

# Using the Bill of Materials to Input-Output Inventory Converter

## Raw Python Model

To run the model, download the zip file and store it on your local device.

Before running the model, make sure your file structure looks like this:

Zip File

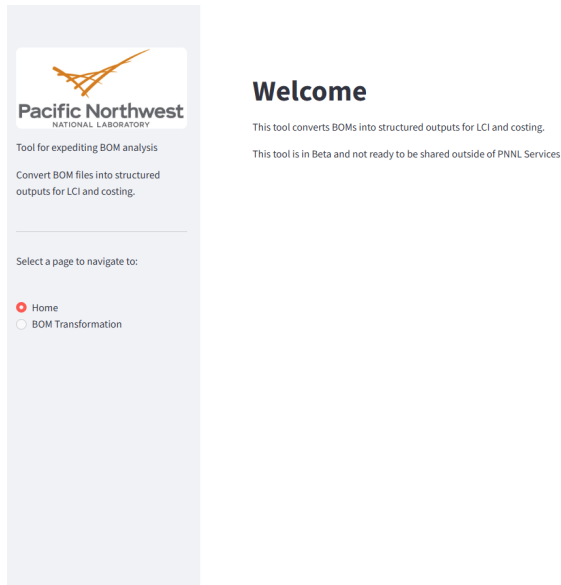
|app.py

|pages

||1\_BOM\_transformation.py

## Running the model from the raw code (Windows)

1. Open the command prompt
  - 1.1. Press **Windows+R**
  - 1.2. Type *cmd*
  - 1.3. Press **Enter**
2. Install required package
  - 2.1. In the Command Prompt, **run:** *pip install -r requirements.txt*
3. Navigate to the project folder
  - 3.1. In the Command Prompt, **run:** *cd "path\_to\_your\_folder"*
4. Confirm you are in the correct directory
  - 4.1. In the Command Prompt, **run:** *dir*
  - 4.2. You should see the following: app.py
5. Activate the conda environment (optional)
  - 5.1. In the Command Prompt, **run:** *conda activate*
6. Run the Bill of Materials (BOM) application
  - 6.1. In the Command Prompt, **run:** *streamlit run app.py*
7. Continue to the web application (see image) and follow the steps below



## From the Web

To run the model, click on the link provided and follow these steps:

1. Template Introduction
  - 1.1. Read the **Copyright Information and Disclaimers** before using the tool.
2. BOM Transformation
  - 2.1. Upload a Bill of Materials
    - 2.1.1. Upload a BOM file by either:
      - Dragging and dropping the file into the upload area, or
      - Clicking **Browse Files** and selecting a file.
    - 2.1.2. Accepted file formats include:
      - .pdf
      - .xlsx
      - .xls
  - 2.2. Parsed BOM Preview:
    - 2.2.1. After uploading, the application will display a **parsed preview of the BOM**.
      - Review this table to ensure the BOM was **parsed correctly**.
      - If the table appears incorrect, check the uploaded file formatting.

## 2.3. Select Required Columns

### 2.3.1. Using the dropdowns, select the following:

- Tree Level: The column that shows components and materials. This is usually a numerical list that highlights which components are part of others.
- Select a numeric value column: The column that shows the weights of the individual rows.
- Select a unit column (optional): The column that may highlight the units of each row's numeric value. May or may not be present; if not present, select "None."
- Percentage column (optional): Select the column that highlights the percent of the parent component's weight that each row is. If this is not present in the raw BOM, select "Not Present."
- Percentage range column (optional): Select the column that shows the percentage range that a row could be for its parent's numeric value column. If this is not present in the raw BOM, select "Not Present."
- Material identification columns (one or more): Select the column(s) that can be used to identify each row. Examples may include Material Name, Part Description, or Part Number. These columns will later be used for **Life Cycle Inventory Aggregation**.

## 2.4. Create Allocated Value Table

### 2.4.1. **Click** on "Create Allocated Value Table"

### 2.4.2. Review **Allocated Value Table** for validity

### 2.4.3. Select **Material or Flow Column for Life Cycle Inventory Aggregation**:

- Select the column that will be used to do the **life cycle inventory roll up**.
- The model will aggregate rows so that each **unique material appears as a single line item** in the life cycle inventory (LCI) table.

## 2.5. Review Output Tables

### 2.5.1. After processing, the application will generate two tables:

### 2.5.2. **LCI Table (Children Aggregated)**

- Aggregates **child components** by the selected material column.

### 2.5.3. **Costing Table (Parents Only)**

- Displays **parent components and their associated allocated values**.

## 2.6. Downloading Tables

### 2.6.1. Hover mouse over table.

### 2.6.2. A menu icon will appear in the upper-right corner.

### 2.6.3. Use this menu to download the table.

Questions? Please reach out to LCI-Template@PNNL.gov