

LCA-Based Eco-conscious Product Design

We utilize the results of LCA analysis in design and manufacturing processes.

LCA (Life Cycle Assessment) is a method of evaluating the environmental impact of a product over the entire life cycle from excavation of raw materials for materials manufacturing, to product manufacturing, transport, use, and, ultimately, disposal.

We utilize LCA analysis tools to evaluate semiconductor products and reflect analysis results in product development and design because we want to be able to provide our customers with products that have minimal impact on the environment.

Now that the European Union's framework legislation EuP (Energy Using Products) Directive has gone into force, our customers that manufacture electrical and electronic devices are also starting to undertake eco-conscious product development that considers the product life cycle. Because LCA calculations for semiconductor devices are complicated, the LCA Working Group of Semiconductor Environment and Safety Committee attached to Japan Electronics and Information Technology Industries Association (JEITA) - Japan Semiconductor Industry Association (JSIA) has developed a revolutionary tool (JEITA LCA system for Semiconductor: JLCAS) that makes it easy for anyone to calculate LCA values.

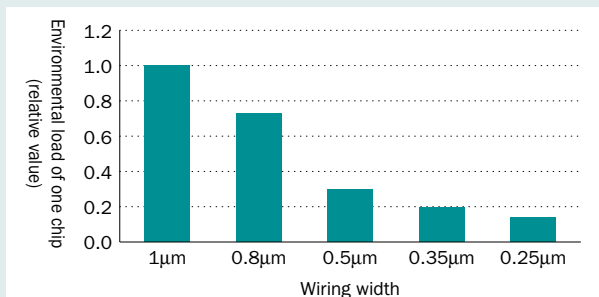
NEC Electronics participates in the LCA Working Group and is working on joint development of the tool with other semiconductor device manufacturers.

URL <http://www.jeita.or.jp/english/>
Japan Electronics and Information Technology Industries Association

Miniaturization to reduce environmental impact

In order to make compact, light, high-performance semiconductors, it is necessary to reduce circuit wiring width. The results of LCA analysis show that miniaturization reduces environmental load.

Reduction of environmental load due to miniaturization



*The environmental load (energy and materials are converted to CO₂ emission values) of the manufacturing process for one chip is reduced by miniaturization of LSI wiring width.

Green Procurement

We procure materials with low environmental impact from purchasing partners with a high degree of environmental awareness.

The NEC Electronics Group proactively engages in green procurement efforts as part of our CSR procurement activities with the cooperation of purchasing partners whose high level of environmental awareness enables supply of low eco-impact materials and components manufactured by low eco-impact processes.

Specifically, we define green procurement as purchasing from partners whose environmental and safety efforts have been examined and determined to satisfy requirements for NEC Electronics "green certification."

In fiscal 2004, we took the first step by conducting "green certification" examinations of partners who supply us with direct materials and packaging materials, and achieved 100% green procurement. Since fiscal 2005, we have expanded examinations to include partners who supply us with indirect materials, manufacturing facilities, and tools. At the end of March 2006, we met our goal for 100% green procurement.

URL <http://www.necel.com/procurement/en/green.html>
Detailed information on green procurement at NEC Electronics.

Requirements for green certification

Product category	Requirements of partners (partners are evaluated separately)	Product requirements (Products are evaluated separately)
Direct materials Packaging materials	Existence of an environmental management system	<ul style="list-style-type: none"> • Non-use of substances banned in the manufacturing process • Non-inclusion of banned substances in products • Existence of a system for phasing out substances designated for elimination • Existence of a system for cooperating with chemical substance content examinations
Indirect materials Manufacturing facilities, etc.	Existence of an environmental management system	—

Operational flow of green procurement system

