

Top Message	Message from the Head of Corporate Environmental and CSR Strategy Unit	Special Feature 1: The Fujitsu Group Medium/Long-term Environmental Vision	Special Feature 2: Digital Co-creation	Fujitsu Group Environmental Action Plan Stage VIII	Chapter I Contribution to Society	Chapter II Our Business	Environmental Management	Data Overview
Contribute to Sustainable Development of Society through Provision of ICT Services		Developing Innovative Technologies for Solving Environmental Issues		Development of Top-Level Energy Efficient Products	Improving the Resource Efficiency and Resource Circulation of Products	Product Recycling		

Improving the Resource Efficiency and Resource Circulation of Products

Our Approach

There is a growing view worldwide of the importance of resource efficiency. An example can be seen in the EU's designation of resource efficiency as a growth strategy and its establishment of the Resource Efficiency Flagship Initiative.

Efficient use of resources in the ICT products that we provide to customers is important. We have engaged in 3R design that draws on the principles of reduce, reuse, and recycle, and have developed our products with technology that is effective in reducing the use of resources. We are making efforts to improve resource efficiency, which is made possible by designing products to be lighter and smaller, using recycled plastics, reducing the number of parts, enhancing ease of disassembly, and improving recyclability. Our goal is to offer products that provide customers with benefits including compactness, light weight, and space savings.

Summary of FY 2016 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VIII) (toward FY 2018)	Promote eco design for resource saving and circulation and increase resource efficiency of newly developed products by 15% or more (Compared to FY 2014)
FY 2016 Targets	Increase resource efficiency of new products by 5% or more (Compared to FY 2014)
FY 2016 Key Performance	Increase resource efficiency of new products by 14.7% improvement (Compared to FY 2014)

FY 2016 Performance and Results

Improving the Resource Efficiency of New Products

In FY 2012, the Fujitsu Group created its own definition of resource efficiency. In FY 2016, as well, we continued to use our indicators to evaluate products newly developed by Fujitsu*, while also reducing product part quantities and reducing product size through smaller, thinner, and lighter parts and higher-density mountings.

* **Products newly developed by Fujitsu:** Excludes products for which resource efficiency is determined by customer specifications or standards.

Achieving 14.7% Improvement in Resource Efficiency

Fujitsu has achieved a 14.7% improvement in FY 2016, against a target of 5%, through reduced size and weight, in PCs, smartphones, palm authentication devices, and image scanners.

Fujitsu Receives the LCA Japan Forum Chairman's Award (See Page 48)

The Fujitsu Group received its first Chairman's Award at the 13th LCA Japan Forum Awards*. The award recognized Fujitsu's efforts to improve product resource efficiency, implement Group-wide improvement activities, and continue applying its environment-related activities across its product lineups.

* **LCA Japan Forum Awards:** Given to companies that work to alleviate products' environmental burdens by applying, expanding, establishing, and energizing life-cycle assessments.



Award recipients

Working toward Our Targets

To improve new product resource efficiency by at least 15%, Fujitsu will continue current initiatives, while expanding development of new lightweight, rigid materials and the use of recycled materials. We will also widely publicize product environmental performance to grow sales.

Reference Information

Definition and Calculation of Resource Efficiency

Resource efficiency is evaluated by dividing the value of a product by the environmental burden from use and disposal of the elements (resources) comprising the product.

$$\text{Resource efficiency} = \frac{\text{Product value}}{\left(\begin{array}{l} \text{Environmental burden from resource usage} \\ \text{Σ (Resource burden coefficient} \\ \text{x Resource usage volume)} \end{array} \right) + \left(\begin{array}{l} \text{Environmental burden from resource disposal} \\ \text{Σ (Resource burden coefficient} \\ \text{x Resource disposal volume)} \end{array} \right)}$$

Definition of Each Item

Product value	To place emphasis on the valuation of reduction in environmental burden due to resource usage and disposal, product value is limited to those that are related to resource usage and is set on a per-product basis. (Example of factor not considered: CPU performance improvements)
Resource burden coefficient	Environmental burden weighting coefficient that is specific to a particular resource and considers factors like exhaustibility, scarcity, and environmental impact from mining and disposal. Activities will begin with this figure set to a value of "1" for all resources.
Resource usage volume	Mass of each resource used in the product (excluding the mass of recycled plastic used).
Resource disposal volume	Mass of each resource disposed of (not reused) in connection with a post-use product (design value). Activities will begin with this figure set to a value of "0."

Top Message	Message from the Head of Corporate Environmental and CSR Strategy Unit	Special Feature 1: The Fujitsu Group Medium/Long-term Environmental Vision	Special Feature 2: Digital Co-creation	Fujitsu Group Environmental Action Plan Stage VIII	Chapter I Contribution to Society	Chapter II Our Business	Environmental Management	Data Overview
Contribute to Sustainable Development of Society through Provision of ICT Services		Developing Innovative Technologies for Solving Environmental Issues		Development of Top-Level Energy Efficient Products	Improving the Resource Efficiency and Resource Circulation of Products	Product Recycling		

Improving the Resource Efficiency and Resource Circulation of Products

Main Activities in FY 2016

A Smartphone 12% Thinner and 5% Lighter Than Its Predecessor

arrows SV F-03H



34%
resource efficiency
improvement
(over conventional
models)

Fujitsu released the arrows SV F-03H smartphone in July 2016. Featuring a variety of unique design elements, the product achieves both a lightweight, resource-saving structure and a remarkable degree of toughness.

In addition to incorporating a high-density component layout that cuts the board area by 60% relative to the previous model, the device design uses an embedded touch panel with an integrated display to make the device 5% lighter and 12% thinner. The design team also focused on balancing toughness with aesthetic appeal, allowing the device to pass drop tests and other durability assessments as well. The number of repaired units dropped 70% from the last model.

The device's battery life* increased to more than three days. The plants manufacturing the smartphones switched to automated lines for the back panel-installing process, thereby contributing to CO₂ reductions in the production stage.

* **Battery life:** The average amount of time that a battery lasts under average smartphone usage conditions (calculated based on data from a June 2015 study by Intage Inc.)
(NTT DCOMO research/manufacturer research)

The World's Lightest 13.3-Inch Mobile PC

LIFEBOOK UH75/B1



97%
resource efficiency
improvement
(over conventional
models)

The LIFEBOOK UH75/B1, which hit the market in February 2017, features new device casing parts and new printed-circuit boards, LCDs, batteries, and keyboards. By using the new components and working closely with plants and suppliers, Fujitsu created the world's lightest 13.3-inch mobile computer, weighing 761 grams.

Use of a magnesium-lithium alloy cover (LCD back cover) for the casing and thin-wall magnesium alloy casting for the top and bottom cover of the unit realized a thin and robust design in addition to lighter weight. Fujitsu also worked with its LCD manufacturer to develop thin glass and thin backlight features. Not only did the collaboration enable a lightweight design, but both collaborators also inspected each other's production lines to ensure maximum quality.

For the device components, too, Fujitsu focused on eliminating unnecessary elements, meticulously crafting a streamlined design and painstakingly minimizing the overall weight down to the last tenth of a gram.

Advancing 3R Design

Through our proprietary product environmental assessments and green product evaluations, the Fujitsu Group is working toward the application of reduced resource usage, improved recyclability, and other technologies that take into account the 3Rs. Examples of the effective resource-saving technologies that we are deploying in our products include reductions in the number of components and cables, performance enhancements, space savings through higher-density integration, and digital product manuals. Furthermore, we are using Fujitsu's own 3-D Virtual Product Simulator (VPS), which is popular with many of our customers during their product design processes, to test the steps involved and the convenience of product assembly and disassembly before creating prototypes.

From 2010, we have also conducted regular study tours for designers at the Fujitsu Group recycling centers. In addition to hands-on experience with dismantling used products, designers gain feedback from staff in charge of recycling through idea exchanges and explanations of the obstacles to ease of dismantling. From FY 2015, the Fujitsu Group has been summarizing examples of the obstacles to ease of dismantling that we have learned from some 90 case studies at 5 recycling centers. Results are distributed in a systematic collection complete with pictures.



Gaining experience in dismantling at recycling center study tour