Eco Impact Estimator
Phase 3

Leaders
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Link to a recording of this webinar:
https://inemi.webex.com/inemi/lslr.php?RCID=b3dad96a5f294a83a63eb6f077acb092
This link will be good for six months following the webinar.

Call for Participation
February 11, 2019
Scope of Work - improve on Estimator tool’s existing component algorithms / methods for estimating eco-impact of ICT products

Project Goals:

• Allow targeted users general access so product evaluations and case studies can be input and maintained within the tool (specifics for access, security, and product / case study information propriety protection will need to be fully developed and confirmed).

• Further improve on the component algorithms and methods for estimating the eco-impact of ICT products. This eco-impact is initially limited to greenhouse gas emissions related to Global Warming Potential. The team may consider expanding this eco-impact to additional environmental aspects (e.g. energy usage, water).

• The following areas will initially be targeted: Printed Wiring Boards (bare) – including conventional and HDI type boards; Large Integrated Circuits (ICs) – including flip chips, SOCs, 2.5D / 3D stacked die arrays, and others; Power Supplies, Cable Assemblies, Fan Trays, Passive Components, Mechanical Subassemblies (e.g. housings, cabinets, chassis)
This Project **IS:** | This Project **IS NOT:**
---|---
**Eco-Impact Estimator within an Academic-based User Tool** |  
IS for providing open access to target users | NOT for creating a standard or governmental approved tool (though could be addressed in later phases)  
IS for using the tool to obtain additional input and feedback from its target users | NOT meant for industry-wide adoption (though could be addressed in later phases)  
IS to improve the tool data sets and estimation methods for its key component categories and LCA stages | NOT a replacement for traditional (in-depth / detailed) LCA analysis  
 | NOT intended for competitive assertions between products, components or materials
Task 1: Allow targeted users general access so product evaluations and case studies can be input and maintained within the tool (specifics for access, security, and product / case study information propriety protection will need to be fully developed and confirmed). Conduct survey of iNEMI members who are using the tool or have used the tool for feedback.

Task 2: Further improve on the component algorithms and methods for estimating the eco-impact of ICT products. This eco-impact is initially limited to greenhouse gas emissions related to Global Warming Potential. The team may consider expanding this eco-impact to additional environmental aspect (e.g. energy usage, water).

Task 3: The following areas will initially targeted: Printed Wiring Boards (bare) – including conventional and HDI type boards; Large Integrated Circuits (ICs) - including flip chips, SOCs, 2.5D / 3D stacked die arrays, and others; Power Supplies, Cable Assemblies, Fan Trays, Passive Components, Mechanical Subassemblies (e.g. housings, cabinets, chassis)
Current Tool – All Life Cycle Stages

Product Hierarchy
- Telecom Network Product 1
  - Cabinet
    - Cabinet Housing
  - Chassis 1
    - Chassis 1
  - Circuit Pack 1
    - Printed Circuit Board
    - Large IC
    - Fan Plate
    - Plastic latch clips(2 Nos.)
    - Interconnect cable

Life Usage Stage
Location of installation: European Union - 27 Global/Region
Yearly Usage: 365 Days/Year
Operating Life: 8 Years
Daily power profile: 620.00

LifeUsage CO2 Emission: 617.10 kg CO2e

End Of Life Stage
Large IC: 1 nos.
Total Bareboard Area: 290.00 cm2
Fan Trays: 0 nos.
Wire/Cable: 0.00 meters
Steel: 2.50 kg
Aluminium: 5.60 kg
Plastics: 1.23 kg

End of Life CO2 Emission: 47.55 kg CO2e
Current Tool – Manufacturing Stage

ECO-Impact Estimator

Hierarchy:

- Telecom Network Product 1
  - Cabinet
    - Cabinet Housing
  - Chassis-1
  - Circuit Pack 1
    - Printed Circuit Board
    - Large IC
    - Face Plate
    - Plastic latch clips(2 Nos.)
    - Interconnect cabling

Carbon Footprint Calculation

Manufacturing Stage

Create Component | Create Product/Part | Add Existing Product/Part

Delete This Product
Duplicate Product
Create/View Cradle To Grave Product

Product/Part Name: Telecom Network Product
Product/Part Type: Configured Product
Product/Part No.: TNP-1 Config A
Notes: Configuration A

Want to Override the value of CO2 Emission? ☐
CO2 Emission: 92.295 kg CO2e

Save | Reset
Current Tool – Components / ICs

Please select the type of component:
- BareBoardComponent
- CabinetComponent
- CableComponent
- CoolingComponent
- LargeICComponent
- MetallicComponent
- PackagingComponent
- PolymerComponent
- SpecialComponent
- SpecialtyCableComponent

Improve / Expand

10 Choices

Please select the type of component: LargeICComponent

Component Name: Large IC
Component No.: IC-1
Package Type: BGA, PLCC, QFP, TQFP
CO2 Emission:
No. of Units: 1

Want to Override the value of CO2 Emission? No

Notes:
Pin Count: 256 (Nos.)

Improve / Expand

4 Choices
Schedule

• Call for Participation Webinars:
  – Monday, February 11th 11 am – Noon ET
  – Monday, February 11th 9 pm – 10 pm ET

• Initial Sign up ends March 11th

• Fast Turn Project

• Project Kickoff Plan
  – Week of March 18th

• Duration (Approximately 12 months)
  – Start in March 2019 and present findings by first week of April 2020
Steps for Joining

• Details can be found on the project website: https://community.inemi.org/eco-impact_3

• iNEMI Members:
  – Download the Project Statement and statement of work from project website
  – sign the Project Statement and return to iNEMI

• Non-members:
  – Option 1: Become an iNEMI member
  – Option 2: Participate as a non-member fast turnaround project participant. Request the MOU from Mark Schaffer (marks@inemi.org)
Backup
Past Project Objectives

**Phase 1**: Developed methodology for more easily estimating environmental impact of ICT products

*(Completed September 2010)*

**Phase 2**: Prepared proof-of-concept estimating tool and updated / refreshed environmental impact datasets for ICT components

- Developed proof-of-concept estimating tool w/ plug-in datasets
  - Input / output formats
  - Algorithm and dataset refinement (from Phase 1)
  - Tested prototype & compare w/ known life cycle assessment results
- Updated key datasets and algorithms
  - Printed wiring boards

*(Completed September 2012)*
Estimator Methodology - Basics

- Integrate simplified processes to easily derive environmental impact info
- Provide a reasonable level of accuracy that is suited to ICT industry’s needs
- Define key components and parameters within ICT product types based on their relative contribution to the overall environmental impact
  - About 90% of parts have common application in ICT product types / classes
- Use “building block” approach in providing life cycle based environmental impact information for ICT products and sub-assemblies
- Demonstrate scalability, transparency, and a means for continuous improvement
  - Updateable databases via cross-industry information sharing