

# Eco-Friendly Products

We are accelerating the development of Green Products and Super Green Products and are working to reduce environmental burdens throughout the product life cycle.

## Green and Super Green Product Development

The Fujitsu Group has adopted a unified Group-wide approach to eco-design for newly designed products and works to improve environmental performance throughout the product life cycle. We have been implementing our own environmental assessments for products since 1993, and we strive to develop eco-friendly products that reflect environmental considerations in such areas as energy saving, 3R design\*, non-use of hazardous chemical substances, packaging materials, and information disclosure.

Moreover, in 1998, to further strengthen development of eco-friendly products, we established Green Product Evaluation Standards and positioned the products that satisfy them as Green Products. Then, in FY 2004, we combined what had previously been two separate sets of regulations – for product environmental assessment and for Green Product evaluation – into a single set of standards with even higher levels of consideration for the environment. We called these Product Environmental Green Assessment Regulations, and they have helped to both strengthen our Green Product development efforts and make them more efficient.

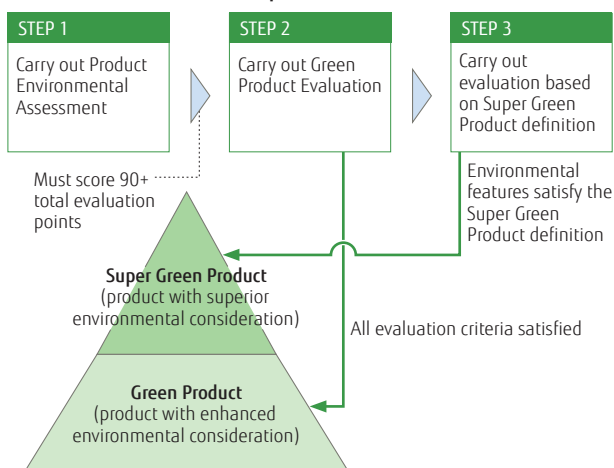
Furthermore, since FY 2004, we have been working on what we call "Super Green Product" development for newly developed products. Super Green Products are those that meet the required conditions for Green Products and are also top class in terms of low energy consumption and/or 3R design technology, non-use of hazardous substances, packaging materials and use of eco-friendly materials and technologies. Super Green Products are products or systems recognized as having superior environmental characteristics to others we supply or are available on the market.

Starting in FY 2010, the definition of Super Green Product has been revised to be the more strict "being in the top level in both energy saving and some other parameter (such as resource saving)."

In FY 2010, another 19 products were recognized as being Super Green Products.

\* 3R design: Design based on the principles of reduce, reuse and recycle

### Mechanism for Green and Super Green Product Evaluation



## The Green Policy Innovation Logo

The Fujitsu Group green IT project "Green Policy Innovation" logo is affixed to Green Products and Super Green Products.

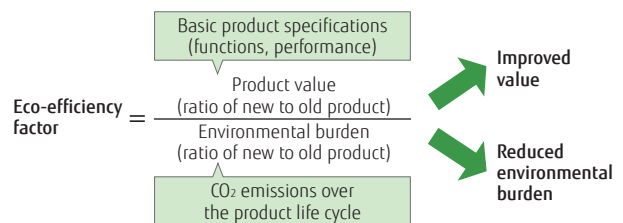


## Improving the Eco-Efficiency Factor

We introduced the eco-efficiency factor\*, which evaluates both the environmental burden reductions and the product value increases at the same time for newly developed Green Products in the Fujitsu Group Environmental Protection Program (Stage V) in FY 2007. In the Fujitsu Group Environmental Protection Program (Stage VI), we changed the base fiscal year for products from FY 2005 to FY 2008 and are continuing these activities.

In FY 2010, which is the first year of the Fujitsu Group Environmental Protection Program (Stage VI), we achieved a factor of 3.2 in comparison with our target of 1.5, significantly exceeding the target. The main factors were improvements in data-processing power and energy efficiency in network products and PC servers. Since we have already achieved the FY 2012 target of 2.5, we revised that target upwards for even further improvement.

\* Eco-efficiency factor: A method for comparing old and new products that quantitatively grasps improvements in both product environmental burden and value (functionality and performance). This is an environmental index that promotes the creation of products that can provide even higher values with even lower environmental burden.



## Application to Global Environmentally Friendly Standard Products

In May 2011, we established an internal standard, the Eco Design Standard, that conforms to the IEC 62075\*1 international standard and strives to meet the environmental requirements of the market\*2.

Fujitsu PCs and servers are designed in both Japan and Europe and are provided globally. We are moving forward globally with product environmental friendliness with this round of standards unification.

\*1 IEC 62075 international standard: A product life cycle environmental design standard for video, audio, information, and communications equipment. This standard was published in January 2008 and established as JIS C 9914 in July 2010 in Japan.

\*2 Covered equipment: PCs, servers, and storage systems.

## Super Green Product Development Examples

### SPARC Enterprise M3000 UNIX Server



- Energy savings**  
Conforms to the standards of the Japanese 2011 Energy Conservation Law and reduces maximum power consumption by 53% compared to earlier products.
- 3R design technology**  
Weight reduced by 51% and volume reduced by 52% compared to earlier products.

### PRIMEQUEST 1400S2 Mission-Critical IA Server



- Energy savings**  
Conforms to the standards of the Japanese 2011 Energy Conservation Law and reduces operating power consumption by 70% compared to earlier products. Uses the 80Plus Gold power supply.
- 3R design technology**  
Weight reduced by 82% and volume reduced by 91%.

### IPCOM EX2500 Series Network Server



- Energy savings**  
Reduces power consumption by 78% per unit performance, achieves an eco-efficiency factor of 7.49 and an environmental burden of 0.37.
- 3R design technology**  
Weight reduced by 41% and volume reduced by 53%.

### ESPRIMO D570/B Desktop PC



- Energy savings**  
Reduces operating power consumption by 20% or more compared to earlier products and by 50% or more compared to the international Energy Star guidelines. Provides a power outlet linked to the on/off state of the display power supply.
- 3R design technology**  
Four or fewer types of plastic used in the chassis.
- Chemicals**  
Halogen-free materials used for the chassis plastics.

### ScanSnap S1100 Color Image Scanner



- Energy savings**  
Reduces sleep mode power consumption by 77.6% compared to the international Energy Star guidelines, reduces operating power consumption by 44.4% compared to earlier products, and reduces standby mode power consumption by 64.2% (compared to DC power operation).
- 3R design technology**  
Achieves the world's lowest class in chassis volume, a weight reduction of 78.0% compared to earlier products, and volume and parts counts reductions of 79.6% and 24.6%, respectively.
- Chemicals**  
Using LED light sources (eliminating mercury additives)

### SR-S316TL1 Secure Switch



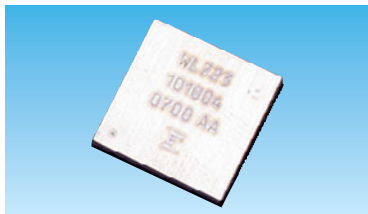
- Energy savings**  
Achieves an efficiency that is 300% of the energy consumption efficiency target standard and reduces power consumption by 87% compared to earlier products.
- 3R design technology**  
Weight reduced by 80% and volume by 82.5% compared to earlier products.
- Chemicals**  
Lead-free solder is used in all printed circuit boards.

### SG-2110 Palm Vein Recognition Unit Room Access Control System



- Energy savings**  
Operating power per unit performance reduced by half for faster recognition.
- Chemicals**  
Weight reduced by 30% or more and volume by 10% or more compared to earlier products.

### MBH7WLZ23 Wireless LAN Module



- Energy savings**  
Standby mode power reduced by 41% compared to competing products.
- 3R design technology**  
Achieves the top level of miniaturization in its field.
- Chemicals**  
Halogen-free materials used for printed circuit boards.

### FTR-K3L Power Relay



- Energy savings**  
Achieves a standby mode power consumption of 0 W in a self-maintaining relay.
- Chemicals**  
Lead-free solder used and contains no materials covered by REACH regulations.

## Eco-Friendly Products

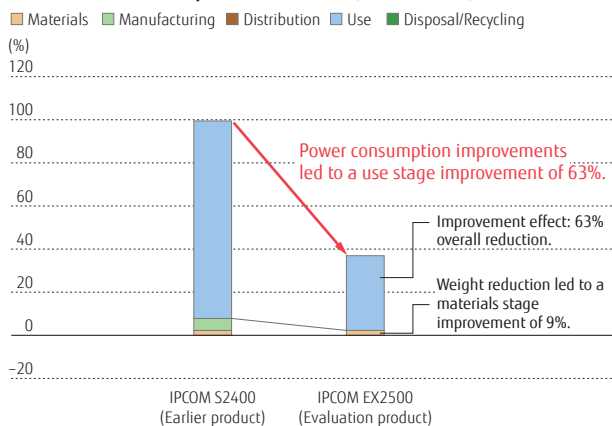
### Carrying Out Life Cycle Assessment (LCA)

The Fujitsu Group has made it obligatory to perform LCAs for all its Green Products. Calculation standards have been formulated for each product family, and the Group efficiently evaluates the environmental burdens of its products using its own database\*.

Performing LCAs makes it possible to determine which parts of a product's life cycle account for the greatest proportion of the environmental burden, so that environmentally friendly products (see page 45) can be designed effectively. We also apply the expertise developed through our LCA activities to calculate the eco-efficiency factor, and are actively using this as a tool for communicating with our customers.

\* **Our Own Database:** This is our own unique database of unit values, created by Fujitsu Laboratories based on input-output tables.

#### IPCOM EX2500 LCA Improvement Effects (CO<sub>2</sub> emission)



### Environmental Labeling and Information Disclosure

We actively disclose environmental information on our products, both via the Internet and in the form of environmental labels.

Since the end of FY 2006, we have registered notebook personal computers under the EPEAT\*1 system, which encourages the purchase of green PCs and is used chiefly by US government bodies. Product environmental information for computers, magnetic disk devices, displays, printers, scanners, and mobile phones covered by green purchasing laws\*2 is published on the Ministry of the Environment's website\*3, while the equivalent information for computers, displays, printers and scanners conforming to the ENERGY STAR Program in Japan is published on the website of the Energy Conservation Center, Japan\*4.

\*1 EPEAT website: <http://www.epeat.net/>

\*2 Green purchasing laws: Laws related to promoting the purchase of eco-friendly goods and products by the country or other parties.

\*3 Ministry of the Environment's website: <http://www.env.go.jp/en/laws/policy/green/index.html>

\*4 Energy Conservation Center, Japan website: [http://eccj06.eccj.or.jp/cgi-bin/enestar/pub\\_productsE.php](http://eccj06.eccj.or.jp/cgi-bin/enestar/pub_productsE.php)

#### Environmental Efforts Example 1

##### Efforts to Making Networks Greener

It is estimated that, due to increases in network traffic, power consumption in network equipment in Japan will be 13 times larger in 2025 than it was in 2006. Thus rapid increase in power consumption in this equipment is an issue of concern.

To reduce our customers' environmental burden through saving energy in network products, we have been working to develop energy-saving technologies from five standpoints: (1) devices, (2) systems, (3) whole networks, (4) network construction and operation, and (5) solutions that use networks. We develop, for example, access transport systems and optical expansion wireless units as products that incorporate a wide range of energy-saving technologies. At the same time as saving our customers significant amounts in operating and maintenance costs, these products contribute to making the whole network "greener."

##### Access Transport System Flashwave 2440 Series



\* **Energy savings:** Complies with the FY 2011 standards in the Japanese Energy Conservation Law. Power consumption is reduced by 64% compared to earlier products.

\* **3R design technology:** Weight was reduced by 62% and volume by 66% compared to earlier products.

#### Environmental Efforts Example 2

##### Developing and Providing Software that Saves Energy During ICT Operation

Energy-saving effects during operation can be obtained in ICT equipment such as servers, storage units, and networks by combining effectively with appropriate software.

For example, we supply a variety of software that reduces power consumption, including software to manage the state of energy-saving settings on PCs for the office\*1, software to automate power on/off, business operation, backup, and power supply control in servers for the data center\*2, and software to monitor whether the power is turned off in servers not in the operating state and to keep the number of powered on servers to an absolute minimum\*3. In, for example, software to build private cloud environments\*4, we contribute to energy saving by unified management of integration, operation, and monitoring networks, servers, storage and other systems and increasing the efficiency of resource utilization.

We are also working on developing software that achieves further environmental burden reductions by using the above-mentioned software to achieve energy savings.



Cloud infrastructure management software monitoring screen for server temperature and power monitoring

\*1 Using Systemwalker Desktop Patrol V14g

\*2 Using Systemwalker Runbook Automation

\*3 Using Systemwalker Centric Manager

\*4 For example, cloud infrastructure management software, ServerView Resource Orchestrator, and ETERNUS SF.