



The Toxics Release Inventory (TRI)

Toxics Release Inventory Program
United States Environmental Protection Agency
Washington, DC
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Presentation Overview

- Introduction to the Toxics Release Inventory (TRI)
- Legal framework, TRI data publication, TRI data uses
- Lessons Learned

What is the Toxics Release Inventory?

- TRI tracks the waste management of chemicals included on TRI chemical list.
- TRI database includes information on:



Releases



Waste
Transfers



Recycling



Pollution
Prevention

**And
much
more!**

Why was the Toxics Release Inventory created?



Bhopal memorial for those killed and disabled by the 1984 toxic gas release

Bhopal, India December 1984

- Large quantity of methyl isocyanate gas accidentally released from a facility
- Thousands died the first night
- Thousands more have died due to long-term health effects
- Survivors continue to suffer with permanent disabilities

Institute, West Virginia August 1985

- Chemical release at a similar facility in the U.S.
- Over 100 people hospitalized

Increased concern in the U.S. about chemical accident preparedness and availability of information on chemical releases from industrial facilities

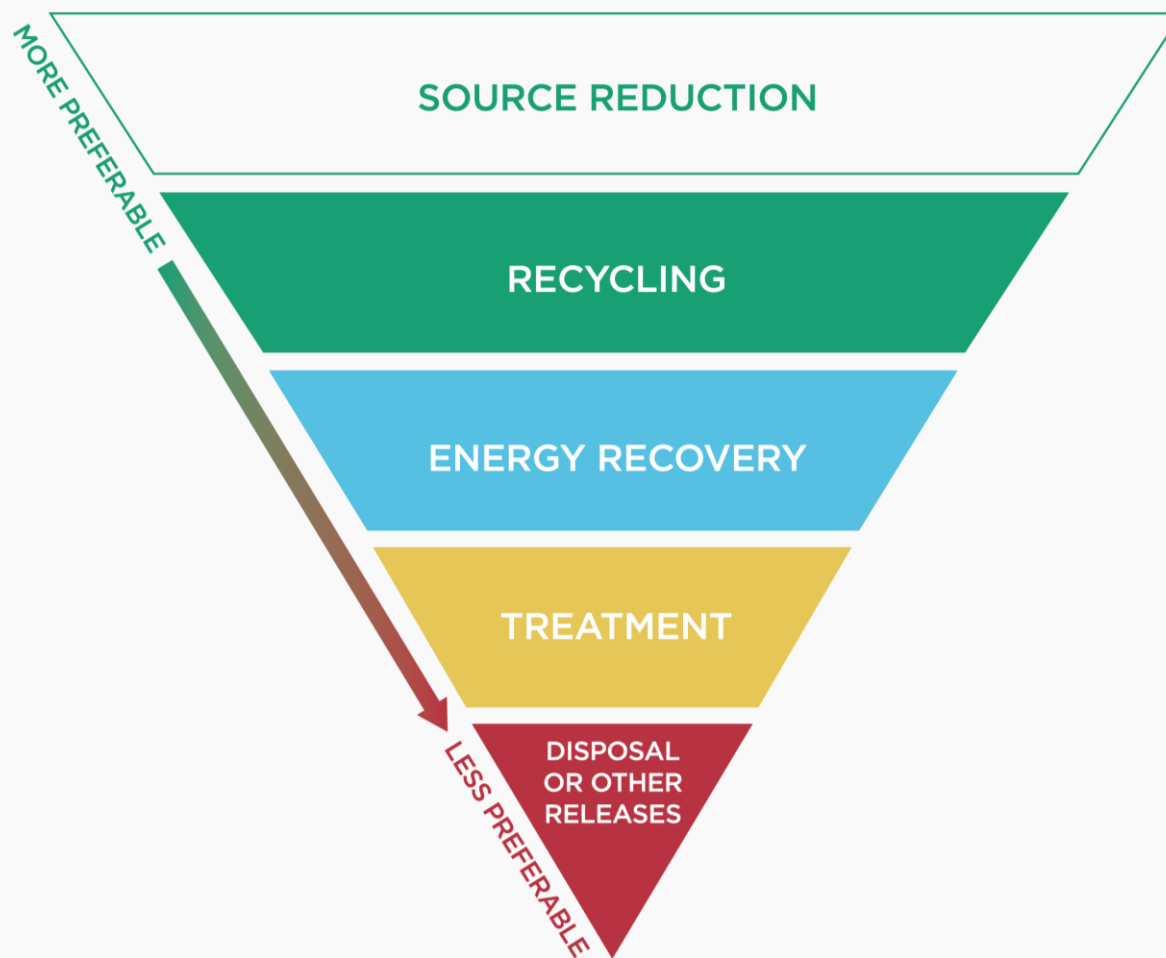


TRI Statutory Authority

- **Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) § 313**
 - Each year, facilities in certain industrial sectors must report the quantities of TRI chemicals they released to air, water, and land to the EPA and the states.
 - EPA must maintain the data and make it available to the public.
- **Pollution Prevention Act of 1990 (PPA) § 6607**
 - Facilities must also report progress in reducing waste generation and moving towards safer waste management alternatives:
 - Recycling;
 - Energy recovery;
 - Treatment



The Pollution Prevention Act also established a waste management hierarchy:





When are facilities required to report to TRI?

1. Facility must be in a TRI-covered industry sector or category, including:



Manufacturing



**Coal/Oil
Electricity
Generation**



**Certain
Mining
Facilities**



**Hazardous
Waste
Management**



**Federal
Facilities**

2. Facility must have the equivalent of at least 10 full-time employees
3. Facility must manufacture, process or use more than a certain amount of a TRI chemical per year



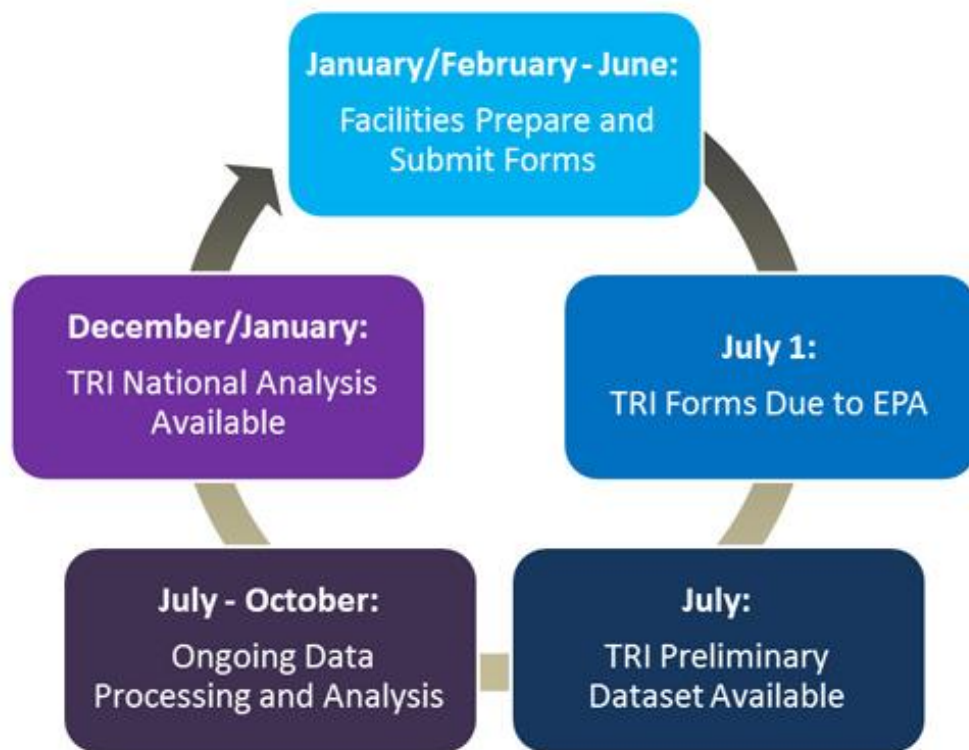
What information do facilities report to TRI?

- On-site releases of TRI chemicals to:
 - Air
 - Water
 - Land
- Transfers of chemical waste to off-site locations
- Other waste management:
 - Recycling
 - Treatment
 - Energy Recovery
- Pollution prevention activities
(www.epa.gov/tri/p2)





Annual TRI Cycle and Data Quality Process



- Facilities submit their TRI forms for each calendar year to EPA by July 1st of the following year
- The preliminary TRI dataset is released in July
- EPA conducts data quality checks and compliance assistance activities from July - October
- The TRI National Analysis (EPA's official annual TRI report) is published in January



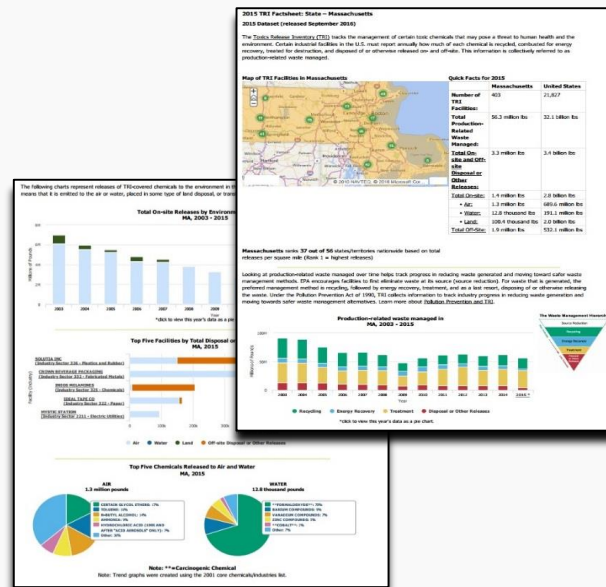
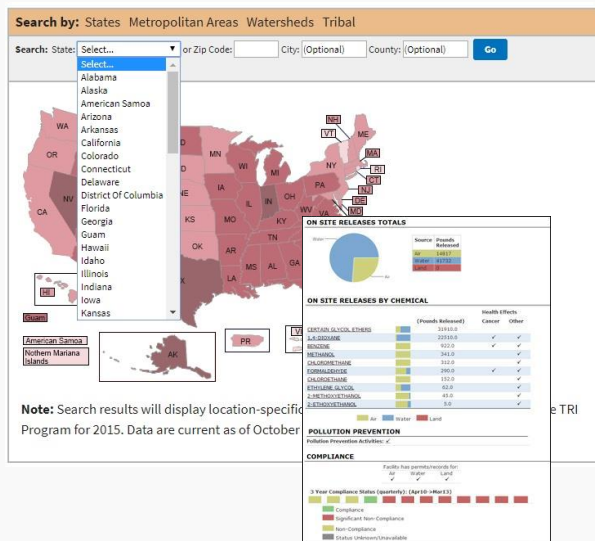
EPA Makes TRI Information Available

- The data are relevant, readily accessible, and useable:

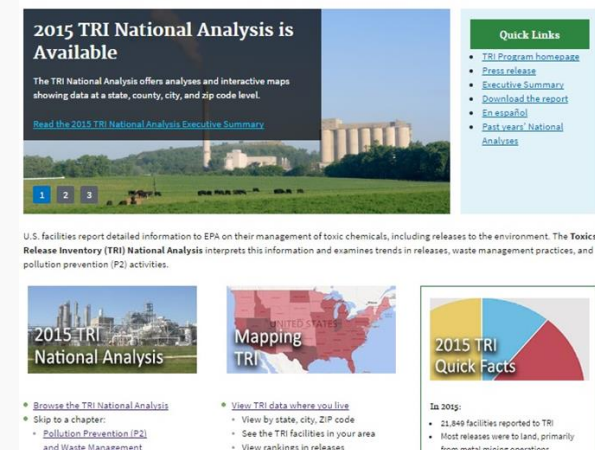
Data Access Tools

Multi-topic Factsheets

National Analysis Report



Toxics Release Inventory (TRI) National Analysis





National Analysis Website

www.epa.gov/trinationalanalysis

2016 TRI National Analysis is Available

The TRI National Analysis offers analyses and interactive maps showing data at a state, county, city, and zip code level.

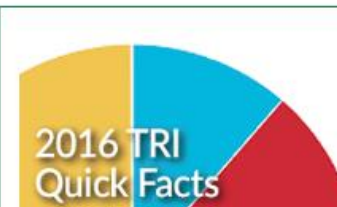
[Read the 2016 TRI National Analysis Executive Summary](#)



Quick Links

- [TRI Program homepage](#)
- [Executive Summary](#)
- [Download the report](#)
- [Official EPA press release](#)
- [Overview presentation](#)
- [Questions & answers](#)
- [En español](#)
- [Past years' National Analyses](#)

U.S. facilities report detailed information to EPA on their management of toxic chemicals, including releases to the environment. The **Toxics Release Inventory (TRI) National Analysis** interprets this information and examines trends in releases, waste management practices, and pollution prevention (P2) activities.



- [Browse the TRI National Analysis](#)
- Skip to a chapter:
 - [Pollution Prevention \(P2\) and Waste Management](#)

- [View TRI data where you live](#)
 - View by state, city, ZIP code
 - See the TRI facilities in your area
 - View rankings in releases

- 21,629 facilities reported to TRI for 2016
- Most releases were to land, primarily from metal mining operations
- Since 2006, releases decreased by 21%



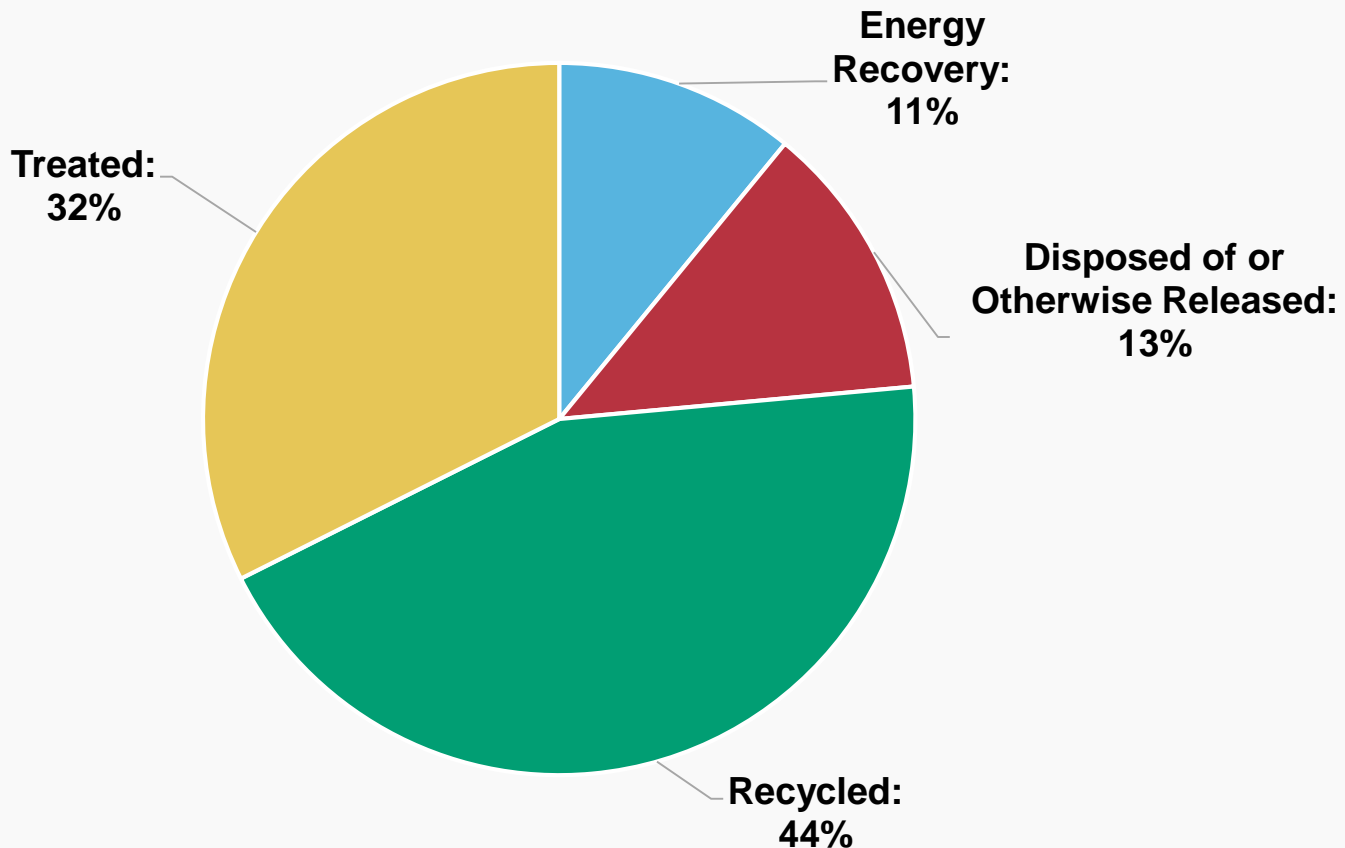
TRI Data Uses

- Who uses the data?
 - Individuals, communities, and environmental groups
 - Industry
 - Government agencies
 - Academic community and investment community
 - Investment firms/insurance companies
 - International community
- For what purposes?
 - Make informed decisions
 - Prioritization
 - Encourage pollution prevention



Total Production-Related Waste 2016

27.80 billion pounds

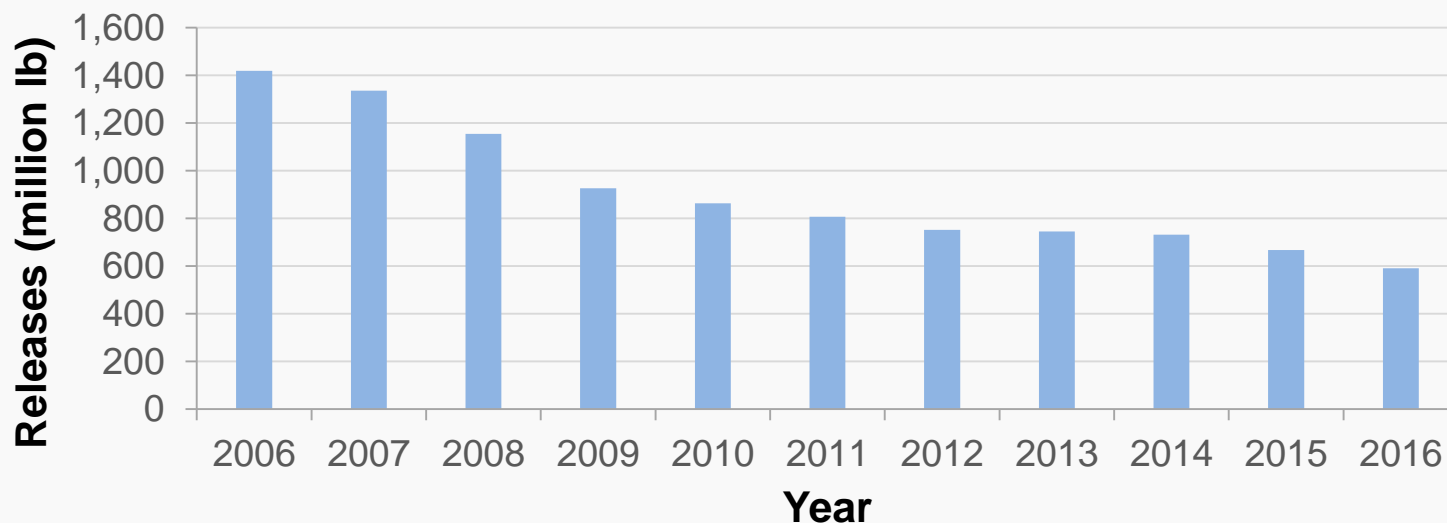




Trends – Air Releases

- 2015-2016: Air releases decreased by 11% (77 million lb)
 - Electric utilities air releases decreased by 35% (47 million lb)
 - Primary metals air releases decreased by 25% (8.6 million lb)
- 2006-2016: Air releases decreased by 58% (829 million lb)

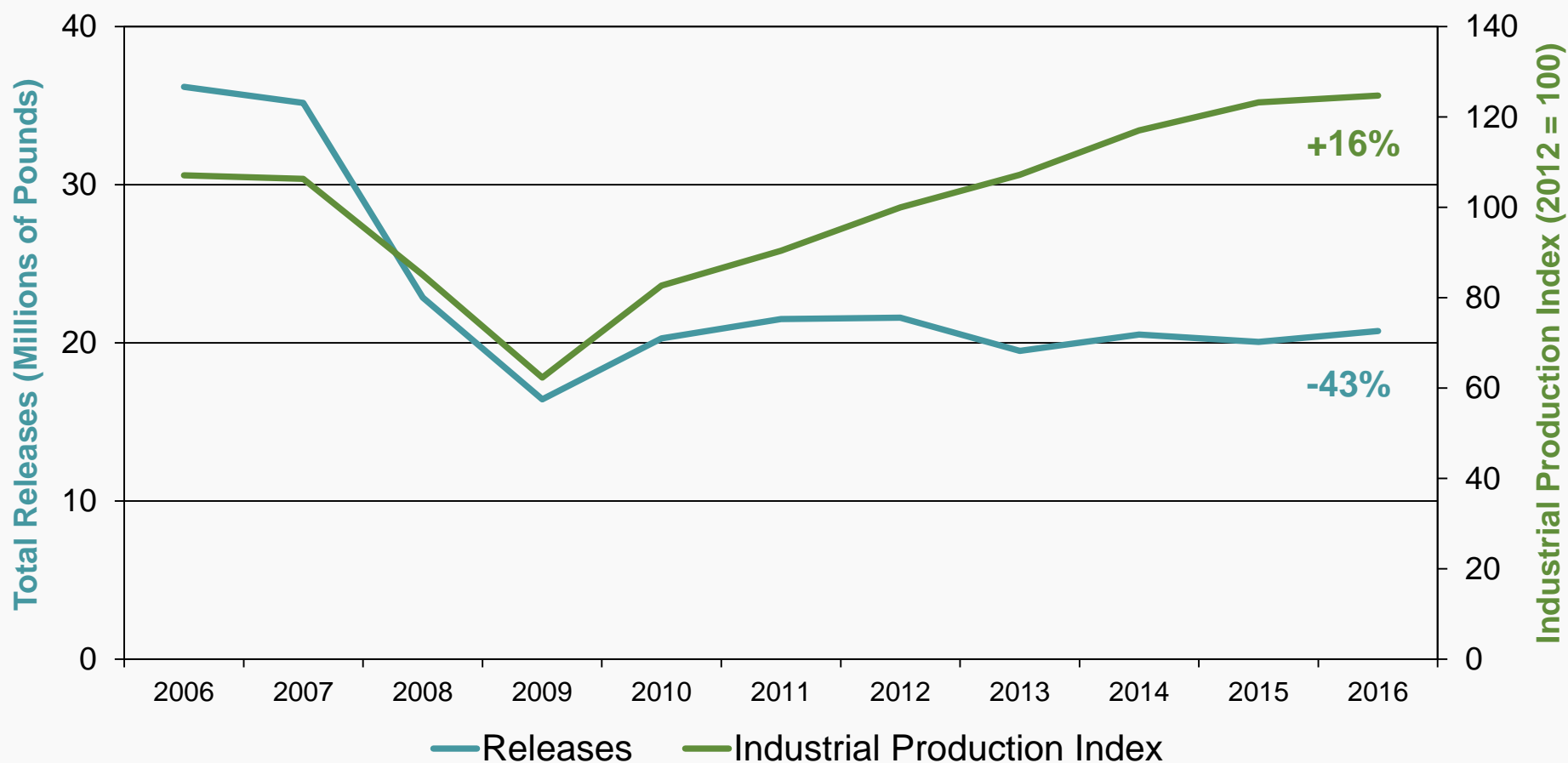
On-Site Air Releases: 2006-2016





Example Use of TRI Data

Automotive Manufacturing Sector: Increased production without increases in releases

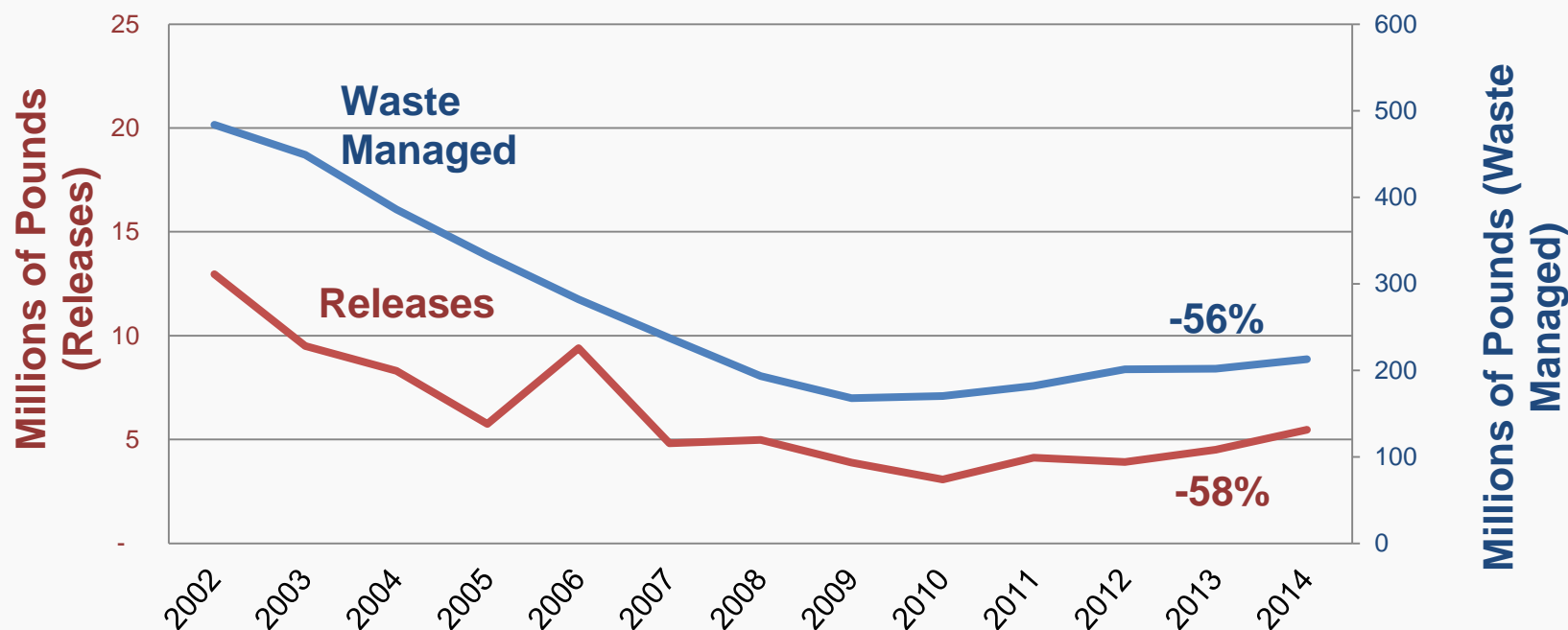


Releases includes onsite and offsite disposal or other releases.



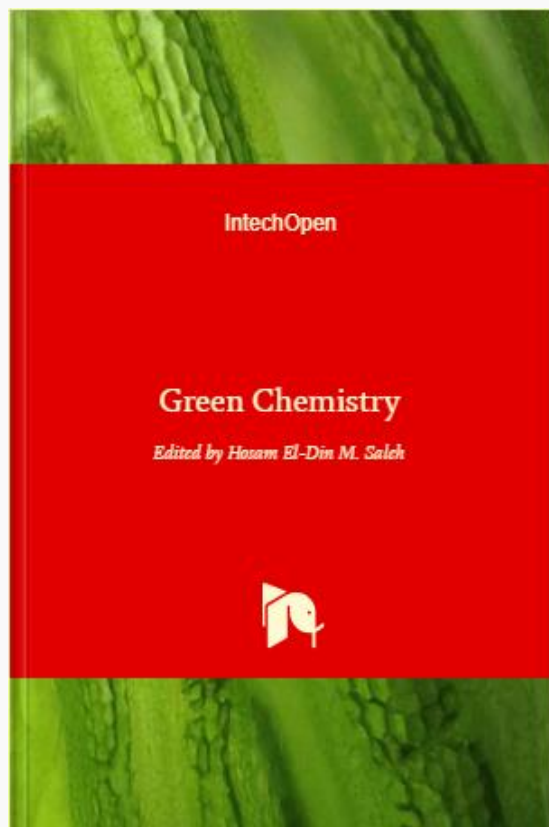
Example Use of TRI Data: Assess impact of green chemistry implementation

TRI Reporting by Pharmaceutical Facilities

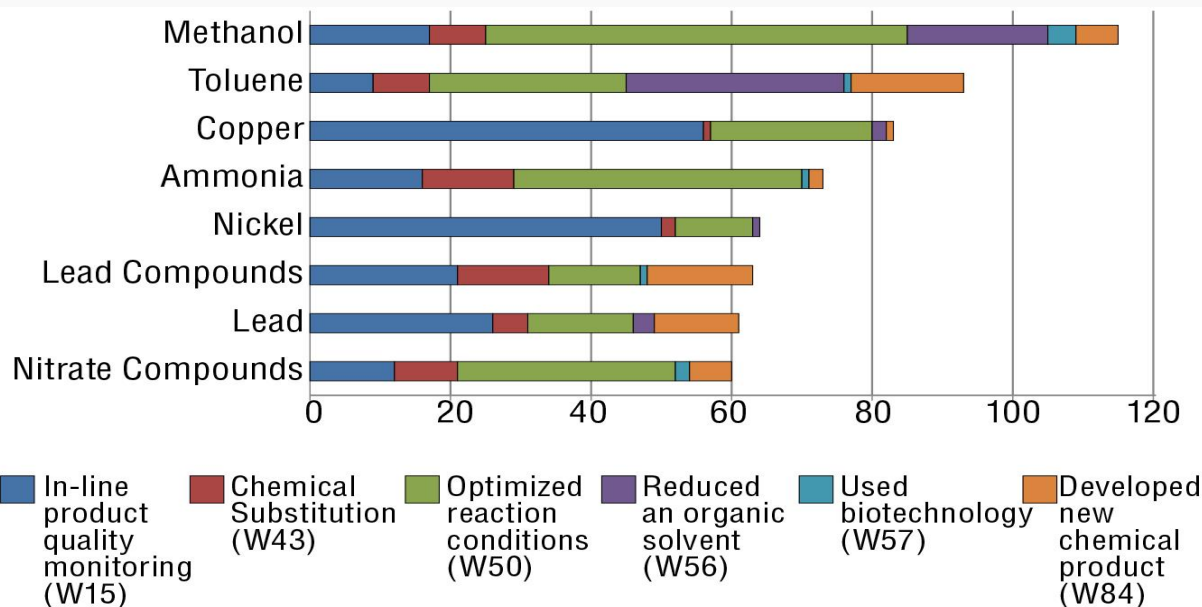


- Similar trend in waste managed indicates real reductions

Recommended Reading



Chapter 8: The Utility of the Toxics Release Inventory (TRI) in Tracking Implementation and Environmental Impact of Industrial Green Chemistry Practices in the United States





Toxic Release Inventory

The US Experience – What have we learned

Establishing the basics:

- Allow flexibility to add/change/delete chemicals, sectors and thresholds for reporting
- Scope of chemical coverage: only toxic chemicals?
 - Greenhouse gases, particulate matter, phosphates etc....are not reportable to TRI
- Scope of industry coverage?
- Comparability of collected data with other PRTR data?



Toxic Release Inventory

The US Experience – What have we learned

Reporting

- Electronic (internet) reporting is a must!
 - cheaper, quicker, more efficient, and minimizes errors.
- Consider a single portal for all environmental reporting
 - Design your data collection system such that different types of data required to be submitted by industry to your agency can be submitted using the same means;
 - Same online tool;
 - Same or similar reporting deadline



Toxic Release Inventory

The US Experience – What have we learned

Location, Location, Location

- Facility Identification System (TRI ID Number) based on location was key to maintain data all these years.
 - Facilities change names, ownership changes, parent company changes
- Location data needs to be of good quality
 - Develop a system that provides location data
 - Is location data at the center or at the entrance of facility?



Toxic Release Inventory

The US Experience – What have we learned

Human Capital: your network of people

- To establish a PRTR you will need people that have diverse skill sets and expertise
- All have a role and they are all important to make it successful!
 - Identify them and make them part of it early on



Toxic Release Inventory

The US Experience – What have we learned

Creating your network:

- Scientists (chemists, chemical engineers, toxicologists);
- Outreach/communication specialists
- Lawyers
- Public policy
- Analysts
- Administration
- Information Technology
- Industry
- Public
- Press
- State and local governments



Toxic Release Inventory

The US Experience – What have we learned

Define the purpose of your PRTR

- Should encompass community right-to-know
- Define how you are going to publish and disseminate your PRTR data
 - How should users access it?
 - How should users analyze it?
 - How should users interpret it?
- Quality of data will be an issue with the public and industry
 - Establishing good guidance on how to calculate reportable quantities is essential.



Toxic Release Inventory

The US Experience – What have we learned

Think globally!

- Sustainable development has shifted from being a national or continental issue, to a global priority.
- Data collected by different PRTRs is being used to track progress towards sustainable development on a global scale:

Framework on the Role of Pollutant Release and Transfer Registers (PRTRs) in Global Sustainability Analyses (2017)

[http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mon/o\(2017\)7&doclanguage=en](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=env/jm/mon/o(2017)7&doclanguage=en)

- Design your PRTR to be comparable with other PRTRs



Toxic Release Inventory

The US Experience – What have we learned

Think globally!

- The OECD PRTR Working Group has developed guidance for emerging PRTRs to follow that will make the data they collect comparable with that of established PRTR systems:

2014	Guidance document on element of a PRTR: Part 1	ENV/JM/MONO(2014)33
2015	Guidance document on element of a PRTR: Part 2	ENV/JM/MONO(2015)45
2014	Proposal For a Harmonised List of Pollutants	ENV/JM/MONO(2014)32
2013	Proposal for a Harmonised List or Reporting Sectors	ENV/JM/MONO(2013)5



For more Information, go to

<https://www.epa.gov/toxics-release-inventory-tri-program>