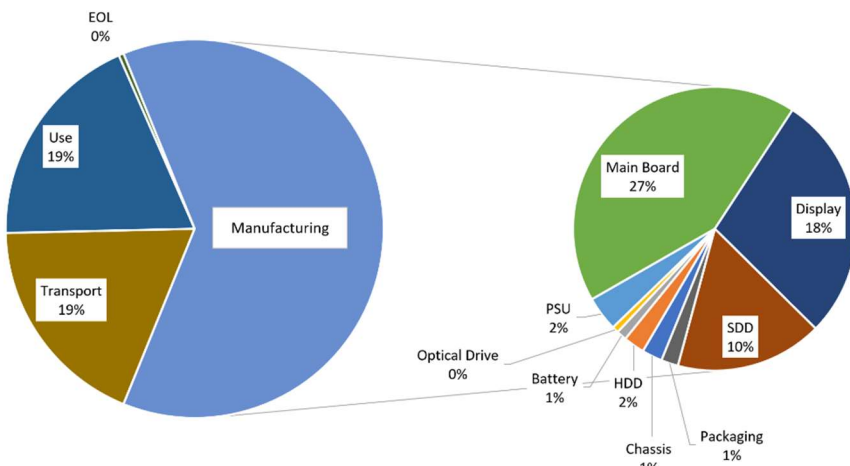


# Lenovo Product Carbon Footprint (PCF) Information Sheet

PC/Notebook/Monitor/Tablet

|                 |                              |                                                                                     |
|-----------------|------------------------------|-------------------------------------------------------------------------------------|
| Commercial Name | ThinkCentre M90a Pro Gen3    |  |
| Model Number    | 11VA, 11VB, 11VC, 11VD, 11VE |                                                                                     |
| Issue Date      | 2022.3.14                    |                                                                                     |

| Product Environmental Attributes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|------------|---------------|-----|-----|-----|-----------|-----|-----|----|------------|-----|---------|-----|-----|-----|-----|----|-----|----|---------|----|---------|----|-----------|----|---------------|----|
| (a) Product Carbon Footprint Value:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2160 kg of CO <sub>2</sub> e ( <b>see Note 1 below</b> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| (b) Product Picture:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | (c) Life Cycle Detail by Component & Life Stage (Pie Chart):                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  <table border="1"> <caption>Life Cycle Detail by Component &amp; Life Stage</caption> <thead> <tr> <th>Component / Life Stage</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>Manufacturing</td> <td>48%</td> </tr> <tr> <td>Use</td> <td>19%</td> </tr> <tr> <td>Transport</td> <td>19%</td> </tr> <tr> <td>EOL</td> <td>0%</td> </tr> <tr> <td>Main Board</td> <td>27%</td> </tr> <tr> <td>Display</td> <td>18%</td> </tr> <tr> <td>SDD</td> <td>10%</td> </tr> <tr> <td>PSU</td> <td>2%</td> </tr> <tr> <td>HDD</td> <td>2%</td> </tr> <tr> <td>Battery</td> <td>1%</td> </tr> <tr> <td>Chassis</td> <td>1%</td> </tr> <tr> <td>Packaging</td> <td>1%</td> </tr> <tr> <td>Optical Drive</td> <td>0%</td> </tr> </tbody> </table> | Component / Life Stage | Percentage | Manufacturing | 48% | Use | 19% | Transport | 19% | EOL | 0% | Main Board | 27% | Display | 18% | SDD | 10% | PSU | 2% | HDD | 2% | Battery | 1% | Chassis | 1% | Packaging | 1% | Optical Drive | 0% |
| Component / Life Stage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Percentage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Manufacturing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 48%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 19%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Transport                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 19%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| EOL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Main Board                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 27%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Display                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 18%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| SDD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 10%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| PSU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| HDD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 2%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Battery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Chassis                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Packaging                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 1%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| Optical Drive                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| <p><b>Note 1:</b><br/>All estimates of carbon footprint are uncertain. Lenovo reports the 95<sup>th</sup> percentile of the carbon footprint estimate to reflect that uncertainty. For this product, that estimate has a mean of 1100 kg of CO<sub>2</sub>e and standard deviation of 214 kg of CO<sub>2</sub>e. For a quantity that follows a normal distribution, the 95th percentile value is equal to the mean plus the standard deviation multiplied by 1.64. Other organizations might report this value as 1100 +/- 214 kg of CO<sub>2</sub>e.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| <p>This PCF was generated using the Product Attribute to Impact Algorithm model, Version 1.3.1, Date: 2022-03-17 (Product Type: AIO), © Massachusetts Institute of Technology's Materials Systems Laboratory, August 2012. Please refer to the Intended Uses and Limitations of the PAIA Model, © Massachusetts Institute of Technology's Materials Systems Laboratory, August 2012 for further details. <a href="#">Link to Document</a></p>                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| <p>This calculation was based upon a Lenovo ThinkCentre M90a Pro Gen3 with the assumptions and configuration described in the calculation assumptions in the next page.</p>                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |
| <p>This pie chart provides the percent contribution of the mean value for each element of the analysis for the full life cycle CO<sub>2</sub>e impacts of the product. Individual elements displaying 0% are less than 0.5%.</p>                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                        |            |               |     |     |     |           |     |     |    |            |     |         |     |     |     |     |    |     |    |         |    |         |    |           |    |               |    |

## Assumption Table

| Category                                 | Element                                           | Unit     | Input  | Mean | COV          |
|------------------------------------------|---------------------------------------------------|----------|--------|------|--------------|
| Product Specifics                        | Product Weight                                    | kg       |        | 8.5  | Primary Data |
|                                          | Annual Energy Usage                               | kwh      | 72.3   |      |              |
|                                          | Screen Size                                       | inches   |        | 24   |              |
|                                          | Product Lifetime                                  | years    | 5      |      | Primary Data |
| Location                                 | Assembly Location                                 | no unit  | Global |      |              |
|                                          | Use Location                                      | no unit  | Global |      |              |
| Transportation from Assembly to Customer | To country of use: by air                         | fraction | Input  | 0.25 | Low COV      |
|                                          | To country of use: by ship                        | fraction | Input  | 0.75 | Low COV      |
|                                          | To country of use: by rail                        | fraction |        |      |              |
|                                          | To country of use: by truck                       | fraction |        |      |              |
|                                          | In country of use: by air                         | fraction | Input  | 0.1  | Low COV      |
|                                          | In country of use: by ship                        | fraction | Input  | 0.7  | Low COV      |
|                                          | In country of use: by rail                        | fraction | Input  | 0.2  | Low COV      |
|                                          | In country of use: by truck                       | fraction |        |      |              |
| End of Life                              | Fraction Recycled (remainder to landfill)         | fraction | Input  | 0.8  |              |
|                                          | Fraction Shredded Recycling (remainder to manual) | fraction | Input  | 0.77 |              |

The PCF value is calculated using the specific attributes above for assembly, use and transportation mode. If you need any other country specific information, please contact [environment@lenovo.com](mailto:environment@lenovo.com).

### Notes:

Life cycle phases included in the streamlined Product Attribute to Impact Algorithm (PAIA) Life Cycle Analysis (LCA) can be grouped into four categories which include Manufacture, Transport, Use, and End of Life. Below is a brief description of each phase.

**Manufacture:** This life cycle phase captures emissions generated during the extraction, production, and transport of raw materials, the manufacture of components and subassemblies (including the product packaging) and product assembly.

**Transport:** Emissions included in the transport phase include all those generated during the air, ocean or land transport of finished or semi-finished Lenovo products between Lenovo facilities and from Lenovo facilities to customers.

**Use:** In use energy consumption is calculated in accordance with the U.S. Environmental Protection Agency's Energy Star® Typical Energy Consumption (TEC) methodology. Calculated energy consumption is then used in combination with average emissions factors for the designated country of use to calculate emissions.

**End of Life:** It is assumed that a designated portion of the product (see table above) is recycled at the end of the use period determined in the TEC methodology. It is also assumed that the balance of the product waste materials is disposed of by landfill. Emissions generated during the mechanical destruction, separation and transport of end of life materials are included in the calculation.

Product scope of this sheet includes desktop computer, integrated desktop computer, notebook computer, monitor and tablet. This document is only valid in connection with "THE ECO DECLARATION" of the specific product.