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## **iNEMI Product Carbon Footprint (PCF) Position Statement** **February 27, 2010**

### **1. Overview of Regulatory and Market Trends**

There is a growing global movement to measure and reduce greenhouse gas (GHG) emissions related to product manufacturing and use. Consumers and businesses are looking to minimize their GHG impact. As concerns grow, there is increasing pressure by governmental and non-governmental organizations, investors, analysts and other key stakeholders in the information and communication technology (ICT) industry to proactively address climate change. In the future, a combination of regulatory and/or market-based requirements will place further demands on the ICT industry with respect to product carbon footprint<sup>1</sup> (PCF) reporting and/or labeling.

### **2. ICT as a Solution for the Low Carbon Economy**

The ICT industry contributes approximately 2% of the total GHG emissions worldwide.<sup>2</sup> Much more significant, however, is this industry's opportunity to mitigate the remaining 98% of emissions. Aside from emissions associated with deforestation, power generation and fuel used for transportation are the largest sources of man-made GHG emissions,<sup>3</sup> and the ICT industry can deliver sustainability solutions in both of these areas across all product sectors and industries. **ICT products stand to deliver approximately 7.8 GtCO<sub>2</sub>e (gigatons of CO<sub>2</sub> equivalent) savings by 2020,<sup>4</sup> which represents an incredible opportunity for GHG reduction.** Given this significant savings potential, the ICT industry can position itself as a leader in enabling a low carbon economy.

### **3. Overview of PCF Tools, Methodologies, Databases and Standards**

Product carbon footprinting has the potential to benefit the ICT industry significantly when used within the proper parameters. PCF can be resource intensive and challenging to properly measure and apply in practice. Lifecycle assessment (LCA) methods traditionally have been used to measure PCF, but existing LCA methodologies, databases and tools do not meet the needs of ICT products that are high-tech, complex and evolve rapidly. Further complicating matters are the thousands of components and specialized manufacturing processes that make up ICT products.

Although framework standards for conducting LCAs are widely accepted (e.g., ISO 14040/14044/14067), there is a need to further develop LCA databases and methodologies to address the specific needs of the ICT industry. Several standards organizations have such initiatives underway: the European Telecommunications Standards Institute (ETSI), International Telecommunication Union (ITU), International Electrotechnical Commission (IEC), the World Resources Institute (WRI),<sup>5</sup> and the British Standards Institution (BSI).<sup>6</sup>

<sup>1</sup> Product carbon footprint (PCF) is used here to mean the total amount of CO<sub>2</sub> and other greenhouse gases that are affiliated with the full lifecycle of a product (expressed as grams, kilograms or tons of CO<sub>2</sub> equivalents)

<sup>2</sup> Gartner, *Green IT: The New Industry Shockwave*, presentation at Symposium/ITXPO conference, April 2007

<sup>3</sup> SMART 2020: Enabling the low carbon economy in the information age; <http://www.smart2020.org/>

<sup>4</sup> Ibid

<sup>5</sup> The WRI's GHG Protocol is being extended to include purchased goods and services

<sup>6</sup> Publicly Available Specification (PAS) 2050 – Specification for the assessment of the life cycle greenhouse gas emissions of goods and services

#### **4. ICT Industry Assessment of Prior Work**

From lifecycle inventories to hybrid lifecycle assessments, researchers have struggled with the challenges inherent in applying LCA methods to ICT sector products. Results from LCAs typically cannot be compared due to varying boundary conditions, assumptions and data sources, and are further compromised by the varying methods used by researchers. LCA methods that rely on economic or product price data (e.g., economic input-output method) are not reliable for ICT due to the high variability and inaccuracy of the results. To further complicate matters, the ICT industry is very dynamic, with some product lifetimes being shorter than the time required to conduct a detailed LCA.

Published ICT LCA studies have provided key findings that can serve as the basis for further work. First, the carbon footprint of many ICT products is dominated by the use phase of the device (electricity consumed when using the device over its lifetime). Second, the basic components of ICT equipment (printed circuit boards, semiconductors, discrete devices, etc.) are similar across the industry leading to some base data elements that are reusable. Third, the carbon footprint of ICT products is largely set in the products' initial designs. As a result, there is the opportunity to kick-start the development of a simplified and sufficiently accurate methodology for data collection and PCF calculations for ICT equipment. This streamlined methodology can be used in the design phase where it can potentially have the greatest impact on GHG reduction for ICT products.

#### **5. iNEMI Position on PCF for ICT**

iNEMI and many of its member companies recognize the significance of climate change and believe it is best to work collectively as an industry at multiple levels of the supply chain to address this challenge. iNEMI supports the development of robust PCF tools for the ICT industry that will enable consistent and comparable PCF calculations. The ultimate application of a harmonized global ICT PCF methodology will benefit the industry by creating a level playing field and will benefit customers by improving informed choice. In order to reduce the extensive time and resources needed to perform full LCAs on complex ICT products, simplified LCA-based tools must be developed to effectively quantify and compare environmental impacts of specific product attributes while enabling the industry to focus improvements on those areas where significant environmental opportunities exist (e.g., use phase energy consumption).

Any simplified LCA toolset and methodology should be consistent with internationally accepted standards and databases that are recognized for their authenticity and accuracy. The ICT industry will play a key role in adding to and updating usable data, as well as providing transparency for its review and validation.

Through iNEMI initiatives such as the Eco-Impact Evaluator Project<sup>7</sup> and in partnership with other leading organizations and institutions, iNEMI is committed to taking a leadership role in developing and driving widespread adoption and use of simplified LCA-based tools to enable PCF calculations for the ICT industry. Through its global presence and focus, and the breadth and depth of its member companies, iNEMI is uniquely positioned to drive PCF tool and methodology development that meets the needs of the ICT Industry and its supply chain, and then subsequently ensure widespread use.

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<sup>7</sup> [http://www.inemi.org/cms/projects/ese/Eco\\_Impact\\_ICT.html](http://www.inemi.org/cms/projects/ese/Eco_Impact_ICT.html)