Air Emissions Accounting—U.S. Experience

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Carbon content measurement for products, organisations and aggregates

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Summary of U.S. Progress

- 2021: Began work on proof-of-concept air emissions account
  - Department of Commerce initiative
  - Folded into *National Strategy to Develop Statistics for Environmental-Economic Decisions* (SEED)

Summary of U.S. Progress

- 2021: Began work

- 2022: Preliminary estimates presented for feedback
  - Environmental experts from Environmental Protection Agency (EPA)
  - Economic accounting experts from BEA
  - International community (IARIW, Society for Economic Measurement)

Summary of U.S. Progress

- 2021: Began work

- 2022: Preliminary estimates

- **2023: BEA working paper published**

  o *Proof of Concept for a U.S. Air Emissions Physical Flows Account*

  o Data Appendix contains supply-use tables (SUTs) for greenhouse gas emissions at BEA Summary level (70+ industries) for 2012–2017

Summary of U.S. Progress

- 2021: Began work
- 2022: Preliminary estimates
- 2023: BEA working paper
- **2024: Address data gaps, add PM 2.5?**

Features of U.S. Experience

- Strong **data foundations**

- Early **collaboration** with environmental experts from EPA

- Data gaps
  - Transportation
  - Non-GHG pollutants

Strong Data Foundations

- **Greenhouse Gas Inventory** (EPA)

- **Manufacturing Energy Consumption Survey** (EIA)

- **Supply and Use Tables** (BEA)

- **Transportation Satellite Account** and other datasets (BTS)

Collaboration with Environmental Experts

- **U.S. Environmentally Extended Input-Output team** (EPA)

- **Greenhouse Gas Inventory team** (EPA)

- Data experts

- Physical process experts

- **Territory basis → residency basis**
- Households
- Rail
- Trucking
- Air
- Marine
- Passenger cars

- **Territory basis → residency basis**
- **Households**—believed to be very small

- **Territory basis → residency basis**
- Households
- **Rail**—operated by resident affiliates of MNEs

- **Territory basis → residency basis**
- Households
- Rail
- **Trucking**—data sharing from states would improve accuracy

- **Territory basis → residency basis**

- Households

- Rail

- Trucking—data sharing

- **Air**—BTS collects residency-basis fuel consumption data

- **Territory basis → residency basis**
- Households
- Rail
- Trucking—data sharing
- Air
- **Marine**—data collection on fuel consumption by grade

- **Territory basis → residency basis**

- Households

- Rail

- Trucking—data sharing

- Air

- Marine—data collection

- **Passenger cars**—data collection/reporting on vehicle miles traveled by business fleets

- **Territory basis → residency basis**

- Households

- Rail

- Trucking—data sharing

- Air

- Marine—data collection

- Passenger cars—data collection/reporting

- **National Emissions Inventory** (EPA)
  - Triennial
  - Not revised/updated—need greater focus on statistical consistency

- Physical supply-use tables for air emissions

- 70+ industries

- BEA Summary industries

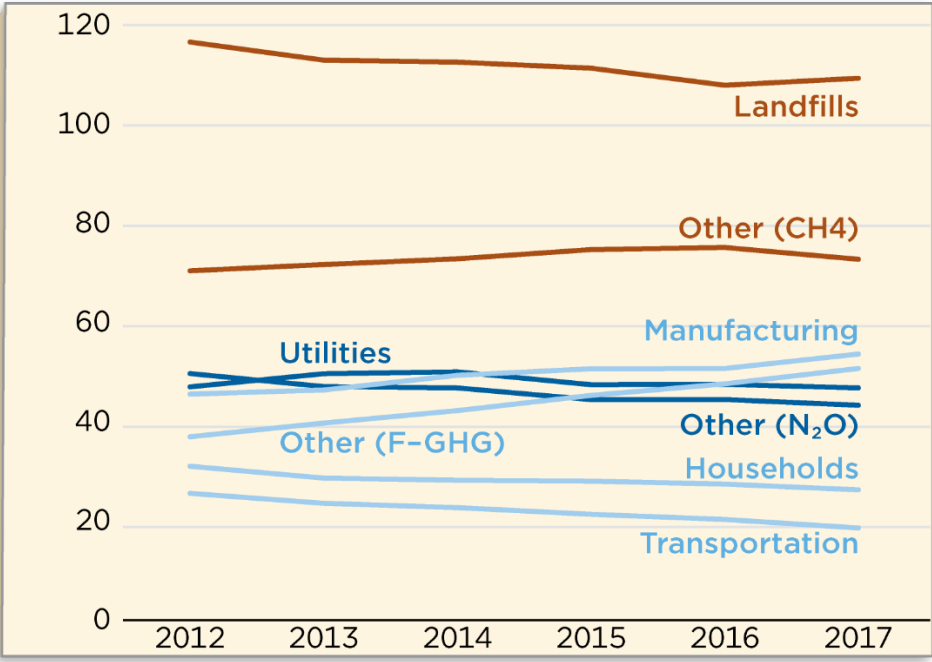- Residency-basis emissions data

Output—Summary

- Physical supply-use tables for air emissions

- 70+ industries

- BEA Summary industries

- Residency-basis emissions data

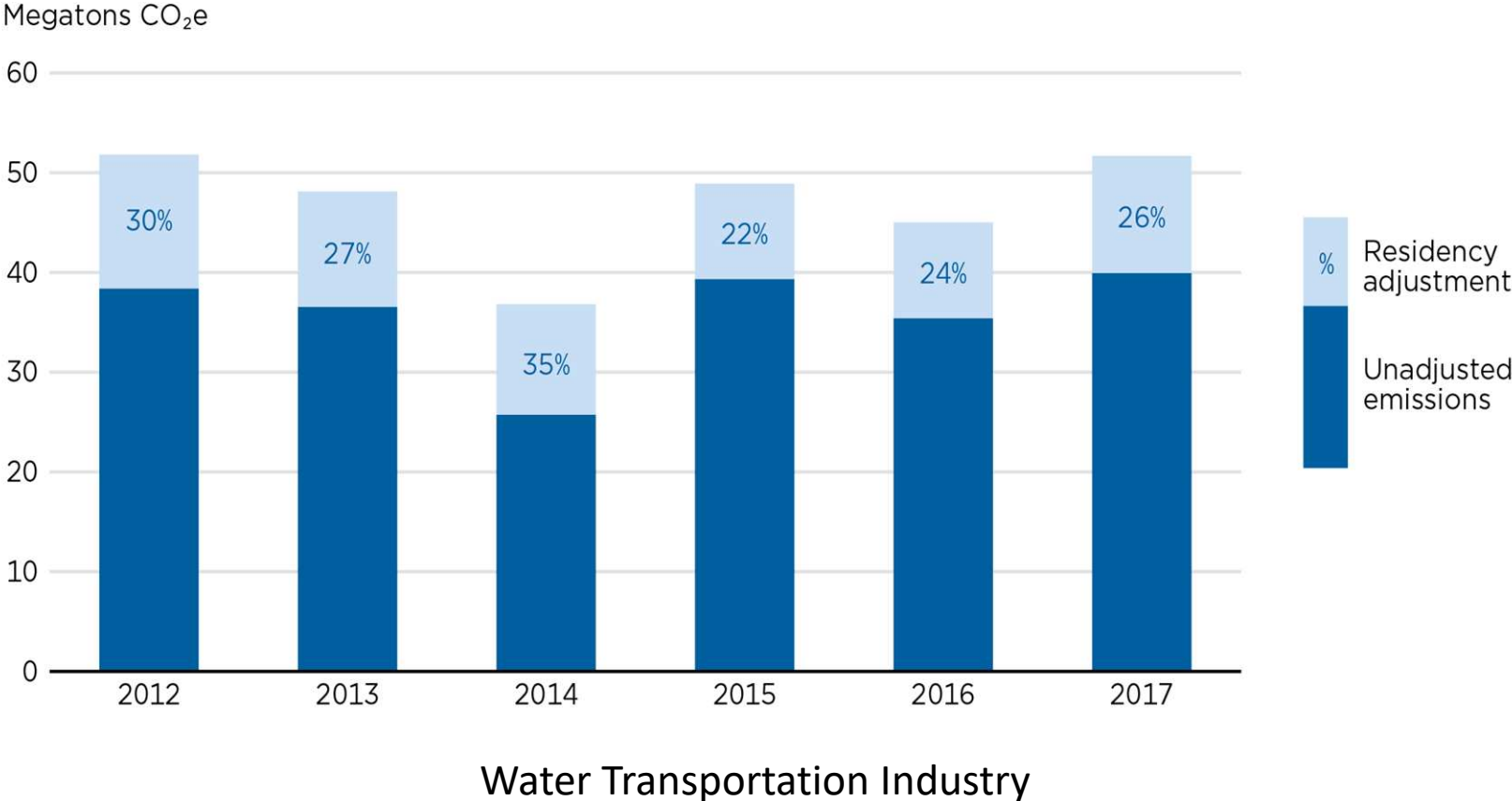- **Emissions data consistent/comparable with economic accounts**
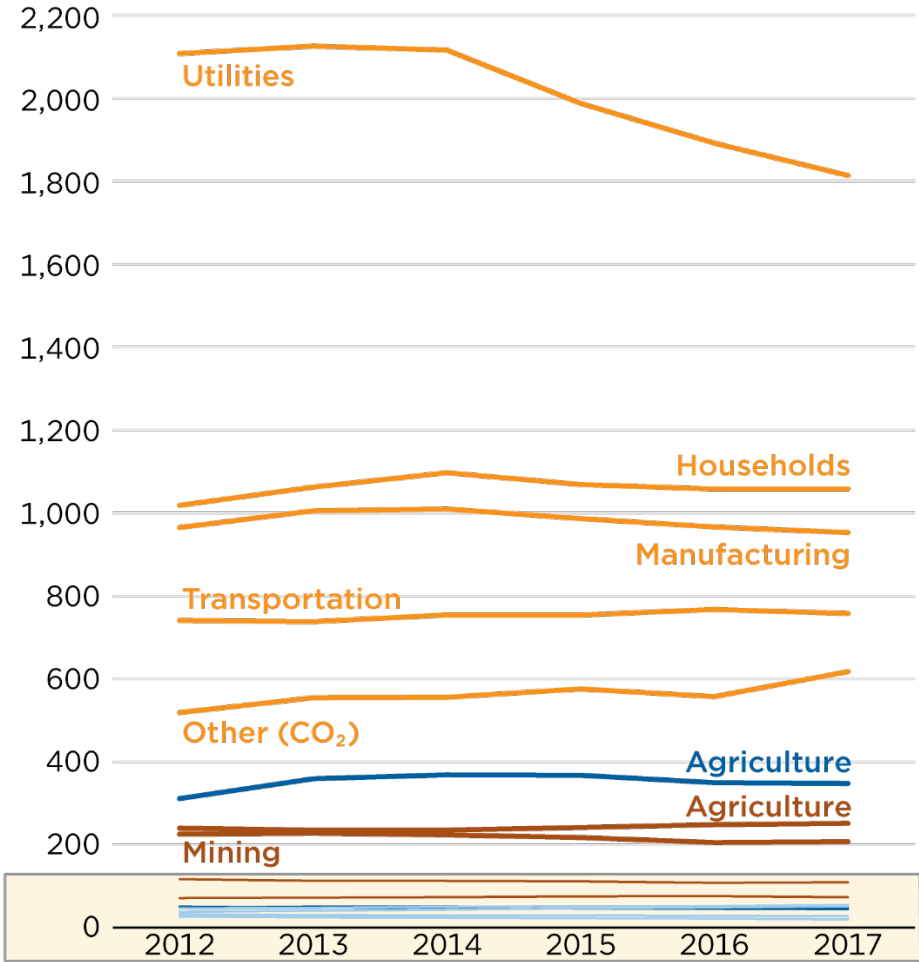
Units are megatons CO₂e
- Carbon dioxide (CO₂)
- Methane (CH4)
- Nitrous oxide (N₂O)
- Fluorinated greenhouse gases (F–GHG)

Output—Residency Adjustment Example

Megatons CO_2e

Water Transportation Industry

Summary

- What can we provide?
  - Direct emissions by industry, **consistent/comparable with economic data**, usable for:
    - Policy-makers
    - Life-cycle/carbon footprint analysis
- What do we need?
  - **Data sharing** agreements
  - **Data collection/reporting**: fuel consumption, vehicle miles traveled
  - Focus on **statistical consistency**
- Who can help?
  - Standard setters, legislators, regulators (top-down)
  - Firms, accountants (bottom-up)