Federal LCA Commons

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*National Institute for Standards and Technology:*
*Data Harmonization to Improve the Circularity of Plastics*

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Overview

• Theory of Change and Innovation Diffusion

• What is the Federal LCA Commons?

• Federal LCA Commons Data Repository
  – Data management and access infrastructure
  – LCA methods consistency
  – Consistent reference models and data
Theory of Change and Innovation Diffusion

Context of Environmental Information

Emerging Requirements, Qualitative Analysis, Enhancing Data & Identifying Hotspots → Improved Standardization, Measurement, & Reporting → Reliable Market and Product Information → Strong Market Demand Signals → Major Industrial Changes → Major Impact Reductions

Market Uptake

Adoption
The Nutrition Label Analogy

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The Nutrition Label Analogy: Why does this work?

Inter-agency collaboration

Collaboration: FDA, USDA, NIST and Industry on Policy, Science, Standards and Measurement, and Data Management

https://fdc.nal.usda.gov/
The Federal LCA Commons
Collaboration between Federal Agencies to advance LCA

Our Mission:

– Advance LCA data, research and information systems
– Improve modeling methods consistency
– Enhance public access to Federal LCI data

https://www.lcacommons.gov/memorandum-understanding-0
Community of Practice

Research and Methods

Model and Data development
- Energy supply chains
- Energy generation and transmission
- Transportation systems
- Waste management
- Environmental impacts
- Construction materials
- Carbon capture and storage
- Agricultural production

Knowledge Management
- Whole building LCA analysis tools
- Open access data repositories and publication workflows
- Tools and resources for interoperability and data reuse

LCA Deployment and Policy Support
- Use of LCA in pavement design and procurement through FHWA LCA PAVE tool
- Guidance and technical reviews of LCA in support of Internal Revenue Service 45Q tax credit
- Conduct LCAs for DOE, Loan Program Office greenhouse gas analysis loan requirements
Work Products to Increase Consistency and Access

- **US Electricity Baseline: Consistent Background Models**
- **Elementary Flow List: Consistent Elementary Flows and LCIA**
- **Data Portal**
  
  [www.lcacommons.gov](http://www.lcacommons.gov)

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The Federal LCA Commons

Collaboration between Federal Agencies to advance LCA

- Leverage individual agency mission activities to:
  - Advance LCA data, research and information systems
  - Improve modeling methods consistency
  - Enhance public access to Federal LCI data

Formalized with a MOU signed by USDA, DOE, USEPA

[https://www.lcacommons.gov/memorandum-understanding-0](https://www.lcacommons.gov/memorandum-understanding-0)
Federal LCA Commons Knowledge Management

Open Data Services

Managing community data and reference models

Common data model and machine-readable exchange formats are critical

Research groups and Background data sources

Internal Data Curation and Management

Public Access to Data and Models

Sector specific LCA modeling and reporting
Federal LCA Commons Knowledge Management

Open Data Services

- Integrated open data workflow
- Metadata services
- Interoperability and reuse guidance and standards
*US LCI is part of the Federal LCA Commons.
Summary

• Federal LCA Commons plays a key role in laying the foundation for more consistent use of life cycle assessment in markets and policy.

• At this stage, collaboration is critical to coordinate policy, standards, data, and infrastructure to support applications.
Thank you!

Questions?

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