probably could be solved with categorisation or colour coding. Two, to understand what the impact of emissions would be to air quality or the quality of a nearby river. Three, if installations close to the community are compliant with their permits. This is the contextual information that the public would need that are not available right now in the register. To move beyond the information, and to empower the public to take action and to be involved in decision-making processes, we need to think what these expert groups need. It is also about identifying the best performance, and it would help if the facilities were benchmarked through the E-PRTR. Then we could identify the best performance and have a more focused data collection.

One industry representative raised one question about whether there is an appreciation of how much the public (neighbours, people living in the vicinity of facilities), apart from NGOs, is concerned and really make use of the E-PRTR. It all requires a lot of work, both for operators and the authorities, so there is the need to be prudent to only collect information what is needed.

In response to these considerations, one national competent authority representative noted that this could also be the question of the hen and the egg. Is it that the interested public does not get the data that it needs, or the data is not what the public needs? The E-PRTR requires a lot of work but the use of the current E-PRTR data is very limited, because it is missing contextual information and there are a lot of deficiencies. It is an exceptional dataset, because it includes a lot of information from all over Europe, but it is difficult to interpret. The idea of the E-PRTR is to empower the public to participate in the environmental decision-making processes but it can be a lot more. It can be used as a monitoring tool and to measure the success of environmental policies. However, it needs to be further developed, which is additional work, but it would end up being data set that is of a much bigger use than what it is right now. So, the scope of the E-PRTR should be enlarged to go beyond the pure information of the public. The E-PRTR could be used to generate data for benchmarking, for monitoring, and that would require to distinguish well between what kind of information is going to be published to the public and what information is treated more confidentially and is being used for environmental policymaking.

Another competent authority commented that in south Belgium, information on energy use is already reported and sometimes used by the authorities when checking data quality. There is no doubt that these data can be useful for the public and they are already useful for the administration. But it is very time-consuming, not just data checking but also data collection.

An NGO representative noted that the UNECE PRTR protocol says that it is about public access to information and facilitating public participation in environmental decision-making, and to contribute to the prevention and reduction of pollution. That is the aim of the E-PRTR. And one thing which is often forgotten, but in the protocol, it is also for the governments to track trends, demonstrate progress in pollution reduction, monitor compliance with international agreements, for setting priorities and inviting progress in environmental policy. It should not be about installations, it should be about industrial activities, it should be about rating performance of the decision-makers on how they will implement the Green Deal, for example. There has been some interesting work by the US about how to use PRTRs for the Sustainable Development Goals. Maybe there should be some industrial activity benchmarks, key performance indicators for different sectors to address specificity argument but it is important to make it workable and meaningful.

A PRTR expert noted that a major challenge is that PRTRs or the E-PRTR are not very well known by the public. And this is something that many Member States see as a major challenge. Because if you do not know that there is an information available, how can you use that? This is something that the Member States need to work on.

A national competent authority representative commented that the E-PRTR is not a performance monitoring tool or, at least, it was not created to make the ranking and performance monitoring since the very beginning. In Italy, authorities collect contextual information, which is very useful. But there needs to be a balance between the need for confidentiality and the need for environmental information to the public. Regarding the type of contextual information to be collected, it is important to the selection of the right unit of measure. The collection and management of these data is challenging. It is also important that data published are current, of good quality, and useful to the public.

An industry representative noted that the question is whether the contextual information would be useful in the context of the E-PRTR. The complexity of the installations is not well represented just by the data. The analysis of E-PRTR data is a frustrating experience, because of data quality and timeliness. Adding more contextual information to the database would generate more quality issues without adding any real benefits to the understanding of the issue. The information that will be added will not be enough anyway, and there are other media and other ways to discuss those complexities, for example, the BREFs.

Another industry representative commented on the data quality of waste reporting and on how to improve it: use the specific codes of the European list of waste; mandatory reporting of the destination of the waste; mandatory reporting of disposal and recovery codes to specify waste treatment; and better data extraction.

A1.3.5 Problem area 4: reporting modalities and data flow

The respondents provided a lot of comments on improving the reporting of data. Data quality and timing of the reporting were the most discussed topics. Additionally, the significance of guidance was emphasised to improve the quality of data and the general efficiency of the reporting. Figure A1-93 summarises the major themes that emerged in the discussion of problem area 4.

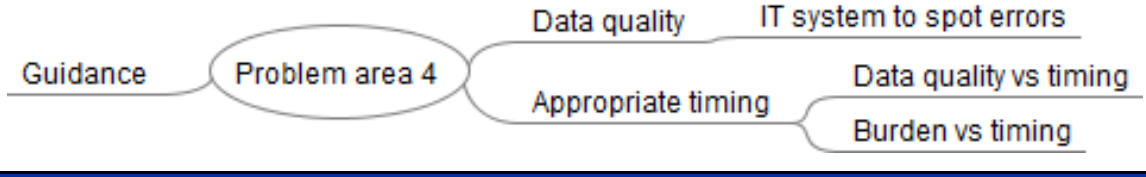


Figure A1-93: Themes in problem area 4

The respondents observed that the **quality of the reported data** was unsatisfactory. The submitted data contains a lot of errors. E.g.:

> *"I'm aware that there are issues in terms of errors and data quality in our sector [the name of the sector is not shown to ensure anonymity – author comment]. The errors might be more down to the Member States and competent authorities rather than the E-PRTR itself. A lot of competent authorities are very stretched and very under-resourced. Far too often, they do not necessarily even sanity check data, or they might not have the relevant information or expertise to be able to do a sanity check. Creating a more integrated European data flow and a better-integrated and more consistent IT and reporting system would help."*

> *"The main concern for us is improving the consistency and robustness of the data. We are clearly in favour of showing E-PRTR data which is meaningful for the public."*

Some respondents elaborated that the **IT system that could spot errors** in the submitted data could be a very useful tool for improving the quality of reporting. E.g.:

"From our [the organisation title is not shown for ensuring anonymity – author comment] experience, a lot of mistakes occur when reporting to the E-PRTR. We believe a system that would flag errors or potential gaps in the data would significantly improve the lag time and data quality."

"If the reporting tools were adapted to automatically flag potentially wrong data, this would help cut the lag time. When poor quality data is found, it takes quite a lot of time to get it rectified. Faster flagging of potential errors would be highly beneficial."

"Main point was that an improved reporting system for highlighting errors was very useful, concerns were raised about the quality of the data and the time it takes to identify incorrect data submitted to the E-PRTR."

In the discussion of the possibility to reduce **reporting time**, most respondents commented that it would not be feasible and would lead to a **decrease in data quality**, **increase in reporting costs and administrative burden** in general. Most respondents did not see an opportunity for significant timesaving. E.g.:

"I strongly believe that the bottleneck would be at the competent authority level, rather than on the side of the operators. To have a frequency of delivering data of less than one year would be very difficult. It should be faster, but I do not think that going to near real-time reporting is the right way to do that. Having the data one year after would be very good. Also, for communication purposes, you do not need real-time monitoring. The data would be more useful if it was published more frequently than every three years."

"We think it is difficult to reduce the time for reporting data because some operators need many months to collect and report data. The big point for us is that if the Commission wants to reduce the reporting time, this will not be ok for us."

"Even if we can do it, we cannot ensure data quality. The data quality will be worse, awful. Three months is not feasible. Nine months could be good. With great number of [the exact number is not shown to ensure anonymity" – author comment] facilities in our country [country name is not shown to ensure anonymity – author comment], it's not possible to do it in three months due to the number of facilities we have."

"Bringing the reporting/publishing timeframe in line with the IED would be good, but not shorter. Shorter would not add value for the public and would increase costs and administrative burden for our sector."

Finally, many respondents observed that appropriate **guidance** is important for the quality reporting and effective management of the reporting process itself. E.g.:

"Guidance could be used. Perhaps we should start with guidance."

"We also believe guidance should be provided for the operators as to what the data should look like so they can better spot errors."

"The guidance is a very important tool to help operators and competent authorities prepare and submit the data in the register with as much clarity and quality as possible."

Focus group discussion

An NGO representative noted that Slovakia and Croatia have systems with real-time continuous emission monitoring data for air available online. It is feasible, but it needs to start with some tougher stance by the decision makers. It all starts with IT reporting. For the continuous emission monitoring (CEM) data, reporting should be done on a daily basis, which is possible for air and water pollutants, at least for big plants. Data check and validation could be performed at a later stage, but within a deadline. Current approach to wait three years is not acceptable. In addition, certain industries use waste as a fuel, which should also be reported immediately. In summary, industry can report the data directly. CEM are calibrated and have standards which require data to be robust and quality checked. It is much more efficient than having human resources carrying out data checks.

A national competent authority representative noted that if the reporting is kept as it is, it is difficult to see how the process can be made faster. Regarding the idea to upload the data directly and check the quality later, he expressed the fear that publishing unchecked data may result in many queries from the public.

Another national competent authority representative agreed on this. It is possible to report the data much faster than it is right now, but to have industry reporting the data directly and to publish it without quality assurance measures beforehand means the data is out there and there is always going to be people or institutions that would download the data, which is not quality checked. It may generate tons of questions, if the data is not correct or does not compare to data from the previous year, etc.

A1.3.6 Problem area 5: access to E-PRTR information

Few comments were received on the problem area 5. The respondents addressed several topics, such as user-friendliness of the E-PRTR portal, easy-to-understand information for the general public, multilingual issues and the presence of analysis tools. Figure A1-94 provides a summary of the major themes of this discussion.

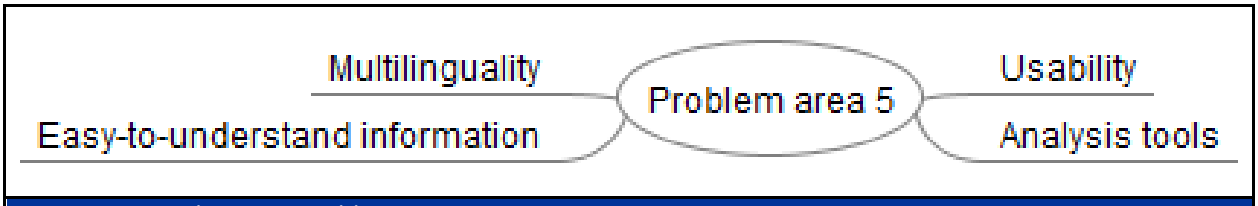


Figure A1-94: Themes in problem area 5

There were no predominant themes in the comments.

Some respondents believed that the **usability** of the E-PRTR portal could be improved:

"There are not too many problems. Beyond the issue of different categorisation and understanding what the data represents, which comes down to legislative alignment, the actual usability is really good."

"The current website is quite old and not very accessible to the public."

"The portal is being reviewed to make it more accessible for the public."

Two respondents pointed out that **multilingual** access to information is important for the general public. E.g.:

"Needs to be in languages other than English."

"Citizens near a plant are not necessarily speaking English. So, unless you are lucky enough to have a national register in place, which is, I understand, not at all the case in every Member State, then you have to rely on the E-PRTR, which is in English. A huge majority of our members believe that the register should be written in the language of preference of the public."

The interviewees also emphasised the importance of **easy-to-understand information** that would not be overloaded by technical details. E.g.:

"Do not make it too complicated and technical information."

"Adding more complexity to something that has to be used by people who don't work at industrial installations should only be done if there's a good enough reason as adding complexity always adds uncertainty to the way people use the data."

"There is no need to go into more detail. The current approach is enough."

And finally, some respondents lacked certain **analysis tools** that could help them make more use of the portal. E.g.:

"One of the main problems is that you cannot export data. I do not know if it will be the case for the new portal, but it is very important to be able to export data in order to be able to carry out analysis. It is not very user friendly. I hope the site will be better. The EEA put in a data tool, but it was only accessible via a complicated URL and only available for competent authorities and such."

Focus group discussion

An NGO representative noted that there is a language barrier, which is something very specific to the EU and needs to be overcome for publishing contextual information. The IT tools should be designed in a way to allow compatibility beyond the country of reporting and that is why there is a need for the EU level infrastructure. There is an industrial emissions portal and maybe it could evolve to serve more in terms of functions and purposes. There is the need to develop these broad categories of intended outputs for society, and maybe use topical approach, for example, what is the decarbonisation and global climate impact progress, how to push the resource efficiency in circular economy.

A PRTR expert noted that Spain may have some good suggestions on how to make the public more aware of the E-PRTR, since they have a very active public discussion and involvement. Also in Sweden, when they publish or update the information about pollutants, they see an enormous increase in numbers of visitors. User experience surveys and analyses are very good exercises and should be considered to improve the portal.

A1.3.7 Problem area 6: releases from diffuse sources and products

In the discussion of this problem area, not many comments were provided as well. The topic seemed to be relatively new to some respondents. Therefore, a lack of knowledge was observed. Additionally, the respondents mentioned that releases from diffuse sources and products is a complex issue, and there are no standardised methods to measure them, which prevents comparable data, and the lack of guidance on how to conduct measurements. Figure A1-95 gives an overview of the main themes that emerged in the discussion.

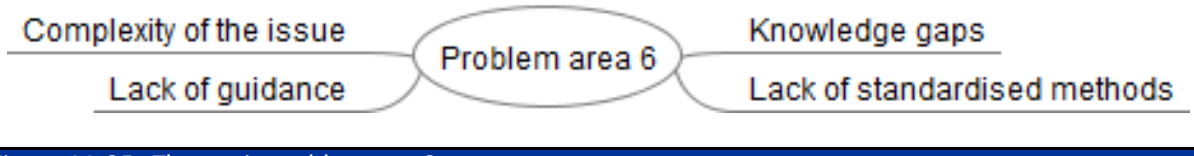


Figure A1-95: Themes in problem area 6

Some respondents reported their lack of knowledge about the issues, while others indicated general **knowledge gaps**. E.g.:

"Currently, there is not enough knowledge. Maybe the Commission could make this a study to help better understand diffuse emissions from products."

"We don't understand what this means. It doesn't seem to be related to our sector."

"We don't have much data on releases from diffuse sources, and we don't use such information at our level."

The respondents indicated that the issue is **complex and challenging** for conceptualisation and measurements. E.g.:

"For diffuse emissions, not only industry is targeted by the problem of diffuse emissions, but the transport and the agriculture sectors as well, where you have a lot of scattered emissions, which are not as easily channelled as they can be in the industry."

"It is difficult to answer this question as it is not just industry, which pollutes, and other sources should be measured. However, reporting diffuse emissions is a significant and complex challenge. Based on this and the belief that the E-PRTR should deliver quality information over quantity, it is hard to justify the inclusion of diffuse sources."

"Overall, the process is too complex for diffuse emissions. I suggest more engagement from academia to help clarify and simplify the process if it is to be included in future E-PRTRs."

Some respondents also commented on the **lack of guidance** on how to conduct measurements, e.g., "if you're going to add diffuse sources data, you should have guidance regarding how to measure this". Furthermore, according to the respondents, there are no standardised methods to carry out measurements and get comparable data. E.g.:

> *"There's currently a lack of consistent calculation methodologies. This is clearly an issue. At the moment, there's no way to consistently report your diffuse emissions."*

> *"Some companies have been already reporting on it [emissions from diffuse sources – author comment]. But in terms of comparability, which is the aim we are pursuing with this revision, currently having a requirement to report on diffuse emissions would absolutely not help to reach this objective."*

However, one detailed comment on the inclusion of the emissions from diffuse sources was received:

> *"We strongly support adding (diffuse emissions from) products in the reporting activities. As a start, we suggest adding a first set of products groups with default emission factors. A possible first list could be that developed by the OECD and the Nordic PRTR group, reporting by parties should be based on application of the default emission factors (see list of product group and default emission factors in the OECD Annex to the resource compendium of PRTR release estimation techniques part VI: summary of techniques for estimating releases of chemicals from products (ENV/JM/PRTR(2016)2/ANN. That includes PAH from bitumen roofing products, PCBs from sealants in building and construction, DEHP from PVC flooring, Ethanol from car care products, heavy metals and NMVOC from plastic bags, heavy metals from boats seals, fish farming nets, vehicle brake and tyre wear, mercury-containing products, micropollutants, e.g., from synthetic fibres/tyres/cosmetics etc. A multi-stakeholder expert group should be tasked to complement the product groups and default emission factors to apply, define the methodology to use as well as ensure a streamlining with other databases on chemical management at a global level so to maximise synergies and policy coherence."*

This comment implies the existence of important sources of knowledge and working groups that could be employed for developing necessary conceptualisations and measures.

Focus group discussion

An NGO representative noted that in Norway and in the Nordic countries in general, they have done quite a lot of work since the nineties on reporting diffuse emissions from products. It is important to capture emissions from products, because otherwise a very minor and small picture of the real environmental impact of an industrial activity is given. The E-PRTR is about activities and not installations. The question is the feasibility of estimating releases from products. The OECD has also done a lot of work on the topic, preparing default emission factors. It could be very interesting for the pesticides, biocides and fertilizers industries.

A national competent authority representative noted that not enough is known about releases from products at the moment. In Denmark, authorities have calculated diffuse emissions, and it shows ammonia releases from rearing of pigs and poultry, dust releases from small heating facilities and households, and nitrous oxides from traffic. However, besides these compounds, no other chemicals are reported. In Sweden, authorities use the data from other international reporting when presenting releases from diffuse sources.

An industry representative highlighted that it was important to be aware that often in the context of a facility operator the product is beyond the control of the operator. So it may be, for example, in control of manufacturer or a third-party warehouse.

A1.4 Documents provided by stakeholders during consultation activities

During the consultation activities, some stakeholders provided papers, reports and other documents — beyond position papers — with relevant information, analyses, views and suggestions for the impact assessment of the revision of the E-PRTR Regulation. These are:

- OECD (2021): Using PRTR Information to Evaluate Progress Towards the Sustainable Development Goal 12, OECD Series on Pollutant Release and Transfer Registers, No. 25, OECD Publishing, Paris. Available at: https://www.oecd.org/chemicalsafety/pollutant-release-transfer-register/using-prtr-information-evaluate-progress-towards-sustainable-development-goal-12.pdf
- UBA (2021): Analyse des Nutzens und der Wirkung des PRTRs als Instrumentarium zur Vermeidung und Verminderung der Umweltverschmutzung [*Analysis of the benefits and impact of PRTRs as tools for pollution prevention and control*]. TEXTE 95/2021. ISSN 1862-4804 Dessau-Roßlau, Januar 2022. Available at: https://www.umweltbundesamt.de/publikationen/analyse-des-nutzens-der-wirkung-des-prtrs-als
- IVL (2021): Suggestions for methods of reporting to the E-PRTR in some economic activities. Swedish Environmental Emission Data. SMED PM 2021-04-12.
- IVL (2020): National evaluation of reporting thresholds for pollutants listed in Annex II of the Protocol on PRTRs. Swedish Environmental Emission Data. SMED Report No 24, 2020. Commissioned by the Swedish Environmental Protection Agency.
- An excel file listing new pollutants to be considered for inclusion to Annex II of the E-PRTR Regulation, with information on e.g. relevant legislation, toxicity and use.
- Miljøstyrelsen (2014): Evaluering af grønne regnskaber. En undersøgelse af de grønne regnskabers effekt og vurdering af fremtidige muligheder for miljørapportering [*Evaluation of green accounts. A study of the effect of the green accounts and assessment of future possibilities for environmental reporting*]. Rapportudkast maj 2014
- Miljøstyrelsen (2014): Baggrundsnotat om virksomheders miljørapportering og de grønne regnskaber [Background note on companies' environmental reporting and the green accounts]. MST-1204-00207.
- Miljøstyrelsen (1999): Rapport om evaluering af de grønne regnskaber [*Report on evaluation of the green accounts*]. Available at: https://www2.mst.dk/udgiv/publikationer/1999/87-7909-376-0/html/indhold.htm
- EEB (2020): Industrial Plants Data Viewer (IPDV). Background briefing 08/09/2020 FIN.

In addition, many stakeholders forwarded their position papers and OPC contributions to the impact assessment of the revision of the IED.

Annex 2 E-PRTR Regulation revision - Targeted stakeholder survey

Assessment of Options for Revision of the Regulation establishing the European Pollutant Release and Transfer Register (E-PRTR) – Targeted Stakeholder Survey

Objectives

The primary aim of the European Pollutant Release and Transfer Register (E-PRTR) is to improve public access to environmental information, allowing for the informed participation of EU citizens in environmental decision-making on the EU's largest (agro-)industrial activities. This targeted stakeholder survey will assist the European Commission in assessing possible legislative or non-legislative measures to improve implementation of the E-PRTR Regulation (EC/2006/166). The E-PRTR Regulation is closely linked to the Industrial Emissions Directive (IED) and there is a similar ongoing survey supporting revision of the IED.

The scope for revision of the E-PRTR Regulation is set out in this **inception impact assessment**. To inform revision of the E-PRTR Regulation, work will be undertaken to understand the problems and their drivers, and to identify policy options that can address them in addition to achieving the overall policy objectives more efficiently, coherently and clearly.

The information gathered through this survey will be of great importance. It will be used to clarify the problems; identify synergies with revision of the IED; design policy options; define the baseline for the assessment; and assess the economic, social and environmental impacts of the selected policy options. This will enable comparison of the policy options against the baseline and will contribute to the Commission's impact assessment and staff working document.

RPA Europe, Aether and Air Quality Consultants are supporting the European Commission with the E-PRTR impact assessment, including stakeholder engagement activities. If you have any questions about this survey, please contact us at **e-prtr.revision@rpa-europe.eu**.

Overview

This survey is intended to gather feedback for the impact assessment from stakeholders involved in implementation of the E-PRTR Regulation. It groups questions under six problem areas that broadly reflect the inception impact assessment, namely:

1. Activities and activity thresholds
2. Pollutants and thresholds for reporting releases
3. Information to track progress towards the circular economy and the decarbonisation of industry
4. Reporting modalities and data flow
5. Access to E-PRTR information
6. Releases from diffuse sources and products

Survey instructions

The electronic interactive version of this survey contains questions based on which type of organisation you represent. The questions are tailored depending on whether you represent a Member State authority (at any level of administration), industry (individual company or trade association) or other stakeholder group (environmental NGOs, technical experts, academia and researchers). This word version of the survey includes all questions, for reference and for complete transparency. It is provided to facilitate the collection of information rather than for information submission. Please use the online survey to submit the information.

Where a question is not relevant to your experience or knowledge, please respond 'NA' (Not Applicable) and proceed to the next one. Or, if it is relevant but you do not know the response, please respond 'do not know'. Where specific questions appear more relevant to other organisation(s) you are aware of, please forward the survey and invite them to respond.

The deadline for this survey is Friday 30 April 2021. You can only take this survey once.

N.B. You do not need to answer all the questions at the same time, as you can save your progress and complete the survey later. To return to the survey, you must provide a valid email address via the toolbar. A continuation link is sent to the provided email. When you use the Save and Continue feature, all survey progress up to that point is saved (including on the active page).

About you

Please provide the following details about yourself.

Your personal data provided for the survey (name, organisation name, email address and country of residence) will not be published. Information on the type of stakeholder group you are representing will be used for statistical analysis. Open text comments will be associated with country and stakeholder type.

The provision of personal data is not mandatory. However, if you do not provide your personal data, we will not be able to contact you with additional information to follow up your survey response.

Further information on how we process your personal data is available **here**.

1) Please provide the following details:

Your name: _____
Organisation name: _____
e-mail address: _____

Country of operation:

Albania	Croatia	Finland	Iceland	Liechtenstein	Netherlands	Romania	Sweden
Austria	Cyprus	France	Ireland	Lithuania	North Macedonia	Serbia	Switzerland

Belgium	Czechia	Germany	Italy	Luxembourg	Norway	Slovakia	Turkey
Bosnia and Herzegovina	Denmark	Greece	Kosovo*	Malta	Poland	Slovenia	United Kingdom
Bulgaria	Estonia	Hungary	Latvia	Montenegro	Portugal	Spain	Other (please specify below)

*This designation is without prejudice to positions on status

Comments:

Stakeholder type:*

Private Company	National authority
Public utility provider	Local/Regional authority
Industry or trade association	European institution
Non-governmental organisation	International body
Academic/Scientist/Researcher	Member of the public
Consumer association	Other (please specify below)
Trade union	

Comments:

After completing this survey, are you willing to be contacted for any clarification, a follow-up interview and/or further updates on the impact assessment?

( ) Yes
( ) No

2) Organisation size:

( ) Microenterprise (1 to 9 employees)
( ) Small enterprise (10 to 49 employees)
( ) Medium-sized enterprise (50 to 249 employees)
( ) Large enterprise (250 employees or more)

Your use of pollutant registers

4) How often do you access pollutant registers?

	Never	Once per year or less frequent	Between once per month and	Once per month	Between once per week and	Once per week	More than

			once per year		once per month		once per week
A national pollutant release and transfer register	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]
The European Pollutant Release and Transfer Register (E-PRTR)	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

5) What do you access the pollution register(s) for? (Multiple options can be selected)

[ ] To review my own data
[ ] To examine pollutant releases in my local area
[ ] To compare releases between activities, facilities, regions, etc.
[ ] To carry out trend analysis for specific pollutants or activities
[ ] To use the data for overall analysis of release data
[ ] Other (please indicate reason): _____*

6) Which data do you most often examine? (Multiple options can be selected)

[ ] Releases to air
[ ] Releases to water
[ ] Releases to land
[ ] Waste transfers
[ ] Off-site transfers of pollutants in waste water destined for waste-water treatment
[ ] Releases from diffuse sources into air
[ ] Releases from diffuse sources into water

7) I am:

( ) Responsible for providing data to a competent authority
( ) Responsible for checking the data provided at national level and forwarding them to the European Environment Agency
( ) Neither of the above

8) Is gathering and reporting the information to your competent authority time-consuming?

0 _____[__]_____ 100

9) What is your estimate of how many person-days per year you need to collate and report the information to your competent authority?

---

10) Do you incur any other costs (beyond work time) to gather and report the information? If yes, please indicate.

---

11) Is assessment of data quality time-consuming?

0 _____[__]_____ 100[ ] Don't know

12) What is your estimate of how many person-days per year in total you need to assess the quality of data provided by facility operators?

---

13) For how many facilities are you responsible to assess the quality of data?

---

14) Do you incur any other costs (beyond work time) to assess the quality of data? If yes, please indicate.

---

15) How would you rate the quality of the data in the E-PRTR?

Release to air	0 _____[__]_____	100 [ ] Don't know
Release to water	0 _____[__]_____	100 [ ] Don't know
Release to land	0 _____[__]_____	100 [ ] Don't know
Waste transfers	0 _____[__]_____	100 [ ] Don't know

16) How would you rate the completeness of the data in the E-PRTR?

Release to air	0 _____[__]_____	100 [ ] Don't know
Release to water	0 _____[__]_____	100 [ ] Don't know
Release to land	0 _____[__]_____	100 [ ] Don't know
Waste transfers	0 _____[__]_____	100 [ ] Don't know

17) Please rate the importance of the following aspects to improve the functioning and value of the E-PRTR. If 'Other', please explain below.

Inclusion of additional sectors	0_____[ ]_____ 100[ ] NA/Don't know
Lowering activity thresholds	0_____[ ]_____ 100 [ ] NA/Don't know
Inclusion of additional pollutants	0_____[ ]_____ 100 [ ] NA/Don't know
Removal / decrease of pollutant reporting thresholds	0_____[ ]_____ 100 [ ] NA/Don't know
Availability in languages other than English	

	0_____ [ ] _____100 [ ] NA/Don't know
Availability of contextual information (e.g. production volume, energy use, water use, raw materials consumption) for a facility	0 _____ [ ] _____100 [ ] NA/Don't know
Data comparability with regional, national and non-EU PRTRs	0_____ [ ] _____ 100 [ ] NA/Don't know
Other (please explain below)	0_____ [_]_____ 100 [ ] NA/Don't know

Comments:

Problem 1: Activities and activity thresholds

E-PRTR is the main inventory of releases from industrial activities. It is used to evaluate progress with EU environmental policies and whether these measures are effective. Certain activities not currently covered by the E-PRTR Regulation are of environmental significance and are covered more fully by other EU environmental legislation including the Industrial Emissions Directive (IED), Medium Combustion Plant Directive (MCPD) and Urban Waste Water Treatment Directive (UWWTD). Importantly, because the E-PRTR Regulation and IED were developed at different times, their respective activities are similar but not identical. This limits the E-PRTR's potential for evaluating progress of the IED. Additional sectors are also being considered as part of the ongoing IED revision. Furthermore, other activities are covered in other PRTRs, in certain Member States and internationally.

This section of the survey gathers views about the importance of aligning the E-PRTR's sectoral coverage with the IED and other EU environmental legislation.

Activities regulated by the IED (and candidates for a revised IED).

Currently, CO2 capture and storage installations (IED activity 6.9) are covered by the IED and the Emissions Trading Scheme (ETS) but not the E-PRTR Regulation. Other (agro-)industrial activities are covered by neither the IED nor the E-PRTR Regulation but are considered for inclusion by the IED revision.

18) How important is it to include the following (agro-industrial) activities in the scope of the E-PRTR Regulation?

CO2 capture and storage installations	0 _____ [ ] _____100 [ ] NA Don't know
Upstream oil and gas industries	0 _____ [ ] _____100 [ ] NA Don't know
Battery production and recovery	0 _____ [ ] _____100 [ ] NA Don't know

Downstream ferrous metal processing activities: forging presses, cold rolling and wire drawing	0	_____	[ ]	_____	100 [ ] NA Don't know
Ship dismantling	0	_____	[ ]	_____	100 [ ] NA Don't know
Intensive cattle farms	0	_____	[ ]	_____	100 [ ] NA Don't know
Intensive mixed livestock farms	0	_____	[ ]	_____	100 [ ] NA Don't know
Intensive horticulture, i.e. growing plants (principally fruits and vegetables) under a roof or in greenhouses with high intensity use of water, energy, pesticides and fertilisers	0	_____	[ ]	_____	100 [ ] NA Don't know

19) If included (see preceding question), what would be appropriate E-PRTR activity thresholds for the following activities? Please suggest threshold value, unit of measure and provide supporting information. Please leave blank if you don't know.

	Threshold	Unit of Measure
CO2 capture and storage installations		
Upstream oil and gas industries		
Battery production and recovery		
Downstream ferrous metal processing activities: forging presses, cold rolling and wire drawing		
Ship dismantling		
Intensive cattle farms		
Intensive mixed livestock farms		
Intensive horticulture, i.e. growing plants (principally fruits and vegetables) under a roof or in greenhouses with high intensity use of water, energy, pesticides and fertilisers		

20) For the following activities, how important is it to align the E-PRTR and the IED categorisations?

Gasification and liquefaction (E-PRTR activity 1(b)) - adopt the IED sub-categories with two types of fuel category (IED activity 1.4)	0	_____	[ ]	_____	100 [ ] NA / Don't know
Cement and lime production (E-PRTR activity 3(c)) - adopt the IED product-related sub-categories in IED activity 3.1(a) and 3.1(b)	0	_____	[ ]	_____	100 [ ] NA / Don't know

and include an additional sub-category for Magnesium oxide production in kilns (IED activity 3.1(c))					
Hazardous and non-hazardous waste (E-PRTR activities 5(a) and 5(c)) – extend these activities to align with the IED activities 5.1(a)-(k), 5.2(b), 5.5 and 5.6	0	_____	[ ]	_____	100 [ ] NA / Don't know
Disposal of non-hazardous waste (E-PRTR activity 5(c)) - explicitly include the recovery of non-hazardous waste (IED activity 3.5(b)).	0	_____	[ ]	_____	100 [ ] NA / Don't know
Disposal of non-hazardous waste (E-PRTR activity 5(c)) - adjust the scope to align with possible IED changes on the recovery of non-hazardous waste from biological treatment (IED Annex I activity 5.3(b)(i)) (to include certain activities with a capacity of less than 75 tonnes per day with increased risk for emissions to soils, such as biogas production or manure processing plants)	0	_____	[ ]	_____	100 [ ] NA / Don't know
Independently operated industrial waste-water treatment plants serving an Annex I activity (E-PRTR activity 5(g)) – remove the 10,000 m3/day capacity threshold to align with IED activity 6.11	0	_____	[ ]	_____	100 [ ] NA / Don't know
Pre-treatment or dyeing of fibres or textiles (E-PRTR activity 9(a)) - adjust the scope to align with the possible IED changes on the pre-treatment or dyeing of textile fibres or textiles (IED activity 6.2), to include textile finishing as well as activities below the current limit of treatment capacity (10 tonnes per day)	0	_____	[ ]	_____	100 [ ] NA / Don't know
Smitheries with hammers (E-PRTR activity 2(c)(ii)) - adjust the scope to align with possible reduction of the IED capacity threshold for smitheries (IED activity 2.3b) from the current limit of 50 kilojoule per hammer and where the calorific power used exceeds 20 MW	0	_____	[ ]	_____	100 [ ] NA / Don't know

Landfills (E-PRTR activity 5(d)) - adjust the scope to align with possible inclusion of landfills (IED activity 5.4) where less than 10 tonnes of waste per day is received or where the total capacity is less than 25,000 tonnes	0	_____ [ ] _____	100	[ ] NA / Don't know

21) What would be the effect of aligning E-PRTR and IED activity categorisations as described in the preceding question? Please explain.

( ) Facilitate my work
( ) Make no difference to my current tasks related to the pollutant register
( ) Create difficulties

Comments:

22) How important is it to clarify the definition of landfill releases by adding to activity 5(d) the words 'including flaring of vent gas'?

0 _____[__]_____ 100 [ ] Don't know / Not Applicable

23) How important is it to extend the E-PRTR activity threshold to cover combustion plants with the following capacities?

1 – 5 MW	0	_____[__]_____	100	[ ] NA / Don't know
>5 – 20 MW	0	_____[__]_____	100	[ ] NA / Don't know
>20 – 50 MW	0	_____[__]_____	100	[ ] NA / Don't know

24) For the purpose of legislative coherence, how important is it to lower the existing threshold for UWWTP from 100,000 p.e. to the options below? If 'Other', please specify.

1,000 p.e.	0	_____[__]_____	100	[ ] NA / Don't know
2,000 p.e.	0	_____[__]_____	100	[ ] NA / Don't know
5,000 p.e.	0	_____[__]_____	100	[ ] NA / Don't know
10,000 p.e.	0	_____[__]_____	100	[ ] NA / Don't know
50,000 p.e.	0	_____[__]_____	100	[ ] NA / Don't know
Other. Please specify below	0	_____[__]_____	100	[ ] NA / Don't know

Comments:

25) How important is it to include the following industrial activities in the scope of the E-PRTR Regulation?

Metal working activities (e.g. manufacture of motor vehicles,	0	_____ [ ] _____	100	[ ] NA / Don't know

computer, electrical, transport and other equipment)

26) In addition to the activities mentioned in the preceding eight questions, are you aware of other (agro-)industrial activities with major environmental pressures in the EU and currently outside the scope of the E-PRTR? If yes, specify the activity, the relevant environmental pressures and supporting information:

( ) Yes: _____*
( ) No: _____

27) If all changes suggested in the preceding questions were to be implemented, how would the revision of the scope of the E-PRTR Regulation with regard to activities and activity thresholds affect the time you spend on reporting information to your competent authority? Please indicate the number of additional person-days.

---

28) If all changes suggested in the preceding questions were to be implemented, how would the revision of the scope of the E-PRTR Regulation with regard to activities and activity thresholds affect the time you spend on quality-assuring the data provided by facility operators?

Over 100% decrease	26%-50% decrease	5-25% increase	76-100% increase
76-100% decrease	5-25% decrease	26%-50% increase	Over 100% increase
51-75% decrease	+/-5% little or no impact	51-75% increase	Do not know

29) What is the particular change in scope of the E-PRTR Regulation with regard to activities and activity thresholds that would trigger the change in the work time spent on PRTR-related duties?

Problem 2: Pollutants and thresholds for reporting releases

The E-PRTR's Annex II lists 91 pollutants. These cover a substantial proportion of pollutants listed in other EU environmental protection initiatives. Analysis of the IED and Best Available Techniques (BAT) conclusions, European environmental legislation and international recommendations, other PRTRs and the scientific literature identified a number of new pollutants for potential addition to the E-PRTR (**ICF et al, 2020**). E-PRTR may also have the potential to better align with controls set under the REACH Regulation (Registration, Evaluation, Authorisation and Restriction of Chemicals, EC 1907/2006) and updates of the Environmental Quality Standards Directive (2008/105/EC).

30) Is it important to include the following pollutants in the scope of the E-PRTR Regulation?

	Releases to air			Releases to water			Releases to land		
	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know
17-beta-Estradiol (E2); 17-alpha-Ethinylestradiol (EE2); Estrone (E1)	( )	( )	( )	( )	( )	( )	( )	( )	( )
2-Ethoxyethanol / ethylene glycol monoethyl ether	( )	( )	( )	( )	( )	( )	( )	( )	( )
Acetaldehyde	( )	( )	( )	( )	( )	( )	( )	( )	( )
Aclonifen	( )	( )	( )	( )	( )	( )	( )	( )	( )
Acrolein	( )	( )	( )	( )	( )	( )	( )	( )	( )
Acrylamide	( )	( )	( )	( )	( )	( )	( )	( )	( )
Acrylic acid and its water-soluble salts	( )	( )	( )	( )	( )	( )	( )	( )	( )
Acrylonitrile	( )	( )	( )	( )	( )	( )	( )	( )	( )
Antimony and compounds (as Sb)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Beryllium and compounds (as Be)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Bifenox	( )	( )	( )	( )	( )	( )	( )	( )	( )
Bisphenol-A	( )	( )	( )	( )	( )	( )	( )	( )	( )

	Releases to air			Releases to water			Releases to land		
	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know
Carbamazepine	( )	( )	( )	( )	( )	( )	( )	( )	( )
Black carbon (BC)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Carbon disulphide	( )	( )	( )	( )	( )	( )	( )	( )	( )
Chromium (VI) compounds (as Cr)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Cobalt and compounds (as Co)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Cybutryne	( )	( )	( )	( )	( )	( )	( )	( )	( )
Cypermethrin	( )	( )	( )	( )	( )	( )	( )	( )	( )
Dichlorvos	( )	( )	( )	( )	( )	( )	( )	( )	( )
Dicofol	( )	( )	( )	( )	( )	( )	( )	( )	( )
Fluorinated ethers and alcohols	( )	( )	( )	( )	( )	( )	( )	( )	( )
Formaldehyde (formalin)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Glyphosate	( )	( )	( )	( )	( )	( )	( )	( )	( )
Hexabromocyclododecane (HBCDD)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Hydrogen sulphide	( )	( )	( )	( )	( )	( )	( )	( )	( )
Macrolide antibiotics (azithromycin, clarithroymycin, erythromycin)	( )	( )	( )	( )	( )	( )	( )	( )	( )

	Releases to air			Releases to water			Releases to land		
	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know
Manganese and compounds (as Mn)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Microplastics, i.e. materials consisting of solid polymer-containing particles, where ≥ 1% w/w of particles have (i) all dimensions 1nm ≤ x ≤ 5mm, or (ii), for fibres, a length of 3nm ≤ x ≤ 15mm and length to diameter ratio of >3.	( )	( )	( )	( )	( )	( )	( )	( )	( )
n-Hexane	( )	( )	( )	( )	( )	( )	( )	( )	( )
Neonicotinoids (Imidacloprid, Thiacloprid, Thiamethoxam, Acetamiprid, Clothianidin)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Nitrogen trifluoride (NF3)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Nicosulfuron (herbicide)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Per- and Polyfluoroalkyl Substances (PFAS) all PFAS as a group, or	( )	( )	( )	( )	( )	( )	( )	( )	( )
Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	( )	( )	( )	( )	( )	( )	( )	( )	( )
Perfluorooctane sulfonic acid (PFOS), its salts and	( )	( )	( )	( )	( )	( )	( )	( )	( )

	Releases to air			Releases to water			Releases to land		
	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know	Not important	Important	NA / Don't know
perfluorooctane sulfonyl fluoride (PFOS-F)									
Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds	( )	( )	( )	( )	( )	( )	( )	( )	( )
PM2.5	( )	( )	( )	( )	( )	( )	( )	( )	( )
Polychlorinated naphthalenes	( )	( )	( )	( )	( )	( )	( )	( )	( )
Pyrethroids (Bifenthrin, Deltamethrin, Esfenvalerate, Permethrin)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Quinoxyfen	( )	( )	( )	( )	( )	( )	( )	( )	( )
Selenium and compounds (as Se)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Short-chain chlorinated paraffins (SCCPs)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Silver (biocide)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Sulfamethoxazole	( )	( )	( )	( )	( )	( )	( )	( )	( )
Sulphates	( )	( )	( )	( )	( )	( )	( )	( )	( )
Terbutryn	( )	( )	( )	( )	( )	( )	( )	( )	( )
Thallium and compounds (as Tl)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Tin and tin compounds (as Sn)	( )	( )	( )	( )	( )	( )	( )	( )	( )

	Releases to air			Releases to water			Releases to land		
	Not important	**Important**	**NA / Don't know**	**Not important**	**Important**	**NA / Don't know**	**Not important**	**Important**	**NA / Don't know**
Total suspended solids (TSS)	( )	( )	( )	( )	( )	( )	( )	( )	( )
Triclosan	( )	( )	( )	( )	( )	( )	( )	( )	( )
Vanadium and compounds (as V)	( )	( )	( )	( )	( )	( )	( )	( )	( )

31) If included (see preceding question), what would be appropriate E-PRTR thresholds for reporting releases? Please suggest threshold value and provide supporting information.

	Release to air - threshold value (kg/y)	Release to air - supporting information	Release to water - threshold value (kg/y)	Release to water - supporting information	Release to land - threshold value (kg/y)	Release to land - supporting information
17-beta-Estradiol (E2); 17-alpha-Ethinylestradiol (EE2); Estrone (E1)	( )	( )	( )	( )	( )	( )
2-Ethoxyethanol / ethylene glycol monoethyl ether	( )	( )	( )	( )	( )	( )
Acetaldehyde	( )	( )	( )	( )	( )	( )
Aclonifen	( )	( )	( )	( )	( )	( )
Acrolein	( )	( )	( )	( )	( )	( )
Acrylamide	( )	( )	( )	( )	( )	( )
Acrylic acid and its water-soluble salts	( )	( )	( )	( )	( )	( )
Acrylonitrile	( )	( )	( )	( )	( )	( )
Antimony and compounds (as Sb)	( )	( )	( )	( )	( )	( )
Beryllium and compounds (as Be)	( )	( )	( )	( )	( )	( )

	Release to air - threshold value (kg/y)	Release to air - supporting information	Release to water - threshold value (kg/y)	Release to water - supporting information	Release to land - threshold value (kg/y)	Release to land - supporting information
Bifenox	( )	( )	( )	( )	( )	( )
Bisphenol-A	( )	( )	( )	( )	( )	( )
Black carbon (BC)	( )	( )	( )	( )	( )	( )
Carbamazepine	( )	( )	( )	( )	( )	( )
Carbon disulphide	( )	( )	( )	( )	( )	( )
Chromium (VI) compounds (as Cr)	( )	( )	( )	( )	( )	( )
Cobalt and compounds (as Co)	( )	( )	( )	( )	( )	( )
Cybutryne	( )	( )	( )	( )	( )	( )
Cypermethrin	( )	( )	( )	( )	( )	( )
Dichlorvos	( )	( )	( )	( )	( )	( )
Dicofol	( )	( )	( )	( )	( )	( )
Fluorinated ethers and alcohols	( )	( )	( )	( )	( )	( )
Formaldehyde (formalin)	( )	( )	( )	( )	( )	( )
Glyphosate	( )	( )	( )	( )	( )	( )
Hexabromocyclododecane (HBCDD)	( )	( )	( )	( )	( )	( )
Hydrogen sulphide	( )	( )	( )	( )	( )	( )
Macrolide antibiotics (azithromycin, clarithroymycin, erythromycin)	( )	( )	( )	( )	( )	( )
Manganese and compounds (as Mn)	( )	( )	( )	( )	( )	( )
Microplastics i.e. materials consisting of solid polymer-containing particles, where ≥ 1% w/w of particles have (i) all dimensions 1nm ≤ x ≤ 5mm, or (ii), for fibres, a length of 3nm ≤ x ≤ 15mm and length to diameter ratio of >3	( )	( )	( )	( )	( )	( )

	Release to air - threshold value (kg/y)	Release to air - supporting information	Release to water - threshold value (kg/y)	Release to water - supporting information	Release to land - threshold value (kg/y)	Release to land - supporting information
n-Hexane	( )	( )	( )	( )	( )	( )
Neonicotinoids (Imidacloprid, Thiacloprid, Thiamethoxam, Acetamiprid, Clothianidin)	( )	( )	( )	( )	( )	( )
Acetamiprid, Clothianidin)	( )	( )	( )	( )	( )	( )
Nitrogen trifluoride (NF3)	( )	( )	( )	( )	( )	( )
Nicosulfuron	( )	( )	( )	( )	( )	( )
Per- and Polyfluoroalkyl Substances (PFAS) all PFAS as a group, or	( )	( )	( )	( )	( )	( )
Perfluorohexane sulfonic acid (PFHxS), its salts and PFHxS-related compounds	( )	( )	( )	( )	( )	( )
Perfluorooctane sulfonic acid (PFOS), its salts and	( )	( )	( )	( )	( )	( )
perfluorooctane sulfonyl fluoride (PFOS-F)	( )	( )	( )	( )	( )	( )
Perfluorooctanoic acid (PFOA), its salts and PFOA-related compounds	( )	( )	( )	( )	( )	( )
PM2.5	( )	( )	( )	( )	( )	( )
Polychlorinated naphthalenes	( )	( )	( )	( )	( )	( )
Pyrethroids (Bifenthrin, Deltamethrin, Esfenvalerate, Permethrin)	( )	( )	( )	( )	( )	( )
Quinoxyfen	( )	( )	( )	( )	( )	( )
Selenium and compounds (as Se)	( )	( )	( )	( )	( )	( )
Short-chain chlorinated paraffins (SCCPs)	( )	( )	( )	( )	( )	( )
Silver (biocide)	( )	( )	( )	( )	( )	( )

	Release to air - threshold value (kg/y)	Release to air - supporting information	Release to water - threshold value (kg/y)	Release to water - supporting information	Release to land - threshold value (kg/y)	Release to land - supporting information
Sulfamethoxazole	( )	( )	( )	( )	( )	( )
Sulphates	( )	( )	( )	( )	( )	( )
Terbutryn	( )	( )	( )	( )	( )	( )
Thallium and compounds (as Tl)	( )	( )	( )	( )	( )	( )
Tin and tin compounds (as Sn)	( )	( )	( )	( )	( )	( )
Total suspended particulate (TSP)	( )	( )	( )	( )	( )	( )
Total suspended solids (TSS)	( )	( )	( )	( )	( )	( )
Triclosan	( )	( )	( )	( )	( )	( )
Vanadium and compounds (as V)	( )	( )	( )	( )	( )	( )

Comments:

32) How important is it to implement the following mechanisms? Please explain your answers.

"Sunrise" mechanism: pollutants of emerging concern are periodically considered for addition to the E-PRTR 0 _____ [ ] _____100 [ ] NA Don't know

"Sunset" mechanism: E-PRTR pollutants, for which releases are reported in very low quantities for a number of years, are periodically considered for removal from the list 0 _____ [ ] _____100 [ ] NA Don't know

Comments:

33) Are there any other pollutants that should be considered for inclusion in the scope of the E-PRTR Regulation? Please justify your suggestions.

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34) Are there any pollutants that should be considered for removal from the scope of the E-PRTR Regulation? Please justify your suggestions.

	To be considered for removal?	**Justify your suggestion**
Methane (CH4)	( )	___
Carbon monoxide (CO)	( )	___
Carbon dioxide (CO2)	( )	___
Hydro-fluorocarbons (HFCs)	( )	___
Nitrous oxide (N2O)	( )	___
Ammonia (NH3)	( )	___
Non-methane volatile organic compounds (NMVOC)	( )	
Nitrogen oxides (NOx/NO2)	( )	___
Perfluorocarbons (PFCs)	( )	___
Sulphur hexafluoride (SF6)	( )	___
Sulphur oxides (SOx/SO2)	( )	___
Total nitrogen	( )	___
Total phosphorus	( )	___
Hydrochlorofluorocarbons (HCFCs)	( )	
Chlorofluorocarbons (CFCs)	( )	___
Halons	( )	___
Arsenic and compounds (as As)	( )	
Cadmium and compounds (as Cd)	( )	

	To be considered for removal?	Justify your suggestion
Chromium and compounds (as Cr)	( )	
Copper and compounds (as Cu)	( )	
Mercury and compounds (as Hg)	( )	
Nickel and compounds (as Ni)	( )	___
Lead and compounds (as Pb)	( )	___
Zinc and compounds (as Zn)	( )	___
Alachlor	( )	___
Aldrin	( )	___
Atrazine	( )	___
Chlordane	( )	___
Chlordecone	( )	___
Chlorfenvinphos	( )	___
Chloro-alkanes, C10-C13	( )	___
Chlorpyrifos	( )	___
DDT	( )	___
1,2-dichloroethane (EDC)	( )	___
Dichloromethane (DCM)	( )	___
Dieldrin	( )	___
Diuron	( )	___
Endosulphan	( )	___
Endrin	( )	___
Halogenated organic compounds (as AOX)	( )	
Heptachlor	( )	___
Hexachlorobenzene (HCB)	( )	___
Hexachlorobutadiene (HCBD)	( )	
1,2,3,4,5,6-hexachlorocyclohexane(HCH)	( )	
Lindane	( )	___
Mirex	( )	___
PCDD + PCDF (dioxins + furans) (as Teq)	( )	
Pentachlorobenzene	( )	___
Pentachlorophenol (PCP)	( )	___
Polychlorinated biphenyls (PCBs)	( )	

	To be considered for removal?	Justify your suggestion
Simazine	( )	___
Tetrachloroethylene (PER)	( )	___
Tetrachloromethane (TCM)	( )	___
Trichlorobenzenes (TCBs) (all isomers)	( )	
1,1,1-trichloroethane	( )	___
1,1,2,2-tetrachloroethane	( )	___
Trichloroethylene	( )	___
Trichloromethane	( )	___
Toxaphene	( )	___
Vinyl chloride	( )	___
Anthracene	( )	___
Benzene	( )	___
Brominated diphenylethers (PBDE)	( )	
Nonylphenol and Nonylphenol ethoxylates (NP/NPEs)	( )	
Ethyl benzene	( )	___
Ethylene oxide	( )	___
Isoproturon	( )	___
Naphthalene	( )	___
Organotin compounds (as total Sn)	( )	
Di-(2-ethylhexyl) phthalate (DEHP)	( )	
Phenols (as total C)	( )	___
Polycyclic aromatic hydrocarbons (PAHs)	( )	
Toluene	( )	___
Tributyltin and compounds	( )	___
Triphenyltin and compounds	( )	___
Total organic carbon (TOC) (as total C or COD/3)	( )	
Trifluralin	( )	___
Xylenes	( )	___
Chlorides	( )	___
Chlorine and inorganic compounds	( )	
Asbestos	( )	___
Cyanides (as total CN)	( )	___

	To be considered for removal?	Justify your suggestion
Fluorides (as total F)	( )	___
Fluorine and inorganic compounds (as HF)	( )	
Hydrogen cyanide (HCN)	( )	___
Particulate matter (PM10)	( )	___
Octylphenols and Octylphenol ethoxylates	( )	
Fluoranthene	( )	___
Isodrin	( )	___
Hexabromobiphenyl	( )	___
Benzo(g,h,i)perylene	( )	___

35) For the overall effectiveness of the E-PRTR, how important is it to reduce reporting thresholds to capture 90% of industrial releases?

0 _____[__]_____ 100[ ] Don't know

36) As suggested above, how would the revision of the scope of the E-PRTR Regulation with regard to pollutants and reporting thresholds affect the time you spend on reporting information to your competent authority? Please indicate the number of additional or fewer person-days.

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37) As suggested above, how would the revision of the scope of the E-PRTR Regulation with regard to pollutants and reporting thresholds affect the time you spend on quality assuring the data provided by facility operators?

Over 100% increase	26%-50% increase	5-25% decrease	76-100% decrease
76-100% increase	5-25% increase	26%-50% decrease	Over 100% decrease
51-75% increase	+/-5% little or no impact	51-75% decrease	Do not know

38) What is the particular change in scope of the E-PRTR Regulation with regard to pollutants and reporting thresholds that would trigger the change in the work time spent on PRTR-related duties?

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39) Should the E-PRTR supporting guidance specify which pollutants must be reported for which activity? Please explain.

( ) Yes: _____
( ) No: _____
( ) Don't know: _____

Comments:

40) Should the E-PRTR supporting guidance specify which release quantification method is to be used for reporting to the E-PRTR? Please explain.

( ) Yes: _____
( ) No: _____
( ) Don't know: _____

Comments:

Problem area 3: Information to track progress towards the circular economy and decarbonisation of industry

Data on the composition of waste transfers and data on resource consumption (e.g. energy, water and raw materials) are currently not included or only partly included in the E-PRTR. They could be an important contribution to understanding progress towards realising circular economy objectives. The addition of contextual data, e.g. energy use, could also increase the usefulness of the E-PRTR in supporting the assessment of the environmental performance and the carbon efficiency of different industrial activities. If such data were reported to competent authorities and submitted to the E-PRTR, some may be claimed as confidential business information (CBI) and excluded from public data products.

41) How important is it to require the reporting of additional contextual information? If 'Other contextual information', please specify in the text box below.

Energy consumption	0	[__]	100 [ ] Don't know
Energy recovery / reuse	0	[__]	100 [ ] Don't know
Raw materials consumption	0	[__]	100 [ ] Don't know
Water consumption	0	[__]	100 [ ] Don't know
Percentage of water reused	0	[__]	100 [ ] Don't know
Composition of waste transfers	0	[__]	100 [ ] Don't know
Other contextual information	0	[__]	100 [ ] Don't know

Comments:

42) How would these additional reporting requirements affect the time you spend on reporting information to your competent authority?

Energy consumption	0 _____[__]_____	100 [ ] NA / Don't know
Energy recovery / reuse	0 _____[__]_____	100 [ ] NA / Don't know
Raw materials consumption	0 _____[__]_____	100 [ ] NA / Don't know
Water consumption	0 _____[__]_____	100 [ ] NA / Don't know
Percentage of water reused	0 _____[__]_____	100 [ ] NA / Don't know
Composition of waste transfers	0 _____[__]_____	100 [ ] NA / Don't know
Other contextual information (if you specified any in the preceding question)	0 _____[__]_____	100 [ ] NA / Don't know

Comments:

43) How would these additional reporting requirements affect the time you spend on quality assuring the data provided by facility operators?

Energy consumption	0 _____ [ ] _____	100 [ ] NA Don't know
Energy recovery / reuse	0 _____ [ ] _____	100 [ ] NA Don't know
Raw materials consumption	0 _____ [ ] _____	100 [ ] NA Don't know
Water consumption	0 _____ [ ] _____	100 [ ] NA Don't know
Percentage of water reused	0 _____ [ ] _____	100 [ ] NA Don't know
Composition of waste transfers	0 _____ [ ] _____	100 [ ] NA Don't know
Other contextual information (if you specified any in the preceding question)	0 _____ [ ] _____	100 [ ] NA Don't know

Comments:

44) How important is it to require reporting of disaggregated HFCs, HCFCs, CFCs and PFCs? Please explain.

0 _____[__]_____ 100[ ] Don't know

Comments:

45) Which individual HFCs, HCFCs, CFCs and PFCs compounds / sub-groups should be reported?

Problem area 4: Reporting modalities and data flow

Releases are quantified and reported to the E-PRTR by individual facilities using a bottom-up approach. For some current, and proposed, E-PRTR activities e.g. intensive livestock rearing, the bottom-up approach requires a large number of facilities to report. Such activities are often homogenous and are carried out by many small facilities, but the aggregated releases are significant. Instead, a top-down approach could be considered where relevant national statistics or sector-specific statistics and relevant emission factors are used for selected activities, pollutants and/or sizes of facilities to derive reasonable estimates of typical releases. This could ensure a proportionate reporting burden reflecting the size and environmental impact of certain facilities and/or activities.

46) In order to reduce administrative burden, how important is it to introduce flexibility in E-PRTR reporting modality for certain sectors? E.g. national/regional collation for intensive livestock farming. Please explain.

0 _____[__]_____ 100[ ] Don't know

Comments:

47) Beyond the reduction of administrative burden, what are the pros and cons of adopting a top-down approach for certain activities?

48) How would the following approaches affect the time lag between end of a reporting year and the time that data become available on the E-PRTR? If 'Other' approaches, please explain.

Improved reporting system to submit data to competent authorities (e.g. immediately flags errors and inconsistencies and enables communication and tracking of follow-up questions)	0 _____[ ] _____100 [ ] NA Don't know
Near real-time reporting of CEMS data for certain activities	0 _____[ ] _____100 [ ] NA Don't know

Clearer guidance on what pollutants should be reported and what quantification method to use	0	_____	[ ] _____	100 [ ] NA Don't know
Guidance and tools to assist the competent authorities with the review process (e.g. earlier flagging of anomalies and typical discrepancies)	0	_____	[ ] _____	100 [ ] NA Don't know
Improved submission system to EEA, to receive feedback, and to resolve follow-up questions quicker	0	_____	[ ] _____	100 [ ] NA Don't know
Other approaches	0	_____	[ ] _____	100 [ ] NA Don't know

Comments:

49) What are the main challenges with their implementation?

	Challenge
Improved reporting system to submit data to competent authorities (e.g. immediately flags errors and inconsistencies and enables communication and tracking of follow-up questions)	_____
Near real-time reporting of CEMS data for certain activities	_____
Clearer guidance on what pollutants should be reported and what quantification method to use	_____
Guidance and tools to assist the competent authorities with the review process (e.g. earlier flagging of anomalies and typical discrepancies)	_____
Improved submission system to EEA, to receive feedback, and to resolve follow-up questions quicker	_____
Other approaches specified in the preceding question.	_____

50) How would implementation of some or all of these approaches to reduce the time lag between the end of reporting year and availability of data affect your organisation? Please explain.

0 _____[__]_____100[ ] Not Applicable/Don't know

Comments:

Problem area 5: Access to E-PRTR information

There is a need to further promote participation in environmental decision making by improving the ease of public access to E-PRTR information and the utility of that information for users.

Operators reporting more than one type of activity. Alignment between the E-PRTR and the IED can also be problematic where more than one E-PRTR Annex I activity is carried out by an operator. In these cases, the facility reports the total aggregated releases to the E-PRTR rather than the activity-specific releases. This precludes the separation of releases needed for an IED activity-specific assessment.

51) How important is it to require releases to be reported at a 'sub-facility level', i.e. by installation? Please explain.

0 _____[__]_____100 [ ] Not Applicable/Don't know

Comments:

52) How would reporting at installation level, rather than facility level, affect your workload?

0 _____[__]_____100[ ] Not Applicable/Don't know

Comments:

53) Do you find it easy to access and use published E-PRTR information? Please explain.

-50 (very easy) _____[__]_____ 50 (very difficult) [ ] Don't know

Comments:

54) Is the E-PRTR useful for the below purposes? If you answered that the E-PRTR is not useful for any of the below purposes, please explain and indicate how it could be improved.

To understand environmental concerns in your local environment	0 _____[__]_____100
To increase transparency in environmental information and decision making	0 _____[__]_____100
To increase engagement of the public in environmental information and decision making	0 _____[__]_____100
To inform policy development (national or EU)	0 _____[__]_____ 100

To increase the accountability of operators of polluting activities and provide an incentive to improve environmental performance	0 _____[__]_____	100
To prevent and/or reduce environmental pollution	0 _____[__]_____	100
To achieve the European Green Deal goals	0 _____[__]_____	100

Comments:

55) How important is it for the E-PRTR to be available in languages other than English?

0 _____[__]_____ 100 [ ] Don't know

Problem area 6: Releases from diffuse sources and releases from products

Article 8 of the E-PRTR Regulation fulfils the Kyiv Protocol requirement to include information on releases from diffuse sources with a sufficient level of geographical disaggregation. The Kyiv Protocol defines "diffuse sources" as the "many smaller or scattered sources from which pollutants may be released to land, air or water, whose combined impact on those media may be significant and for which it is impractical to collect reports from each individual source". This definition covers, for example, road transport, shipping, aviation, agriculture, fuel distribution, domestic heating and facilities that are below PRTR capacity thresholds.

The previous limited E-PRTR exercises to estimate releases to **air** and **water** from diffuse sources are now substantially out of date. More current data on releases from diffuse sources would provide a more holistic and comprehensive quantification of releases from EU anthropogenic sources to set releases from EU (agro-)industrial sources in context.

Future data could be compiled by Member States providing information specific to their country; by new Commission studies; and/or by utilising spatially resolved information delivered by other reporting mechanisms, e.g. the National Emissions Ceilings Directive (NECD, 2016/2284/EU), air emissions inventories or Water Information System for Europe (WISE) data under the Water Framework Directive (2000/60/EC).

56) Have you ever accessed the E-PRTR information on releases from diffuse sources?

( ) Yes
( ) No

57) How can the current E-PRTR information on releases from diffuse sources be improved?

[ ] Address more sources (Please explain)
[ ] Improved spatial resolution
[ ] Use methodologies specific to individual countries
[ ] More recent estimates
[ ] Estimates at regular intervals to develop a time series
( ) Other (Please explain): _____

58) What would be the best way to compile estimates of releases from diffuse sources?

( ) Member States report, at regular intervals, using methods that best capture the situation in their country
( ) Member States report, at regular intervals, using a standardised template and standardised emission factors, at regular intervals
( ) Dedicated Commission studies (of the type already undertaken), at regular intervals
( ) Use estimates from other reporting requirements
( ) Other (Please explain): _____

59) How important is it for the E-PRTR to estimate releases from products? Please explain.

0 _____[__]_____ 100 [ ] Don't know

Comments:

60) What do you consider would be the best mechanism to derive estimates of releases from products?

General

61) Please provide any other comment or suggestion you would like to share regarding the revision of the E-PRTR Regulation.

Thank You!

Annex 3 Open Public Consultation Questionnaire

Introduction: European Green Deal, and the Role of Industry in Cleaning and Greening the EU

The European Green Deal sets the overall strategy on dealing with climate-related and wider environmental challenges whilst achieving "greener" EU economic growth.

In parallel, the Industrial Strategy for Europe highlights the need for new processes and technologies, innovation and investment to strengthen our industrial competitiveness and facilitate industry's shift to a climate neutral, clean and circular economy.

Since 1996, integrated pollution prevention and control (IPPC) methodologies and legislation has been the way in which the EU's Member States have issued environmental permits to govern the operation of larger industrial plants. The latest version of the EU legal rules is called the **Industrial Emission Directive (IED)** - Directive 2010/75/EU. The IED is effective in controlling pollution to air, water and soil from larger industrial and agricultural plants in an integrated way, and in pushing forward the incorporation of innovative "Best Available Techniques" [42]

Working hand-in-hand with the IED, the **European Pollutant Release and Transfer Register (E-PRTR)** Regulation (EC) 166/2006 (as amended) is the Europe-wide register that provides easily accessible key environmental data from industrial facilities in European Union Member States and in Iceland, Liechtenstein and Norway.

The new European Green Deal and the Zero Pollution Ambition for Europe

The European Green Deal, adopted in December 2019, **seeks to go way beyond the current policies to control emissions to air, water and soil. It sets out a long-term pathway to 2050**, to ensure a **climate-neutral, clean and circular economy**, **optimising waste management and minimising pollution** over this timeframe**.**

The Green Deal commits inter alia to:

1. adopting an **action plan towards a zero pollution ambition**. Separate consultations on the Zero Pollution Action Plan initiative are ongoing.

2. **revising EU measures to address pollution from large industrial plants, including both the IED and the E-PRTR, to:**

- Look at the sectoral scope of the legislation and at how to make it fully consistent with climate, energy and circular economy policies
- Ensure that industry sectors maintain their role in improving the EU's environment
- Increase the take-up by industry and agricultural sectors of novel and proven techniques to create a more sustainable EU economy, at the same time as achieving a cleaner environment that improves public health
- Improve public access to environmental information.

[42] Defined in Article 3 (10) of Directive 2010/75/EU as a combination of "best", "techniques" and "available techniques". Using this trio of conditions, the emphasis of the end result is (sensu lato) on achieving the most effective way of protecting the environment as a whole, under economically and technically viable conditions, and referring to the way in which the installation is designed, built, maintained, operated and decommissioned.

- The scope of the revisions mentioned above are summarised in two brief documents: the IED inception impact assessment and the E-PRTR inception impact assessment.

The IED (Industrial Emissions Directive) – in more detail

The IED controls the environmental impacts of over 50,000 of the larger-scale agricultural and industrial activities in an integrated manner, to achieve a high level of protection of the environment. Activities regulated by the IED include power plants, refineries, waste treatment and incineration, production of steel, non-ferrous metals, cement, lime, glass, chemicals, ceramics, pulp and paper, food and drink, as well as the intensive rearing of pigs and poultry.

National authorities are obliged to issue permits for plants conducting activities under the scope of the IED, with permit conditions based on the use of Best Available Techniques (BAT). To ensure a consistent EU approach, sectoral BAT reference documents (BREFs) – tailored to each agricultural or industrial activity - are produced via EU-wide assessment with Technical Working Groups whose members include environmental and civil society NGOs, industry associations, EU Member States and the European Commission. So-called 'BAT conclusions' derived from these discussions, are then formally adopted into EU law and are binding. EU Member States' permitting authorities must use these as the reference when setting permit conditions.

The IED was evaluated earlier in 2020 to check how it was functioning. Findings from this evaluation included:

- Pollution is still occurring across the EU from large (agro)industrial plants (including emissions to air, water and soil; and use of harmful substances)
- Extending the IED to other sectors or activities could be appropriate, or thresholds at which plants become subject to the IED might be changed, in order to reduce significant pollution
- Member States are implementing EU IED requirements in a heterogeneous manner, including the stricter BAT conclusions measures. The result is that the environmental ambition varies across the EU's Member States
- Further efforts could be made to support the decarbonisation efforts of large-scale industries and agricultural activities as a whole
- Large industrial and agricultural facilities could contribute more to a circular economy, and their exploitation of natural resources could be reduced
- The IED may be able to more proactively promote new production processes, technologies and innovation
- Greater coherence and synergies with other EU legislation (e.g., the Emissions Trading System, the Landfill Directive and waste management opportunities) could be exploited.
- There is insufficient public access to information, participation in decision making and access to justice with regard to permitting decisions and revisions.

The European Pollutant Release and Transfer Register (E-PRTR)

The E-PRTR is the Europe-wide register that provides easily accessible key environmental data from industrial facilities in European Union Member States and in Iceland, Liechtenstein and Norway.

The register contains data reported annually by some 30,000 industrial facilities covering 65 economic activities across Europe, and complements the IED. It should be noted that some activities are covered by E-PRTR but not by IED (e.g. mining).

The E-PRTR registry contains details at Member State level of plants and related pollution/ discharges information throughout the EU, also enabling searches on individual or groups of pollutants to be made, including heavy metals, pesticides, greenhouse gases and dioxins for the year 2007 onwards. Some information on releases from diffuse sources is also available. Member States update the register's website annually.

The E-PRTR contributes to transparency and public participation in environmental decision-making. It implements, for the European Union, the UNECE (United Nations Economic Commission for Europe) PRTR Protocol to the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters.

An evaluation of the E-PRTR concluded in 2016 that whilst the E-PRTR Regulation was very much fit for purpose, some elements could be improved, e.g. in areas where there were opportunities for simplification and cost savings, and where the scope of the current Regulation could be extended to improve coherence with the following policy areas:

- the IED (for some industrial activity definitions, and for the Large Combustion Plant inventory)
- EU waste law (e.g. level of detail required for waste types when reporting transfers, and risk of discrepancies in reporting, depending on whether the waste is being treated, or disposed of)
- the Emissions Trading System (and differences in activities and thresholds)
- water legislation (and emission to water reporting requirements); and
- the INSPIRE (**IN**frastructure for **SP**atial **I**nfo**R**mation in **E**urope) directive, relating to the interoperability of spatial datasets.

Your role – what you can do to help us … and the EU

The purpose of this consultation is to gather the views of the public on revising the IED and E-PRTR.

First of all, we would like to enlist your help in understanding existing problems better. Secondly, we are trying to identify policy options to address these problems efficiently, clearly and coherently.

We are conducting the work on Impact Assessment to possibly revise the IED and the E-PRTR in parallel, to make the process more coherent and streamlined.

Content of this consultation

The consultation is divided into **three** parts:

- **Part 1** - asks for some information about you (such as which country you come from).
- **Part 2** - aims to gather information on general awareness and views of the impact of large (agro)industrial plants on the environment and the measures to manage it. The questions are aimed at the general public, and do not require any particular specialist knowledge, solely an interest in the area.
- **Part 3** - contains more detailed questions – it is addressed to those persons with more experience/ expertise in the area, who may wish to comment in greater depth on the impact of large (agro) industrial plants on the environment and the measures to manage it in the revisions under consideration. (Please also note that there will be also be a follow-on **Targeted Stakeholder Survey** for experts, and other general/ specific consultation opportunities via stakeholder meetings – see below).

Part 3 gives you the opportunity to let us know if you wish to take part in the follow-on Targeted Stakeholder Survey, and also to join in more detailed focus groups, interviews and stakeholder consultations.

At the end of the questionnaire, you are also able to upload one document (e.g. technical information, Position Paper, etc) supporting and detailing your views. **Once you have submitted your answers, you will be able to download a copy of your completed questionnaire.**

All responses to this consultation will be assessed and the results will be included in the analysis supporting our next steps. We will also produce a stand-alone factual summary on the input received, as well as a more detailed analysis of all consultation activities, which will be made available on the "Better Regulation" portal of the European Commission's website in the 2nd Quarter of 2021. More detailed material gathered during the consultation exercise may be uploaded to the publicly-available area of the Commission's "CIRCABC" library, and links to this will be provided to the general public.

If you have any questions, please contact the European Commission at this dedicated email address: **ENV-IED-REVISION@ec.europa.eu**

Your opinion matters, and we are very grateful to you for taking the time to answer these questions.

Part 1 - About you

[*STANDARD QUESTIONS FROM EU-SURVEY* – using the BRP template]

Language of my contribution:

[List of EU languages]

I am giving my contribution as:

Academic/research institution	Company/business organisation	EU citizen	Non-governmental organisation (NGO)	Trade union
Business association	Consumer organisation	Non-EU citizen	Public authority	Other (please specify)

First name:
Surname:
Email (this won't be published):
Organisation/association/institution/authority name:

Scale of your operation:

International	Local	National	Regional

Organisation size:

Micro (1 to 9 employees)	Small (10 to 49 employees)	Medium (50 to 249 employees)	Large (250 or more)

EU Transparency register number:

Check if your organisation is on the transparency register. It's a voluntary database for organisations seeking to influence EU decision making.

Country of origin:

Please add your country of origin, or that of your organisation.

[List of countries]

Publication - privacy settings

The Commission will publish the responses to this public consultation. Please choose whether you would like your details to be made public or to remain anonymous.

PLEASE TICK THIS BOX if you wish to remain **Anonymous**. We will only publish your type of respondent, country of origin and contribution. We will not publish any other details (name, organisation name and size, transparency register number, etc).	☐

PLEASE TICK THIS BOX if you are happy to make your submission **Public**. We will publish your identification details (name, organisation name and size, transparency register number, country of origin) and your contribution.	☐

PLEASE TICK THIS BOX to state that you agree with the personal data protection provisions	☐

Part 2 – General awareness and views on the environmental impacts of agro-industrial activities

This section asks about your general awareness of industrial emissions policy and to gather general views on revising the Industrial Emissions Directive (IED) and European Pollutant Release and Transfer Register (E-PRTR) Regulation. In each question, please select the answer which best represents your views.

Please note that you can choose to respond to this section - Part 2 – and then choose not to answer the following section (Part 3). NB Also, in either Part 2 or Part 3 – you do not need to answer all of the questions.

1. How important are the impacts of large industrial plants and intensive agricultural installations on the following environmental issues? :

	Very important	Important	Neither important nor unimportant	Not so important	Hardly important	I don't know
Air pollution	☐	☐	☐	☐	☐	☐
Soil pollution (contaminated land)	☐	☐	☐	☐	☐	☐
Pollution of rivers, lakes and ground water	☐	☐	☐	☐	☐	☐
Marine pollution	☐	☐	☐	☐	☐	☐
Emissions of greenhouse gases	☐	☐	☐	☐	☐	☐
Depletion of natural resources	☐	☐	☐	☐	☐	☐

Perturbing natural habitats and ecosystems	☐	☐	☐	☐	☐	☐
Odour pollution	☐	☐	☐	☐	☐	☐
Noise pollution	☐	☐	☐	☐	☐	☐
Other types of pollution or impacts	☐	☐	☐	☐	☐	☐
If other please specify (max. 300 characters with spaces)						

2. **Today**, *what is the contribution of* large (agro)industrial plants to the following techno-economic and environmental objectives? :

	Very important	Important	Neither important nor unimportant	Not so important	Hardly important	I don't know
Achieving a climate-neutral economy	☐	☐	☐	☐	☐	☐
Promoting green growth	☐	☐	☐	☐	☐	☐
Achieving a Circular Economy in the EU	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If other issues, please specify (max. 300 characters with spaces)						

3. **Post-2030,** how important **should the role be** of large (agro)industrial plants for the following techno-economic and environmental objectives? :

	Very important	Important	Neither important nor unimportant	Not so important	Hardly important	I don't know
Achieving a climate-neutral economy	☐	☐	☐	☐	☐	☐
Promoting green growth	☐	☐	☐	☐	☐	☐
Achieving a Circular Economy in the EU	☐	☐	☐	☐	☐	☐
Minimising pollution of soils, water and air in the EU	☐	☐	☐	☐	☐	☐
Minimising industry's emissions of greenhouse gases	☐	☐	☐	☐	☐	☐
Minimising agriculture-related emissions of greenhouse gases	☐	☐	☐	☐	☐	☐
Minimising effects on nearby natural habitats and ecosystems	☐	☐	☐	☐	☐	☐
Minimising noise pollution	☐	☐	☐	☐	☐	☐

Minimising odour pollution	☐	☐	☐	☐	☐	☐
Facilitating other changes	☐	☐	☐	☐	☐	☐
If other changes, please specify them (max. 300 characters with spaces)						

4. ***In the place where you mostly live, work or study, are there:***

Please tick one:

- No large (agro)industrial activities (if so, you may wish to skip Questions 5, 6 & 7)
- Relatively few large (agro)industrial activities?
- Some large (agro)industrial activities
- Medium levels of large (agro)industrial activities
- High levels of large (agro)industrial activities
- I do not know

5. *With regard to* ***available information*** *on the* ***level of environmental impacts of large (agro)industrial plants in your places of interest (place where you live, work or study), do you agree that:***

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree	I don't know
You have access to sufficient information on the **types** of environmental impacts of large (agro)industrial plants ?	☐	☐	☐	☐	☐	☐
You have access to sufficient information on the **level** of environmental impacts of large (agro)industrial plants ?	☐	☐	☐	☐	☐	☐
Optional: You can provide reasons for the above answer (max. 300 characters with spaces)						

6. With regard to the ***granting, revision or enforcement of operating permits for large (agro)industrial plants in your places of interest (place where you live, work or study***), ***how important is the principle that the public can find the information on the following questions…*** :

	Very important	Important	Neither important nor unimportant	Not so important	Hardly important	I don't know
Which authority is responsible for granting and enforcing permits for the operation of large (agro)industrial plants?	☐	☐	☐	☐	☐	☐

How can I participate in the granting or revision of permitting decisions for large (agro)industrial plants?	☐	☐	☐	☐	☐	☐
How can I appeal against the granting of such permits, or appeal for them to be revised?	☐	☐	☐	☐	☐	☐
Optional: You can provide reasons for the above answers (max. 300 characters with spaces)						

7. **For your places of interest (where you live, work or study), can you find information on the following? :**

	Yes	**No**	**I don't know**
New or recent environmental permit applications to operate large (agro)industrial plants			
Environmental permits that have already been granted to operate large (agro)industrial plants			
Compliance details for operators of large (agro)industrial plants with their environmental permit conditions			
Emissions monitoring data related to large (agro)industrial plants			
Reporting information on environmental management performance of large (agro)industrial plants (e.g. resource consumption, energy use, greenhouse gas emissions, other)			
Information on best available techniques (BAT) for industry sectors / farming installations			
Administrative and judicial review procedures and decisions related to the operation of large (agro)industrial plants			

On behalf of the DG Environment IED Team, thank you very much for your time and your contribution!

NB PLEASE FEEL FREE TO STOP HERE, OR TO CONTINUE TO PART 3 (DETAILED QUESTIONS, requiring some specialised knowledge)

If you have any questions, please contact the European Commission at this dedicated email address: **ENV-IED-REVISION@ec.europa.eu**

Part 3 – Detailed questions on revision of the IED and the E-PRTR

Part 3 seeks to gather more detailed views on revising the IED provisions and the E-PRTR. Please select the answer which best represents your views.

Please note that you can choose to respond to Part 3 only. Not all questions need to be answered.

8. Do you agree with the following statement, with regard to each environmental issue outlined below? "***The existing Industrial Emissions Directive, supplemented by horizontal legislation (e.g., Framework Directives on Waste and Water, Emissions Trading System, etc) and guidance on operating large (agro)industrial plants, sufficiently controls environmental impacts from these installations regarding…***" :

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree	I don't know
Air quality	☐	☐	☐	☐	☐	☐
Fresh water quality	☐	☐	☐	☐	☐	☐
Marine water quality	☐	☐	☐	☐	☐	☐
Efficient water use in processes	☐	☐	☐	☐	☐	☐
Efficient energy use in processes	☐	☐	☐	☐	☐	☐
Emissions of greenhouse gases	☐	☐	☐	☐	☐	☐
Consumption of raw materials	☐	☐	☐	☐	☐	☐
Soil contamination	☐	☐	☐	☐	☐	☐
Generation of waste	☐	☐	☐	☐	☐	☐
Habitats and ecosystems, especially close to installations	☐	☐	☐	☐	☐	☐
Fostering Circular Economy approaches	☐	☐	☐	☐	☐	☐
Noise emissions	☐	☐	☐	☐	☐	☐
Odour emissions	☐	☐	☐	☐	☐	☐
Other issues	☐	☐	☐	☐	☐	☐
If other issues, please specify them (max. 300 characters with spaces)						

9. **For existing sectors covered by IED BREFs**, to what extent do you agree that the following activities carried out at large (agro)industrial plants still have a ***significant negative impact*** on the ***environment and on human health***?

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree	I don't know
Energy – large combustion plants	☐	☐	☐	☐	☐	☐

Energy – oil refining, gasification and liquefaction, coke ovens	☐	☐	☐	☐	☐	☐
Metals production / processing - iron and steel, and other ferrous	☐	☐	☐	☐	☐	☐
Metals production / processing - non-ferrous	☐	☐	☐	☐	☐	☐
Mineral industry - cement, lime, magnesium oxide	☐	☐	☐	☐	☐	☐
Mineral industry – glass, glass fibre, ceramics	☐	☐	☐	☐	☐	☐
Production of chemicals	☐	☐	☐	☐	☐	☐
Hazardous waste management	☐	☐	☐	☐	☐	☐
Non-hazardous waste management	☐	☐	☐	☐	☐	☐
Waste incineration	☐	☐	☐	☐	☐	☐
Independent industrial wastewater treatment plants	☐	☐	☐	☐	☐	☐
Production of pulp and paper	☐	☐	☐	☐	☐	☐
Slaughterhouses & animal by-products	☐	☐	☐	☐	☐	☐
Ceramics industry	☐	☐	☐	☐	☐	☐
Textiles manufacturing	☐	☐	☐	☐	☐	☐
Food and drink production	☐	☐	☐	☐	☐	☐
Intensive rearing of poultry or pigs	☐	☐	☐	☐	☐	☐
Do you think that the threshold for consideration under the IED should be reduced or modified for any of the above sectors? If so, to what level(s)? (500 character maximum limit)						

10. Looking at **possible NEW sectors to be covered by the IED and the associated BREFs process**, to what extent do you agree that the following ***additional activities*** need to be addressed by the IED in order to significantly reduce ***significant negative impacts*** on the ***environment and on human health***?

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree	I don't know
Energy industries – medium combustion plants (i.e. under the IED, rather than via the existing Medium Combustion Plant Directive)	☐	☐	☐	☐	☐	☐
Intensive rearing of cattle	☐	☐	☐	☐	☐	☐

Intensive aquaculture (fish or shellfish farming)	☐	☐	☐	☐	☐	☐
Mining industries	☐	☐	☐	☐	☐	☐
Urban waste water treatment plants	☐	☐	☐	☐	☐	☐
Energy – oil and gas extraction activities	☐	☐	☐	☐	☐	☐
Landfills - management	☐	☐	☐	☐	☐	☐
Storage of Hazardous Substances	☐	☐	☐	☐	☐	☐
Other activities	☐	☐	☐	☐	☐	☐
If other activities, please specify which (max. 300 characters with spaces)						

11. To what extent do you think that the ***functioning of these current IED procedures needs to be improved in the future to optimise them***?

	No changes needed	Minor changes needed	Some changes needed	Many changes needed	System requires a complete overhaul	I don't know
Environmental permitting procedure to operate an (agro)industrial plant	☐	☐	☐	☐	☐	☐
Site inspections to ensure compliance with environmental permit conditions to operate an (agro)industrial plant	☐	☐	☐	☐	☐	☐
Reporting of emissions monitoring data related to compliance with environmental permit conditions to operate the (agro)industrial plant	☐	☐	☐	☐	☐	☐
Ease of obtaining information on what are considered to be best available techniques (BAT)	☐	☐	☐	☐	☐	☐
Administrative and judicial review procedures related to the operation of large (agro)industrial plants	☐	☐	☐	☐	☐	☐
Other issues - please specify which (max. 300 characters with spaces)						

12. How would you rate the ***functioning of the following aspects*** regarding the ***public's access to information in relation to agro-industrial activities*** and ***their impacts on the environment and on human health?***

	Very easily available	Available moderately easily	Neither easily available	Moderately difficult to access	Very difficult to access	I don't know

			nor difficult to access			
Information on IED permits already granted	☐	☐	☐	☐	☐	☐
Information submitted by operators/ potential operators to competent authorities ***prior to*** IED permits being granted	☐	☐	☐	☐	☐	☐
Information on the compliance of plants with IED permit conditions	☐	☐	☐	☐	☐	☐
Emissions monitoring data from agro-industrial plants covered by the IED	☐	☐	☐	☐	☐	☐
Information on best available techniques (BAT)	☐	☐	☐	☐	☐	☐
Application of BAT at the individual (agro)industrial plants	☐	☐	☐	☐	☐	☐
Other public information areas related to plant covered by the IED	☐	☐	☐	☐	☐	☐
Information on the environmental performance of large (agro)industrial plants	☐	☐	☐	☐	☐	☐
If other public information areas, please specify which (max. 300 characters with spaces)						

13. To what extent do you think that ***enabling greater public participation in decision making in these current IED procedures needs to be improved in the future to optimise them, related to (agro)industrial activities and their impacts on the environment?***

	No changes needed	Minor changes needed	Some changes needed	Many changes needed	System requires a complete overhaul	I don't know
IED permit applications	☐	☐	☐	☐	☐	☐
BAT-AEL derogation on the grounds of geographical location, local environmental conditions or installation's technical characteristics – Article 15(4) of the IED	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If other areas of public participation in IED decision making should be improved , please specify which (max. 300 characters with spaces)						

14. How would you rate the ***information provided in the E-PRTR regarding the environmental performance of large (agro)industrial plants***?

	Very complete	Moderately complete	Neither complete nor incomplete	Moderately incomplete	Very incomplete	I don't know

Releases to air	☐	☐	☐	☐	☐	☐
Releases to water	☐	☐	☐	☐	☐	☐
Releases to soil	☐	☐	☐	☐	☐	☐
Transfers of waste	☐	☐	☐	☐	☐	☐
Transfers to wastewater treatment plants	☐	☐	☐	☐	☐	☐
Diffuse releases to air	☐	☐	☐	☐	☐	☐
Diffuse releases to water	☐	☐	☐	☐	☐	☐
Releases of pollutants from accidents	☐	☐	☐	☐	☐	☐
Production volume of the facility	☐	☐	☐	☐	☐	☐
Other issues	☐	☐	☐	☐	☐	☐
Other issues - please specify if other aspects of environmental performance should be covered by the E-PRTR (max. 300 characters with spaces)						

15. How do you rate the ***search capability for information on industrial plant and agricultural operations in the E-PRTR? Do you consider that the following aspects work... ? :***

	Very well	Moderately well	Neither well nor poorly	Moderately poorly	Very poorly	I don't know
Search by - facility name	☐	☐	☐	☐	☐	☐
Search by – industrial activity	☐	☐	☐	☐	☐	☐
Search by - pollutant	☐	☐	☐	☐	☐	☐
Search by – geographical location	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If other public information areas, please specify which (max. 300 characters with spaces)						

16. Going into ***sector-specific data in the E-PRTR***, how would you ***rate the usefulness of the E-PRTR with regard to environmental performance data on these (agro)industrial sectors?***

	Very satisfactory	Moderately satisfactory	Neither satisfactory nor unsatisfactory	Moderately unsatisfactory	Very unsatisfactory	I don't know
Energy – large combustion plants	☐	☐	☐	☐	☐	☐
Energy – oil refining, gasification and liquefaction, coke ovens	☐	☐	☐	☐	☐	☐
Metals production / processing - iron and steel, other ferrous	☐	☐	☐	☐	☐	☐
Metals production / processing - non-ferrous	☐	☐	☐	☐	☐	☐
Mineral industry processes - cement, lime, magnesium oxide	☐	☐	☐	☐	☐	☐
Mineral industry – glass, glass fibre, ceramics	☐	☐	☐	☐	☐	☐
Production of chemicals	☐	☐	☐	☐	☐	☐
Hazardous waste management	☐	☐	☐	☐	☐	☐
Non-hazardous waste management	☐	☐	☐	☐	☐	☐
Waste incineration	☐	☐	☐	☐	☐	☐
Wastewater treatment plants	☐	☐	☐	☐	☐	☐
Production of pulp and paper	☐	☐	☐	☐	☐	☐
Textiles manufacturing	☐	☐	☐	☐	☐	☐
Food and drink production	☐	☐	☐	☐	☐	☐
Intensive rearing of poultry or pigs	☐	☐	☐	☐	☐	☐
Energy use – medium combustion plants (i.e., via IED, rather than via existing MCP Directive)	☐	☐	☐	☐	☐	☐
Intensive rearing of cattle	☐	☐	☐	☐	☐	☐
Intensive aquaculture (fish or shellfish farming)	☐	☐	☐	☐	☐	☐
Mining industries	☐	☐	☐	☐	☐	☐
Other activities	☐	☐	☐	☐	☐	☐
If other activities, please specify which (max. 300 characters with spaces)						

17. Thinking in more detail about the pollutants covered by the E-PRTR:

a) Are there any pollutants that should be removed from the E-PRTR?

b) Are there any pollutants that should be added to the E-PRTR?

c) Are there existing E-PRTR pollutants, or their reporting thresholds, that should be amended? Please specify which (max. 300 characters with spaces):

18. How well does ***public access to justice function in relation to (agro)industrial activities (e.g., siting of plant, operating permits etc)?***

	Very well	Moderately well	Neither well nor poorly	Moderately poorly	Very poorly	I don't know
Public access to justice in my Member State	☐	☐	☐	☐	☐	☐
Public access to justice at the EU level	☐	☐	☐	☐	☐	☐
The right to bring a case before a court, or to ask for a judicial review in my Member State, functions…	☐	☐	☐	☐	☐	☐
Other related elements	☐	☐	☐	☐	☐	☐
If you refer to other related elements, please specify which (max. 300 characters with spaces)						

If you think that ***other areas of public access to justice need to be addressed or improved with regard to agro-industrial plants***, ***please specify which***, (max. 300 characters with spaces):

19. In order to ***reach the objectives listed in the table below, what would be the necessary level of contribution from operators of large (agro)industrial plants?***

	Very high	High	Moderate	Low	Very low	I don't know
Progress towards achieving zero pollution (where emissions still occur, but within the carrying capacity – spatially and temporally – of air, water, soil, and ecosystem receptors)	☐	☐	☐	☐	☐	☐
Contributing to a Circular Economy	☐	☐	☐	☐	☐	☐
Supporting the transition to climate-neutral EU industry sectors through modernisation and decarbonisation	☐	☐	☐	☐	☐	☐
Support innovation and forward-looking uptake of new technologies to facilitate	☐	☐	☐	☐	☐	☐

industry's shift to a climate neutral and circular economy						
Other	☐	☐	☐	☐	☐	☐
If 'other', please specify which (max. 300 characters with spaces)						

20. 'In order to achieve the objectives listed in the table below, what would be the degree of effort needed from ***Member States' responsible competent authorities for large (agro)industrial plants***? :

	Very high	High	Moderate	Low	Very low	I don't know
Progress towards achieving zero pollution (where emissions still occur, but within the carrying capacity – spatially and temporally – of air, water, soil, and ecosystem receptors)	☐	☐	☐	☐	☐	☐
Contributing to a circular economy	☐	☐	☐	☐	☐	☐
Supporting the transition to climate-neutral EU industry sectors through modernisation and decarbonisation	☐	☐	☐	☐	☐	☐
Support innovation and forward-looking uptake of new technologies to facilitate industry's shift to a climate neutral and circular economy	☐	☐	☐	☐	☐	☐
Enhancing coherence with other EU environmental legislation	☐	☐	☐	☐	☐	☐
Enhanced coherence with other EU safety-related legislation	☐	☐	☐	☐	☐	☐
Simplifying provisions	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If 'other', please specify which (max. 300 characters with spaces)						

21. *Could the following objectives be achieved* ***by EU Member States alone without intervention at EU level****?* (i.e. greater use of ***subsidiarity***)

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree	I don't know
Progress towards a zero-pollution ambition	☐	☐	☐	☐	☐	☐

Contribute to a circular economy	☐	☐	☐	☐	☐	☐
EU industry's competitiveness, resilience and transition to becoming climate-neutral, through modernisation and decarbonisation	☐	☐	☐	☐	☐	☐
Support new technologies and innovation that will facilitate industry's shift to a climate neutral and circular economy	☐	☐	☐	☐	☐	☐
Enhanced coherence and synergies with other EU legislation	☐	☐	☐	☐	☐	☐
Simplify provisions	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If 'other', please specify which (max. 300 characters with spaces)						

22. When reviewing ***policy options in the IED and E-PRTR***, how would you ***assess the following, in relative importance?***

	Very important	Relatively important	Neutral	Relatively unimportant	Not important	I don't know
Options that contribute to a zero-pollution ambition for a toxic-free environment	☐	☐	☐	☐	☐	☐
Options that support EU industry's transition to becoming climate-neutral through decarbonisation	☐	☐	☐	☐	☐	☐
Options that realise EU industry's potential contribution to a circular economy	☐	☐	☐	☐	☐	☐
Options that support new technologies and innovation, that will support competitiveness and resilience and facilitate industry's shift to a climate-neutral, clean and circular economy	☐	☐	☐	☐	☐	☐
Options that support public access to environmental information relating to the impacts of industrial emissions; and also	☐	☐	☐	☐	☐	☐
Options to ensure a level playing field for companies and consistent regulatory	☐	☐	☐	☐	☐	☐

implementation across EU Member States						
Options that empower public participation in environmental decision making and access to justice.	☐	☐	☐	☐	☐	☐
Options that keep the administrative burden on business, and on government administrations, at a low level, but without compromising the effectiveness and efficiency of the EU in meeting its objectives	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If 'other', please specify which (max. 300 characters with spaces)						

23. In your opinion, ***when reviewing options for the revision of the IED, <u>what are the main future potential impacts on large (agro)industrial plants that will need to be assessed</u>*** (max. 500 characters, please)? :

24. ***Following COVID-19, how do you assess the following statements?***

	Strongly agree	Moderately agree	Neither agree nor disagree	Moderately disagree	Strongly disagree	I don't know
Revisions to the IED should very strongly contribute to the acceleration of the transition towards a green and digital green economic recovery	☐	☐	☐	☐	☐	☐
Funding earmarked for the "Green Deal" and for the EU's transition to a zero-pollution economy by 2050 should not be diverted to continue the "business as usual" trend regarding agro-industrial plants as part of the EU's response to COVID-19	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
If 'other', please specify which (max. 300 characters with spaces)						

25. Whilst ***maintaining the effectiveness*** of the IED/EPRTR legislation, would you see ***any possibilities to reduce costs?*** (max. 500 characters, please)? :

26. ***What is your view on the capacity of the IED and EPRTR to ensure a level playing field and fair competition?***(max. 500 characters) ? :

Any other comments

Please include any further information that would be useful for the ongoing impact assessments of the Industrial Emissions Directive (IED) or E-PRTR Regulation. In particular, please provide public references to relevant studies, position papers, and case studies or alternatively, please upload relevant documents. If you have already uploaded such a document as part of consultation activities undertaken for the reviews of the IED or the E-PRTR Regulation, please do NOT upload the same document again here.

If you are familiar with the IED and its implementation, or the E-PRTR, please indicate if you are happy to be contacted to participate in targeted consultation activities.

YES, please include me / my organisation in the targeted consultation activities on revision of the IED	☐
YES, please include me / my organisation in the targeted consultation activities on revision of the E-PRTR	☐

In particular, if you have any further information that you believe would be useful for this impact assessment, please respond to the ***subsequent*** **Targeted Stakeholder Survey** that will also be conducted for this study. The targeted survey offers the opportunity to provide public references/documents for relevant studies.

On behalf of the DG Environment IED Team, thank you very much for your contribution to this Consultation!

If you have any questions, please contact the European Commission at this dedicated email address: **ENV-IED-REVISION@ec.europa.eu**

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