Using PRTRs to Evaluate Progress Toward the Sustainable Development Goals (SDG)

TRI: Advancing Global Sustainability
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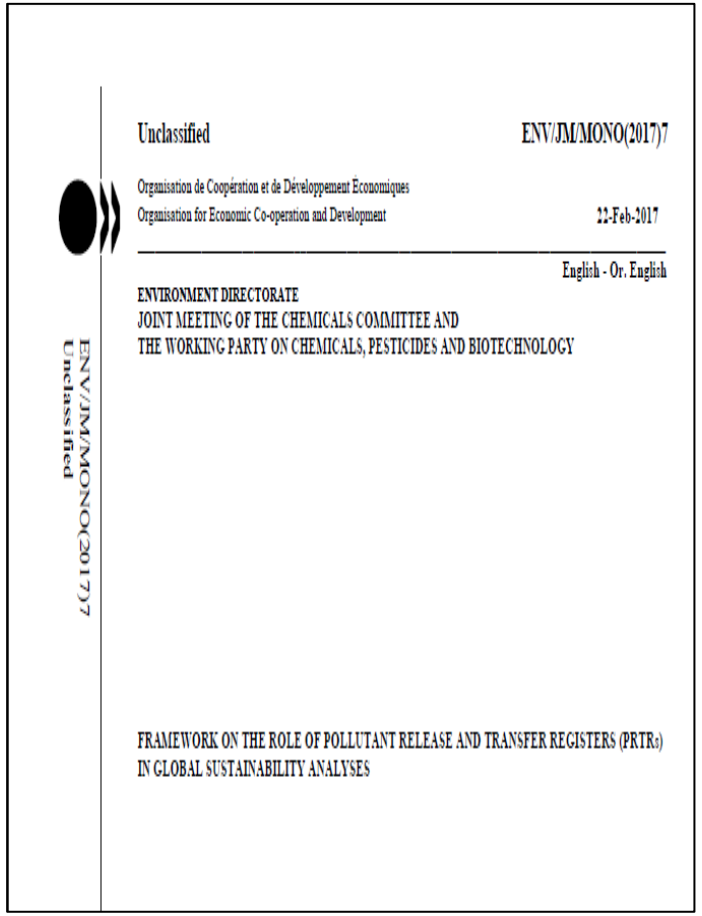
Caitlin S. Briere, US EPA
OPPT – Data Analysis & Dissemination Branch
Chairperson, OECD Working Party on PRTR

Overview

- Project Origins
  - Framework
  - 2030 Agenda for Sustainable Development
- History of the Project
  - Initial discussion at OECD's 1st meeting of the WG-PRTR (June 2017)
  - Development & Implementation of the OECD's Action Plan
- Summary Findings
- Publication of Report and Visualization Dashboard
- Latest updates
- Q&A

OECD's *Framework on the Role of PRTR in Global Sustainability Analyses*

- Presents strategies for harmonizing PRTR data for use in global-scale analyses
- Provides guidance on how PRTR data from multiple PRTR systems can be used to track progress towards global sustainability
- Illustrates how data from PRTRs can be integrated
- *Framework* document published Feb. 2017 (developed from 2011 to 2017)



Unclassified ENV/JM/MONO(2017)7

Organisation de Coopération et de Développement Economiques
Organisation for Economic Co-operation and Development 22-Feb-2017

English - Or. English

ENVIRONMENT DIRECTORATE
JOINT MEETING OF THE CHEMICALS COMMITTEE AND
THE WORKING PARTY ON CHEMICALS, PESTICIDES AND BIOTECHNOLOGY

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FRAMEWORK ON THE ROLE OF POLLUTANT RELEASE AND TRANSFER REGISTERS (PRTRs)
IN GLOBAL SUSTAINABILITY ANALYSES

UN Sustainable Development Goals

- In Sept. 2015, countries adopted a set of goals to **end poverty**, **protect the planet**, and **ensure prosperity for all**.
- Published as Transforming Our World: The 2030 Agenda for Sustainable Development
  - Sets forth a plan to “shift the world on to a sustainable and resilient path”
  - Defines 17 SDGs that encompass the economic, environmental, and social dimensions of sustainability

History of the Project

Discussed at 1st Meeting of the OECD Working Group-PRTR (June 2017) to apply the *Framework:*

- Project Objective

  Use PRTR data to track progress toward UN Sustainable Development Goals (SDGs)

- Project Considerations
  - Scope: Which PRTRs/Chemicals to focus on?
  - Possible Analyses: Which data analyses to focus on?
  - Alignment to SDGs: Which SDG(s) to focus on?

History of the Project

Initial discussion at the 1st Working Group-PRTR Meeting (June 2017) to apply the *Framework:*

Which PRTRs and chemicals to include?

- **PRTRs:** Select 4-6 PRTRs that represent geographical diversity and can provide sufficient trend data on common chemicals
- **Chemicals:** Select a short but diverse group of priority chemicals to demonstrate application of PRTR data to track SDGs
- **Rationale for selections**: Develop a construct for the pilot application of PRTR data to evaluate SDGs

History of the Project

Discussion at the 1st Working Group-PRTR Meeting (June 2017) to apply the *Framework:*

What analytical questions to explore?

- Consider analysis options given PRTR differences and objective to track progress towards global sustainability

- For consideration:

  - Data most readily available for most PRTRs
  - Data most consistent among PRTRs
  - Baseline year for trend analyses
  - Presentation for indicator purposes

Initial Project Scope

PRTRs

- US
- Canada
- Japan
- Australia
- EU
- Chile

Chemicals

- Benzene
- Nickel and Nickel Compounds
- Tetrachloroethylene
- 1,2-dichloroethane
- Di(2-Ethylhexyl) Phthalate
- Dichloromethane
- Ethylbenzene
- Trichloroethylene
- Styrene

Initial Project Scope

Potentially Relevant SDGs:

- Goal 3: Ensure healthy lives and promote well-being for all at all ages
- Goal 6: Ensure availability and sustainable management of water and sanitation for all
- Goal 9: Build resilient infrastructure
- Goal 12: Ensure sustainable consumption and production patterns
- Goal 16: Promote peaceful and inclusive societies for sustainable development

Development of OECD's Action Plan

- Feedback from OECD WG-PRTR members led to an expanded list of pollutants:
  - Cadmium & cadmium compounds
  - Chromium & chromium compounds
  - Mercury & mercury compounds
  - Sulfur dioxide
  - Particulate matter

Development of OECD's Action Plan

Full list of pollutants to be included:

• Benzene	• Nickel & nickel compounds
• Tetrachloroethylene	• 1,2-dichloroethane
• Di-(2-ethylhexyl)phthalate	• Dichloromethane
• Ethylbenzene	• Trichloroethylene
• Styrene	• *Cadmium & cadmium compounds**
• *Sulfur dioxide**	• *Chromium & chromium compounds**
• *Particulate matter**	• *Mercury & mercury compounds**

Development of OECD's Action Plan

- Expanded list of PRTR systems to include Mexico
  - Incorporates PRTR data for all of North America
- PRTR systems now included in the project:
  - Australia
  - Canada
  - Chile
  - E-PRTR
  - Japan
  - Mexico
  - United States *(in addition to TRI chemical data, the National Emissions Inventory [NEI] serves as a source of data for PM and SO_2)*

OECD's Action Plan

- Conclusion: SDG Target 12.4 is most directly relevant to *readily-available, comparable* PRTR data
- Tracking Target 12.4 by media (air, water, soil/land) will simultaneously provide information to track Targets 3.9 and 6.3
  - Further exploration of other Targets may come in later stages of this project as additional data is compiled

Target 12.4: *By 2020, achieve the environmentally sound management of chemicals… and significantly reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment.*

OECD's Action Plan

Analytical Scope & Data Collection

Industrial scope – focus on manufacturing sectors

PRTR data – focus on on-site pollutant releases to air and water (applicable to Target 12.4)

Other factors – manufacturing GDP; chemical-specific toxicity weights or characterization factors (toxicity impact scores for cancer, non-cancer, and ecotoxicity)

OECD's Action Plan

Analysis Plan

- Snapshot analyses – most recent year of data
- Trend analyses – 2008 to 2016
- Comparative analyses between PRTR systems
- Toxicity-weighted release quantities
- Economic information as an indicator (e.g. kg released/$ value added)

Analytic Descriptors

- Pollutant release quantities (kg)
- Toxicity-weighted release quantities
- Pollutant release quantities per unit of production
- Toxicity-weighted release quantities per unit of production

Implementation of OECD's Action Plan:
November 2018 – December 2020

Action Plan published by OECD in December 2019

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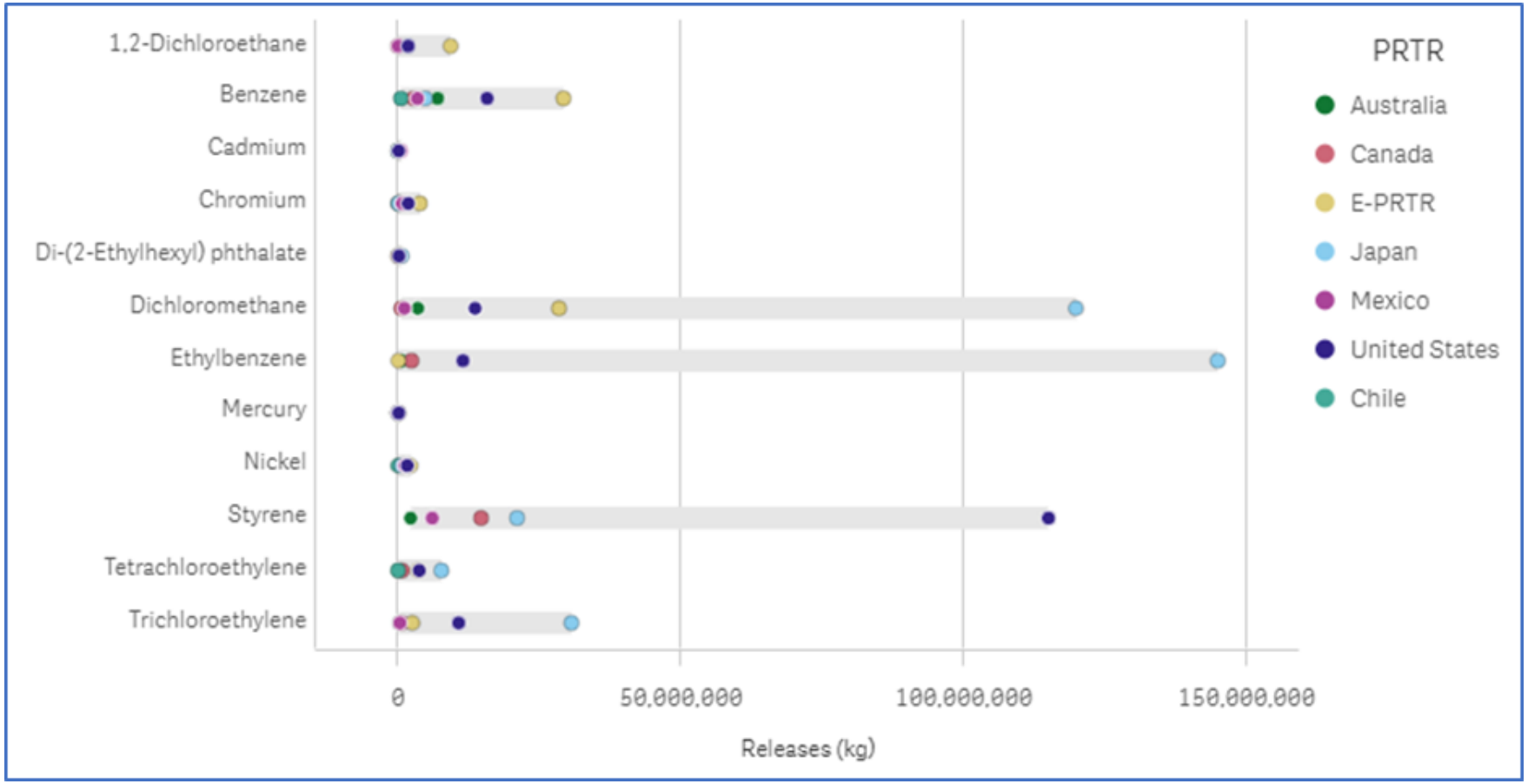
Development of 14 chemical profiles *(appended to draft summary report)*:

- Pollutant overview (e.g. physical properties, origins, uses)
- Snapshot analyses:
  - Total global air & water releases by sub-sector, 2008-2017
  - Total air & water releases by PRTR system, 2008-2017
- Trend analyses, 2008-2017:
  - Global annual air & water releases
  - Annual air & water releases by PRTR
  - Normalized global annual air & water releases (kg/$1T GDP)
  - Normalized annual air & water releases by PRTR (kg/$1T GDP)
- Summary PRTR comparison, 2008-2017
  - Comparison of total air & water releases for each PRTR in 2008 and 2017

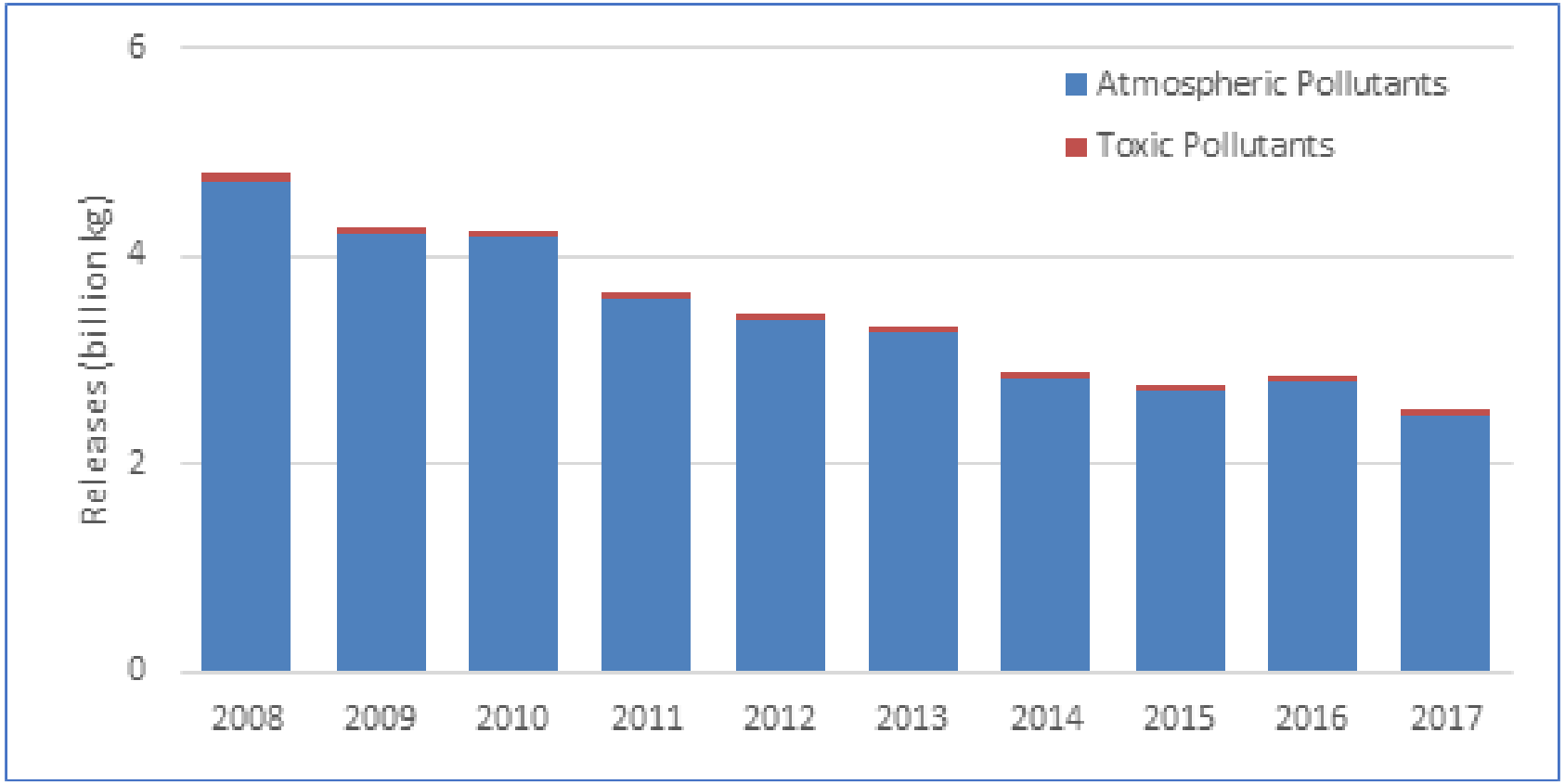
Summary Findings

Releases of toxic pollutants by PRTR, 2008–2017



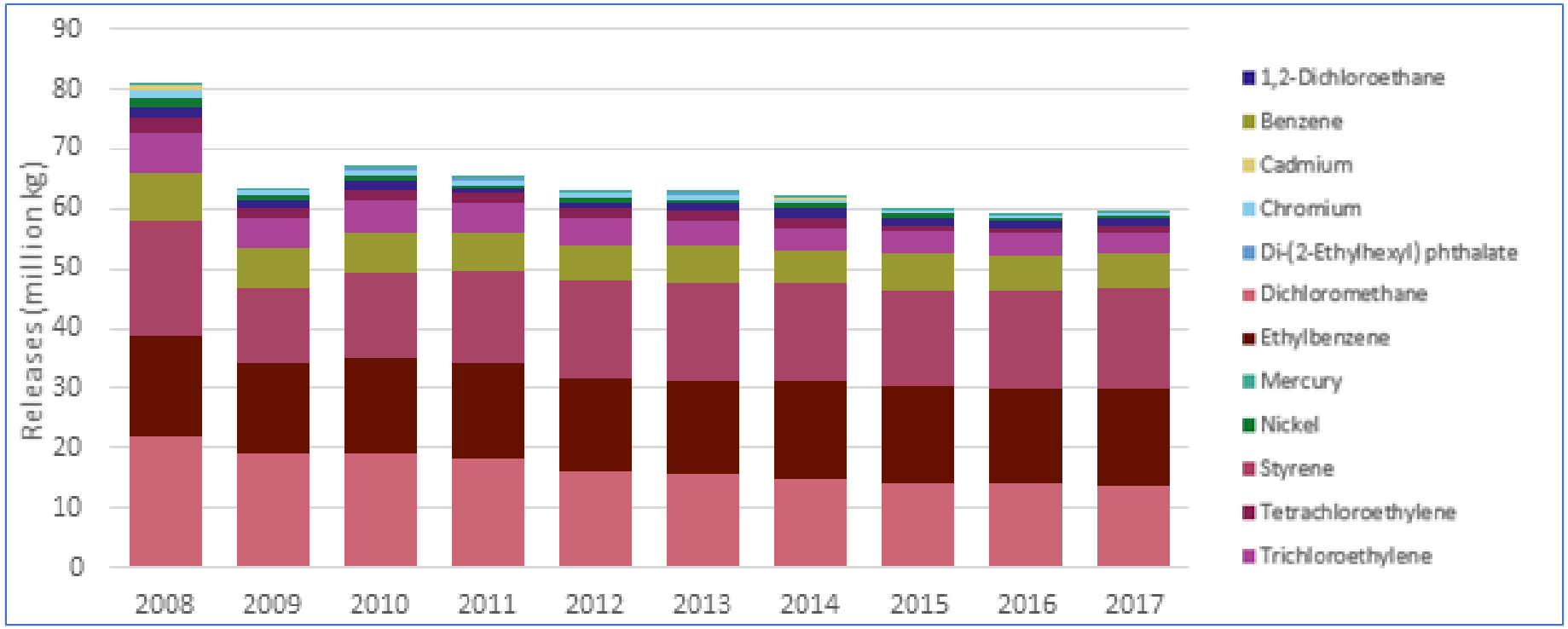
Summary Findings

Trend in releases of atmospheric pollutants and toxics



Summary Findings

Trend in releases of toxic pollutants



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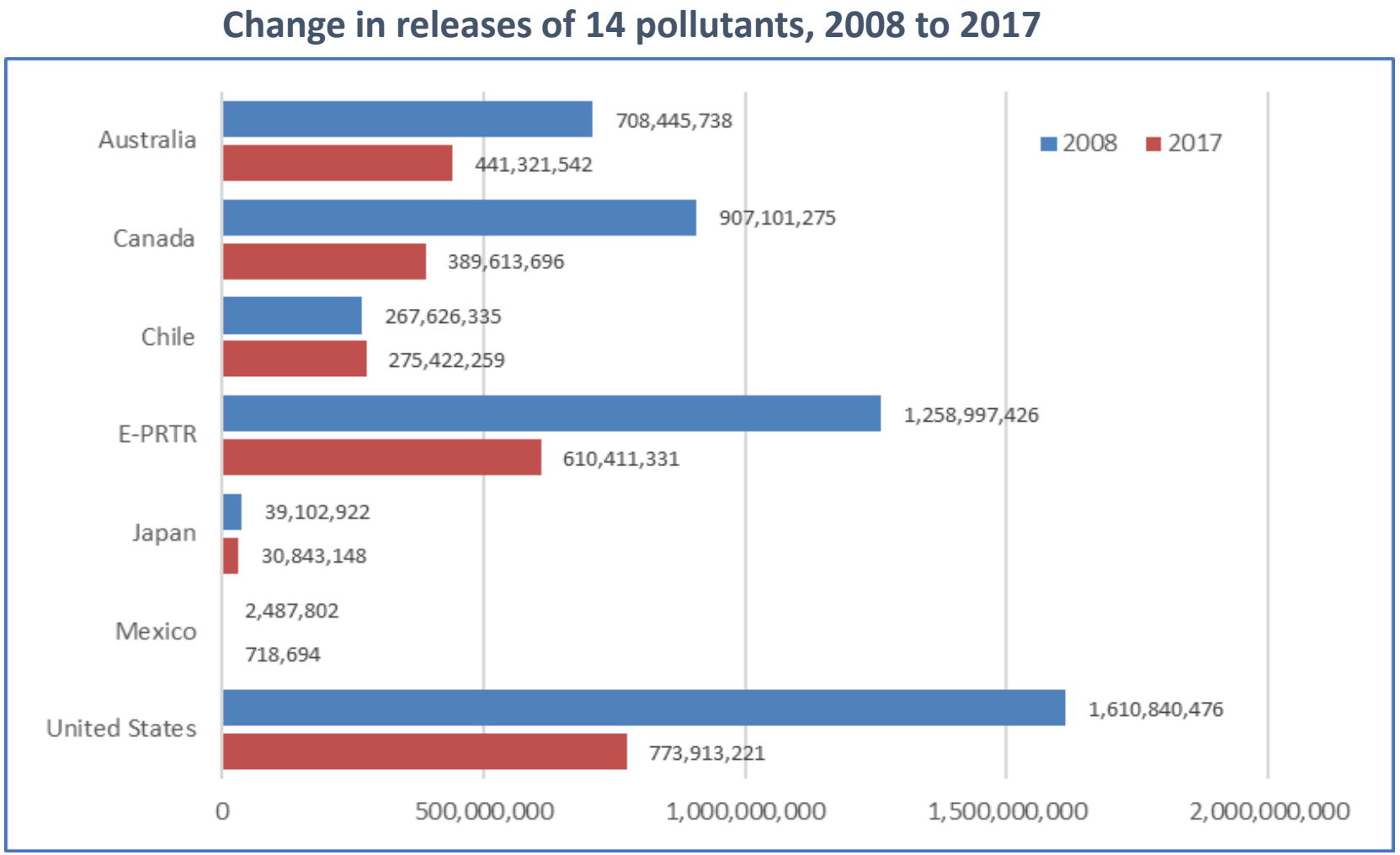
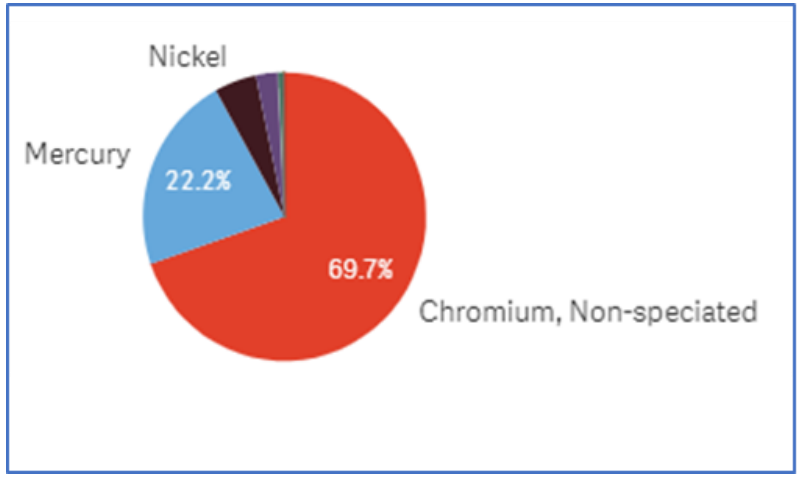
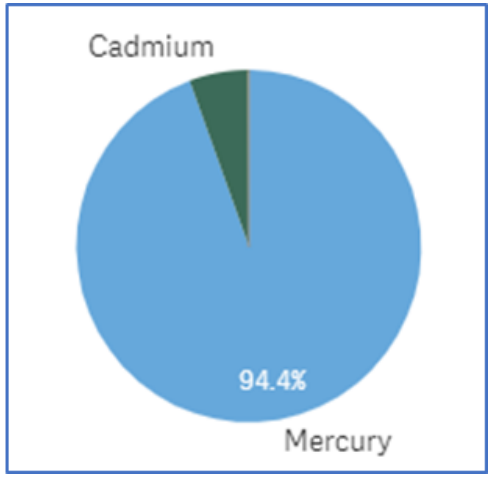


Toxicity Analyses

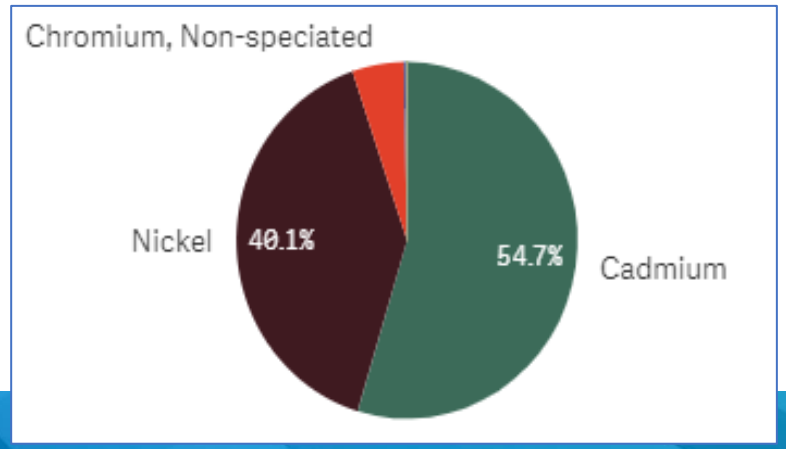
Cancer toxicity by pollutant



Non-cancer toxicity by pollutant

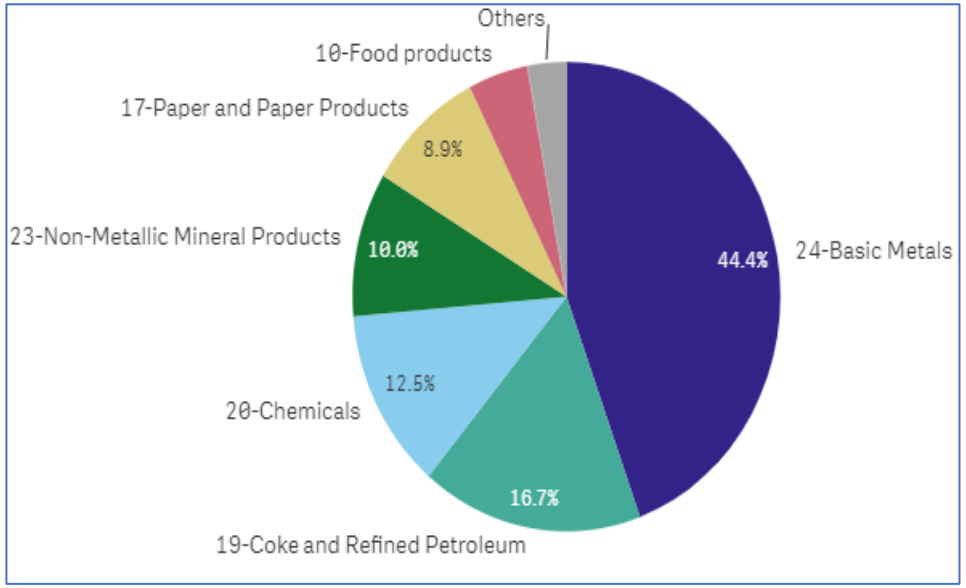


Ecotoxicity by pollutant

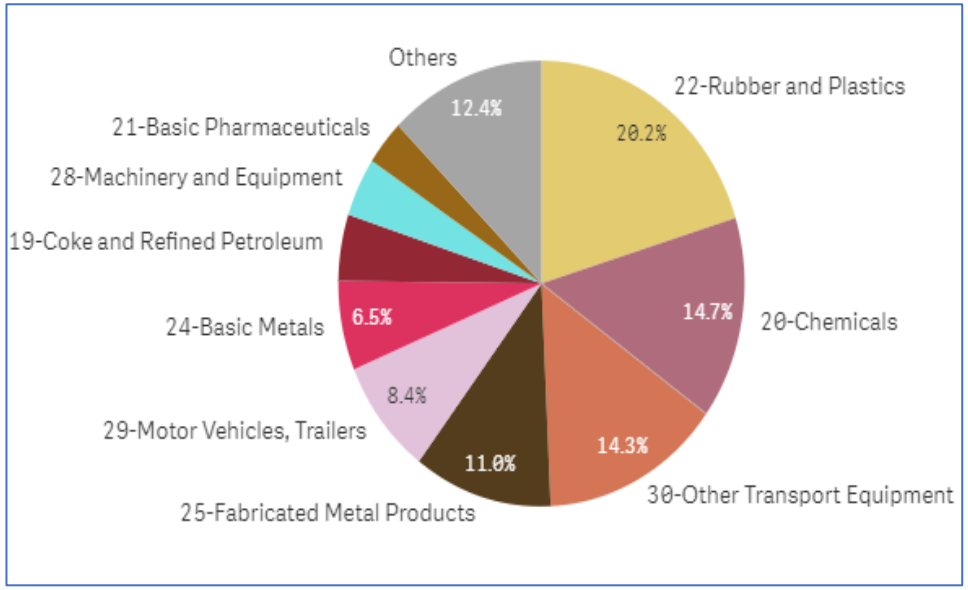


Sub-sector Analyses

Releases of atmospheric pollutant by subsector

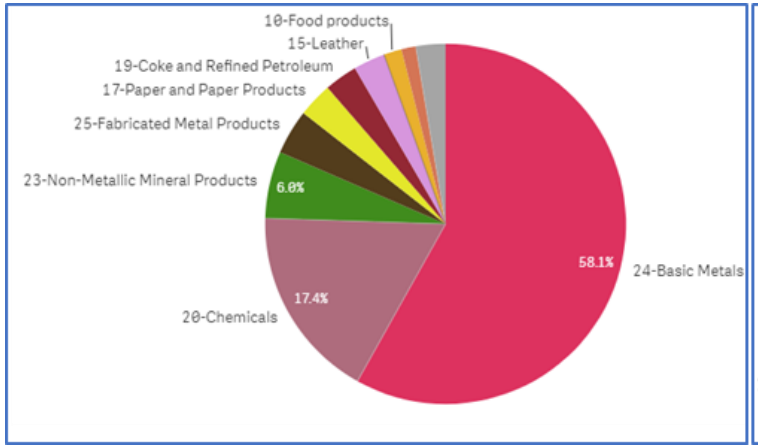


Releases of toxic pollutants by subsector



Sub-sector Toxicity Analyses

Cancer toxicity by subsector



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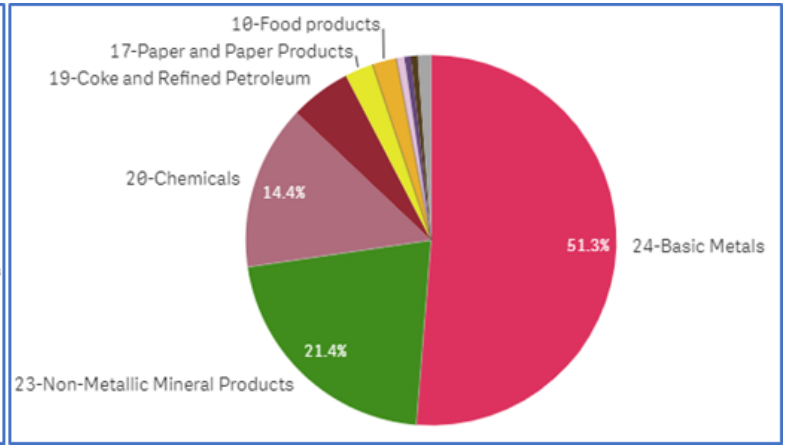

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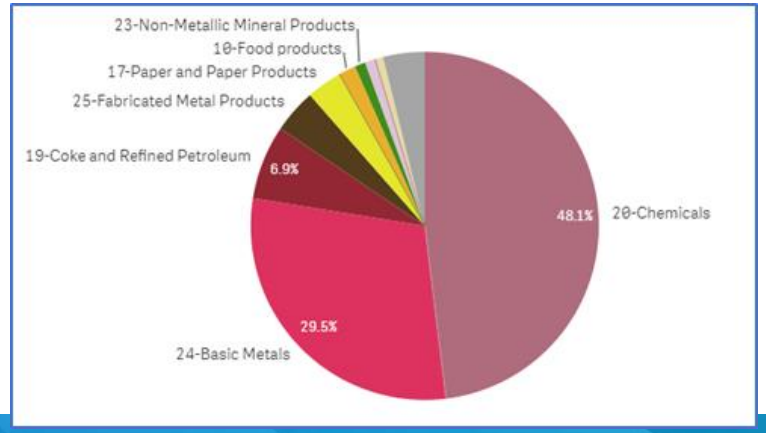
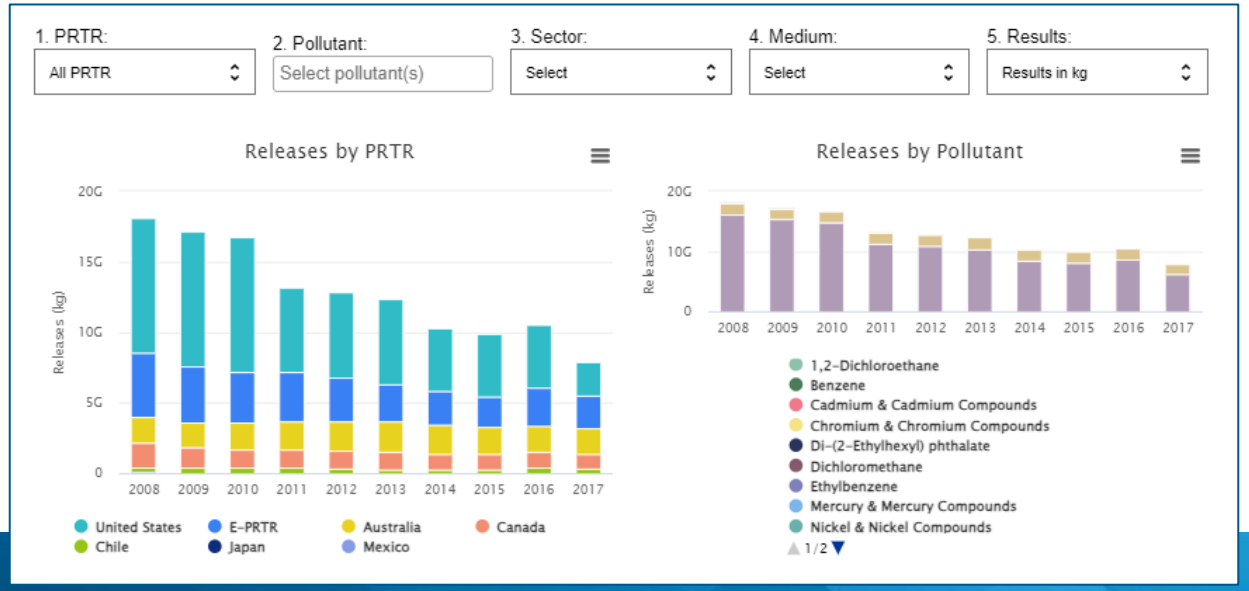


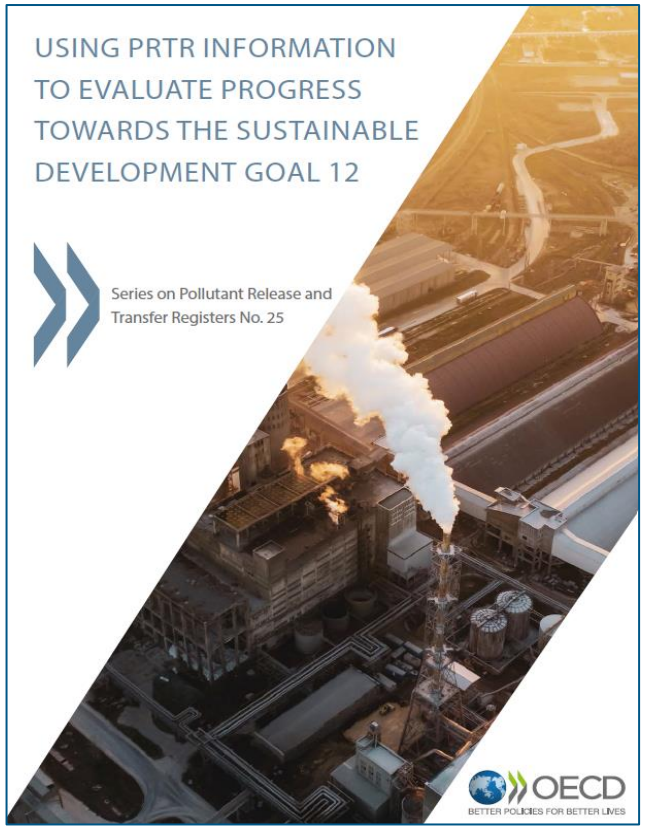
Challenges, Considerations, and Limitations

- Harmonization of chemicals and sectors
- Threshold differences
- Outliers
- Data quality issues
- Balance of feasible scope and ambitious project goals
- Putting the results of this project to work
  - How do we get the people that need to be informed of the results to study them, and if necessary, take action?
  - How do we get the results integrated into the UN's tracking of progress toward the SDGs?
  - Publishing/communicating results and interpretation may not be sufficient to create meaningful impact

Publication of OECD Report & Data Visualization Dashboard

- *Using PRTR Information to Evaluate Progress Towards the Sustainable Development Goal 12* analysis published by OECD in late 2021
- Accompanying data exploration and visualization tool published on the [OECD PRTR website]





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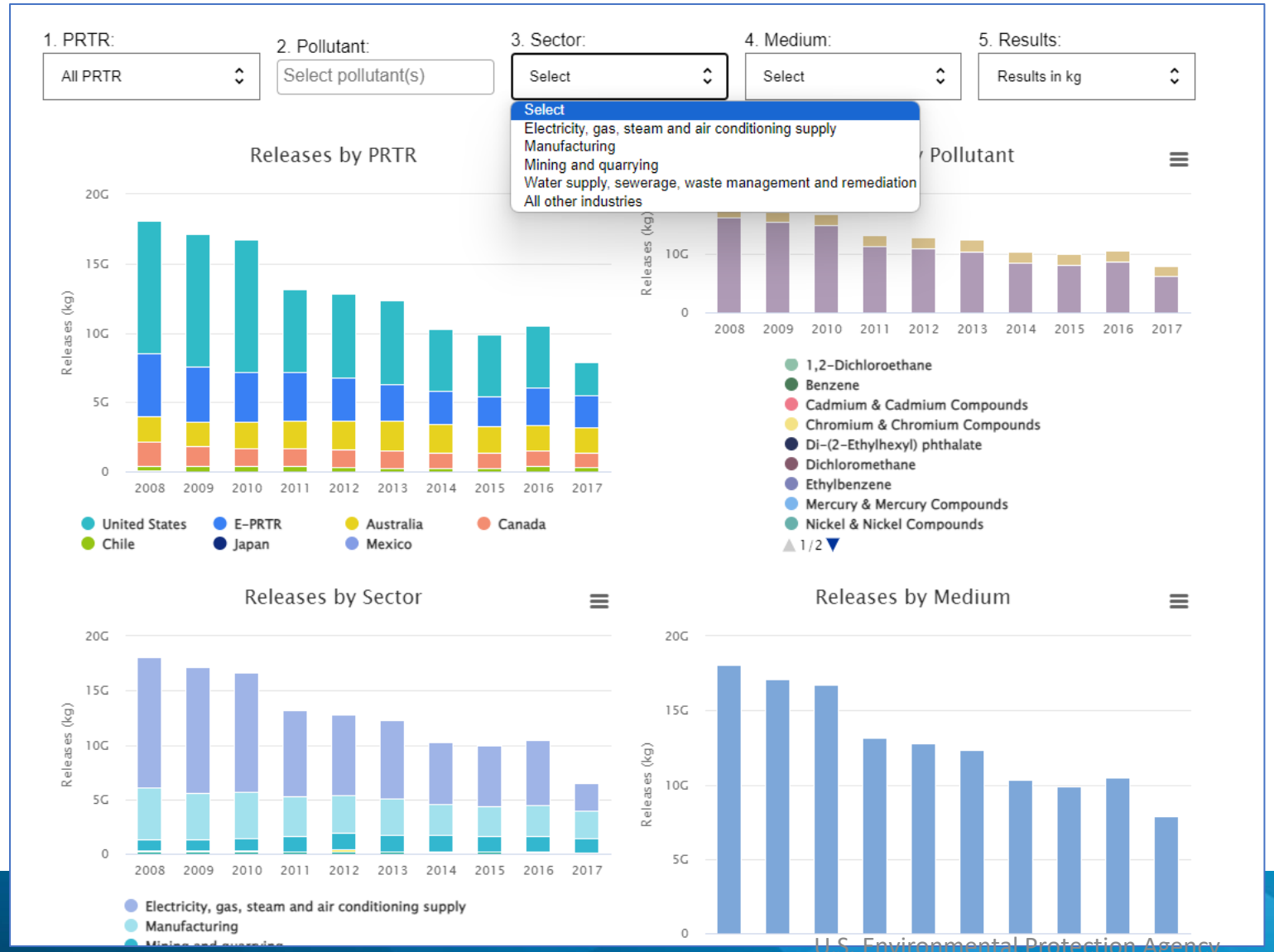
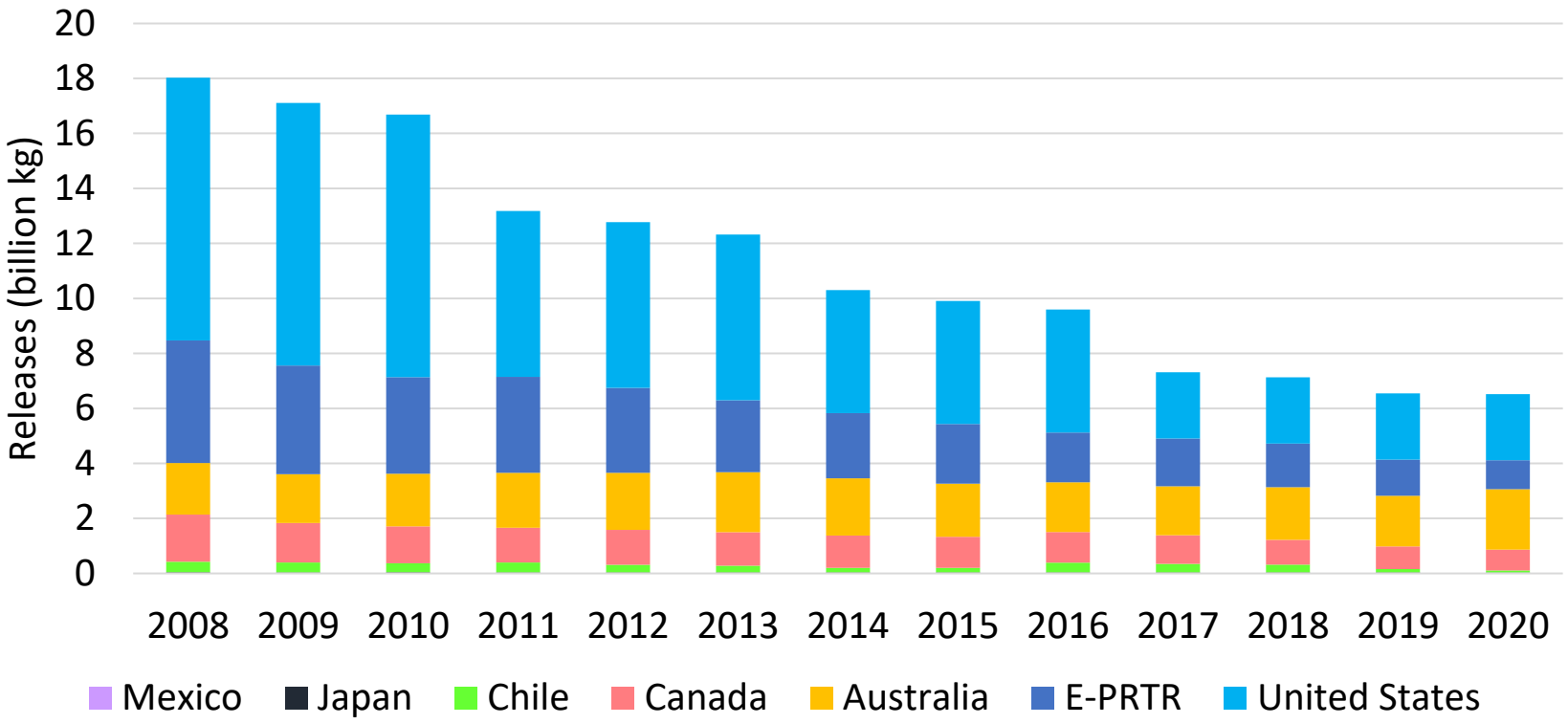


- The dashboard includes a broader dataset than the report and allows users to customize their results:
  - Both air and water releases included
  - Multiple sectors available
- Users can select individual PRTRs and/or specific pollutants

Latest Updates

- Data currently on the website are for 2008-2017
- To keep the data current, US led a data update to add 2018-2020 data
  - Draft data provided to PRTR representatives for review
  - Awaiting publication on OECD website
  - Further out: adding UK data for 2020 and subsequent years; maintaining data updates annually or biannually

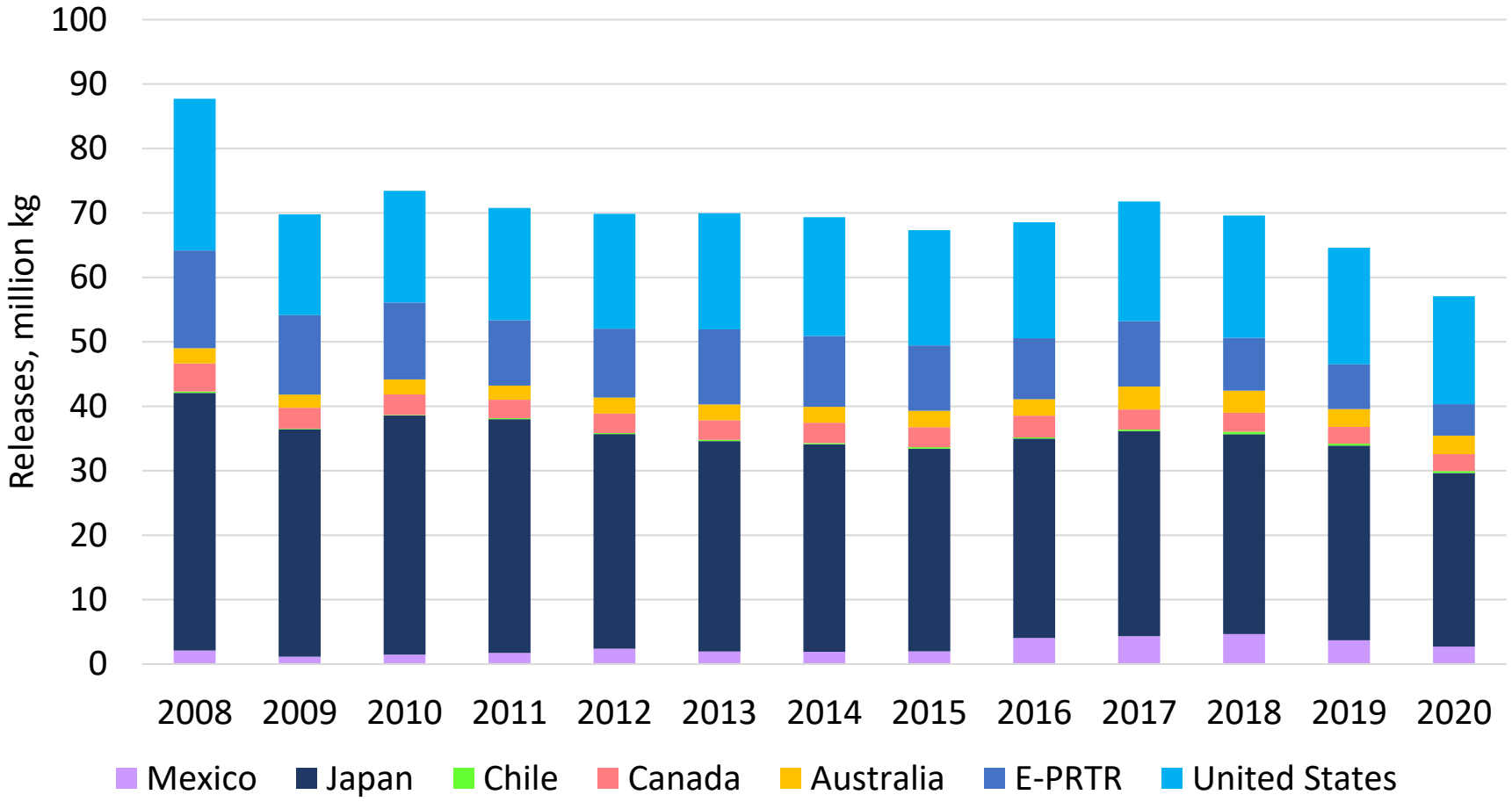
2020 Preview: Releases by PRTR – 14 pollutants



Pollutants:

- Benzene
- Tetrachloroethylene
- 1,2-dichloroethane
- Di-(2-ethylhexyl)phthalate
- Ethylbenzene
- Trichloroethylene
- Styrene
- Cadmium & cadmium compounds
- Nickel & nickel compounds
- Chromium & chromium compounds
- Mercury & mercury compounds
- Particulate matter
- Sulfur dioxide

2020 Preview: Releases by PRTR – toxics



Toxic Chemicals:

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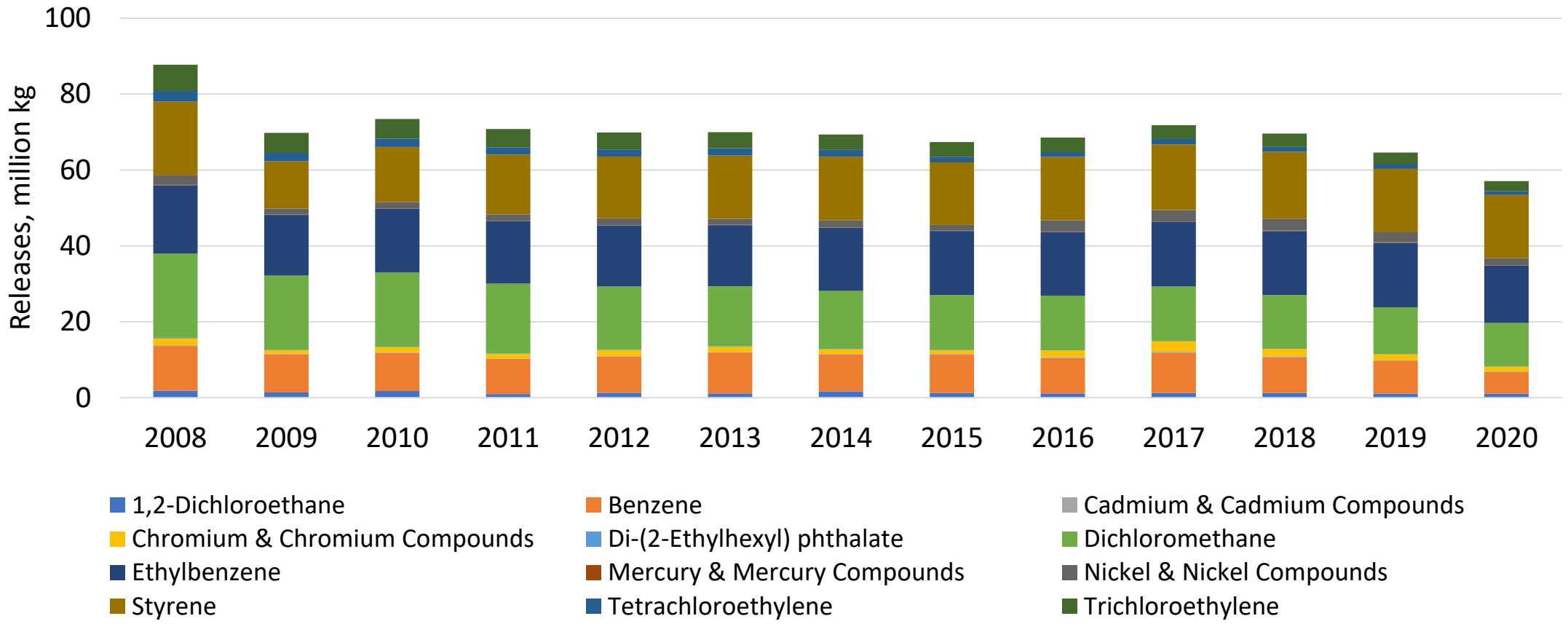
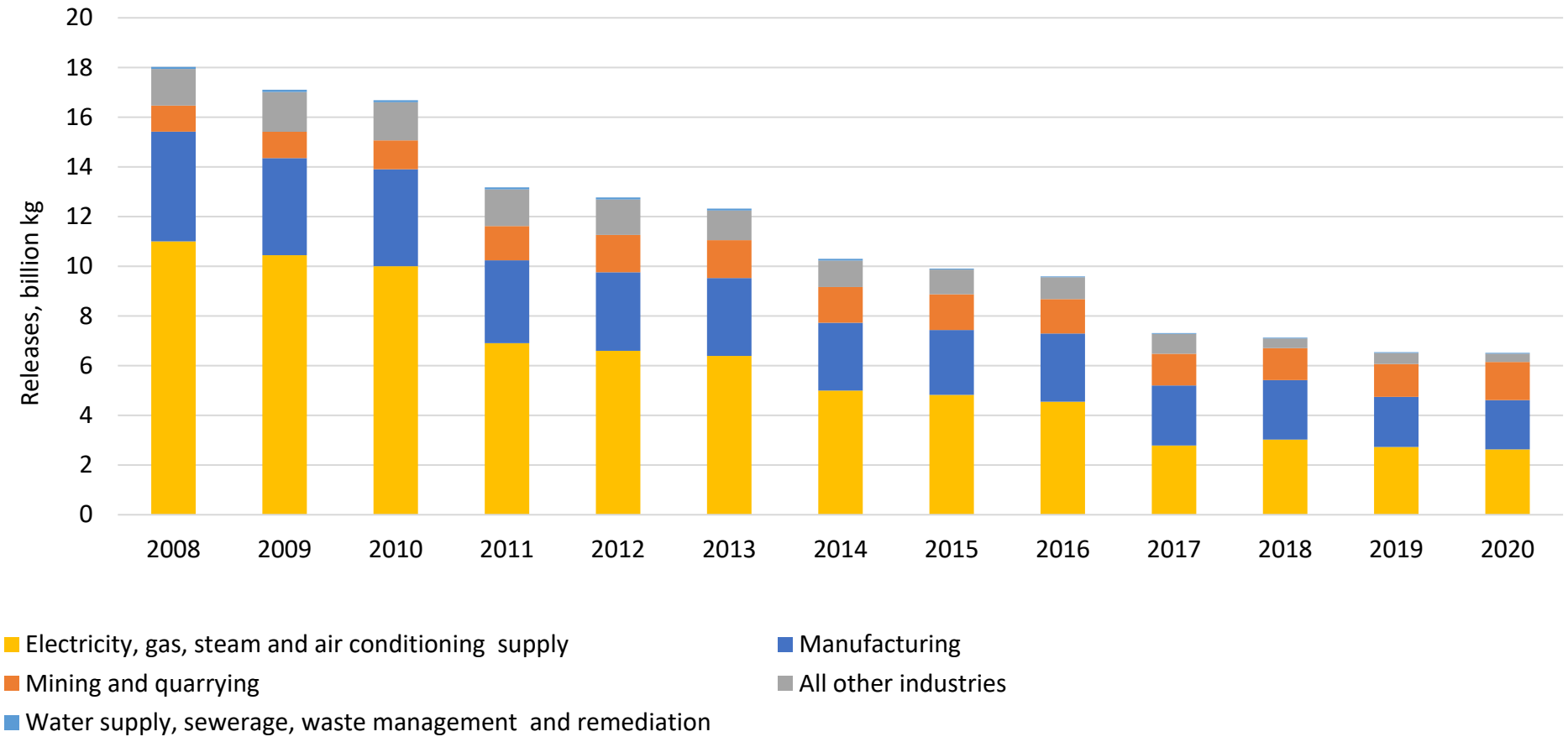
2020 Preview: Releases by Pollutant – toxics



2020 Preview: Releases by Sector – 14 pollutants



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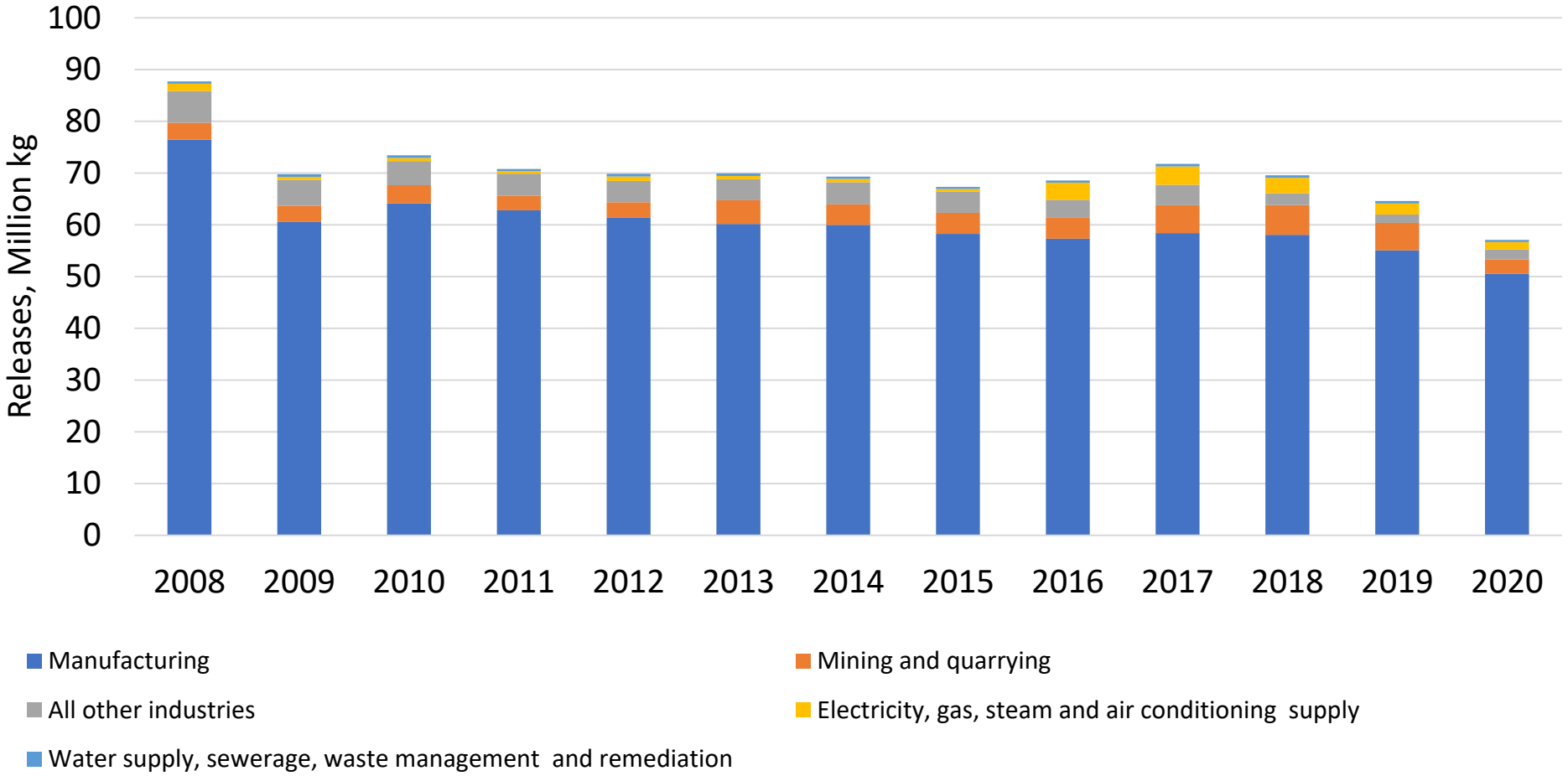
2020 Preview: Releases by Sector – toxics



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Questions & Discussion

Contact Info:

Caitlin Briere
Briere.Caitlin@epa.gov

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