

# THE VALUE OF INPUT-OUTPUT INVENTORY TEMPLATES

For manufacturers, input-output data inventory, also known as life cycle inventory, templates provide a structured approach to the data collection process, making the templates invaluable for data-driven decision-making. By offering a consistent framework, these templates assure that data are:

- temporally aligned (i.e., appropriate for time period)
- technologically relevant
- geographically appropriate
- consistent in scope
- digitized in a consistent and accessible manner

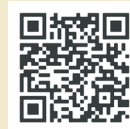
Ultimately, this framework ensures data are more comparable across different products and manufacturing processes.

## PNNL Data Inventory Templates and Support

Data inventory templates improve data quality and accessibility in the building industry, aiding reliable assessments and informed decisions. They streamline data collection, reduce use, support supply chain analysis, and promote innovative production methods. These templates enhance transparency, boost industry collaboration, and support both large and small manufacturers by providing open-source tools. By capturing supply chain data comprehensively, data inventory templates minimize material and manufacturing impacts, driving innovation and cost savings while fostering a more secure and efficient manufacturing ecosystem.

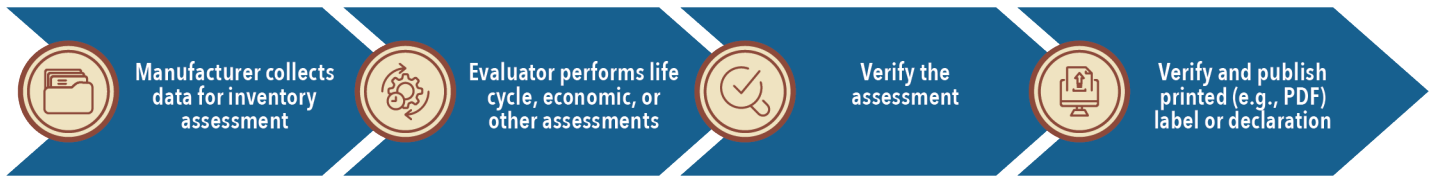
Data inventory templates provided by Pacific Northwest National Laboratory are tailored specifically to product categories, for example, within the buildings industry.

Overall, these templates simplify the data collection process, ensuring thoroughness and accuracy, which is imperative for impact and supply chain assessment.

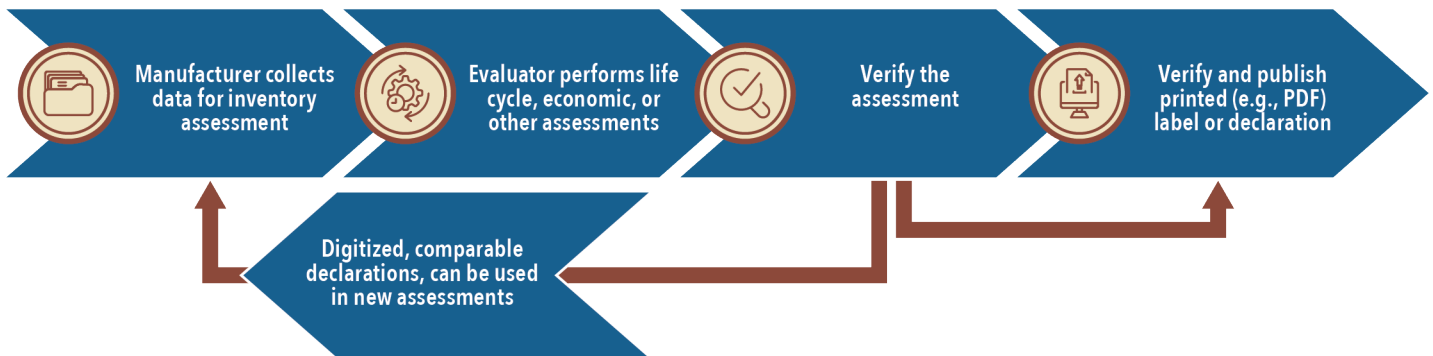


[Download Templates Here](#)

## Existing Linear Pathway of Inventory Data



## Improved Circular Pathway to Keep Inventory Data Digitized



### Supporting Innovation and Cost Savings

Data inventory templates, like those provided by PNNL, significantly enhance innovation and cost savings for manufacturers by streamlining data collection and analysis. Automating these processes reduces time and resource requirements, promoting practices like designing for disassembly and including use-phase and end-of-life stages. This approach aids product refurbishing, remanufacturing, and recycling and reduces ecological and economic impacts as well as potential supply-chain impacts. Data inventory templates also support innovative materials and energy-efficient production techniques, minimizing costs related to resource consumption and waste management. Thus, they foster a more economically beneficial manufacturing ecosystem, accelerating model updates, improving decision support, and offering advantages over traditional methods.

### High-Quality Data for Assessments

Data inventory templates improve the quality and availability of data needed for whole building assessments by providing comprehensive data collection processes that cover the entire supply chain—from raw material extraction to end-of-life management. By capturing all necessary inputs and outputs, these templates fill significant data gaps that have historically hindered building-level assessments and decision-making. This comprehensive data collection enhances the overall reliability of impact assessments, thus supporting more informed design and product labeling decisions within the building industry.

### Improving Transparency and Open-Source Data

By facilitating the creation of consistent and comparable data outputs, data inventory templates enhance transparency in the reporting of product impacts. These templates ensure that high-quality data are not only comparable but also accessible, especially for smaller manufacturers who might otherwise struggle with resource constraints. Data comparability builds trust among consumers, regulators, and industry stakeholders, boosting confidence in the reported data. Additionally, the development and sharing of open-source templates and data contribute to broader industry collaboration, fostering a culture of transparency and innovation essential for the advancement of secure manufacturing practices globally.



**For more information or to get started visit:**

<https://data.pnnl.gov/group/nodes/project/34302> or email: [LCI-template@pnnl.gov](mailto:LCI-template@pnnl.gov)