

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 fiscal 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 fiscal 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.

In fiscal 2008, 42 product families were recognized as Super Green Products.

* 3R design

Design based on the principles of reduce, reuse and recycle

Carrying Out Life Cycle Assessment (LCA)

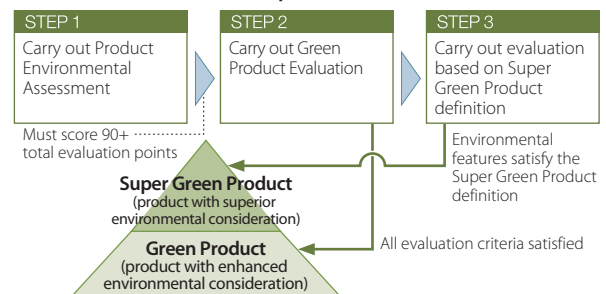
The Fujitsu Group has made it obligatory to perform LCA for all its green products. Calculation standards have been formulated for each product family, and the Group efficiently evaluates the environmental burdens of its products using its own database*.

Performing LCA 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 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 Ltd based on input-output tables.

Mechanism for Green and Super Green Product Evaluation



Super Green Product Development Achievements (Fiscal 2008)

Fujitsu Limited

- SIP telephones: IP Pathfinder / CL Series
- Network servers: IPCOM EX2200 / EX2200 duplex power source type
- SIP server IP-PBX: IP Pathfinder CS RM60S2 and RM65D2
- Real-time image transmission devices: IP-900 Series (IP900E, IP-900D, IP-910E and IP-910D)
- Optical transmission system: FLASHWAVE 9500
- Wireless base station equipment: W-CDMA-OF-TRX
- UNIX server: SPARC Enterprise M3000
- Notebook PCs: FMV-LIFEBOOK R8250, FMV-LIFEBOOK P8260, FMV-LIFEBOOK B8260, FMV-LIFEBOOK T8160 / T8260, FMV-LIFEBOOK TB14/B, FMV-LIFEBOOK E8260 / E8270, FMV-LIFEBOOK A8260, FMV-BIBLO NF/B50, FMV-BIBLO LOOX U/B50 and FMV-BIBLO LOOX R/B70 / R/B50
- PC Workstation: CELCIUS J360
- Desktop PCs: FMV-DESKPOWER CE/B90, FMV-DESKPOWER EK/B50, FMV-DESKPOWER F/B50 and FMV-ESPRIMO D5170
- PC Servers: PRIMERGY Econel 100S2, PRIMERGY TX120 S2, PRIMERGY RX300S4 and PRIMERGY TX150S6
- Blade server: PRIMERGY BX620 S4
- Mobile phones: Raku-Raku Phones (F884i, F883iS and F884iES)
- Hard disk drives:
 - Portable HD: HandyDrive 400 series
 - 2.5" SATA HDDs: MHZ2 BH series, MHZ2 BS series, MHZ2 BJ / MHZ2 CJ series, MHZ2 BK series, MHZ2 BT series and MJA2 BH / MJA2 CH series
 - 2.5" SAS HDDs: MBD2 RC series and MBE2 RC series

Subsidiary companies and affiliates

- Access Network Equipment: FA2132 GE-PON-ONU gigabit ethernet passive optical network system (Fujitsu Telecom Networks Ltd)
- Banking terminal: UBT-First (Fujitsu Frontech Ltd)
- Connectors: 10 Gbps capable test board and 260S-type connector (Fujitsu Component Ltd)
- Power source controller: IP Remote Power Source Controller (4-Port RPC2) (Fujitsu Component Ltd)
- Keyboards
 - Compact and Light 1618 for FA (Fujitsu Component Ltd)
- Touch panels: Cushioned Touch Panel (Fujitsu Component Ltd)
- Relays: FTR-F3P Relay, FTR-F1L Relay (Fujitsu Component Ltd)
- Thermal printers
 - FTP-63AMCL401-R (Fujitsu Component Ltd)
 - FI-32L (Fujitsu Isotec Ltd)
- Multiplex wireless device: NFRX-DT (Fujitsu Wireless Systems Ltd)
- Converter ICs: MB39C308 6-ch DC/DC converter IC for UMPC and MB39C309 7-ch DC/DC converter IC with integral SW FET (Fujitsu Microelectronics Ltd)
- FCRAM: MB81EDS256545 256-Mbit consumer FCRAM (Fujitsu Microelectronics Ltd)

* New products developed in fiscal 2008 are shown

Super Green Product Development Examples

**UNIX server
SPARC Enterprise M3000**



Energy savings
Achieves an achievement ratio in excess of 500% relative to the target values in Japan's Energy Conservation Law
57% reduction in operating power consumption (maximum power consumption)

3R design technology
Approximately 60% reduction in volume and mass per performance unit

**Blade server
PRIMERGY BX620 S4**



Energy savings
Achieves an achievement ratio in excess of 1,000% relative to the target values in Japan's Energy Conservation Law

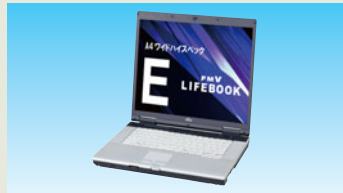
3R design technology
Mounting space reduced from 14U to 7U (1/2)
Number of cables reduced to from 70 to 30 (1/8)

**PC server
PRIMERGY TX120 S2**



Energy savings
Complies with International Energy Star Program (first compact server in the world to do so)
Power consumption reduced by 30% compared with conventional model

**Notebook PC
FMV-LIFEBOOK E8270**



Energy savings
Achieves an achievement ratio in excess of 1,000% relative to the target values in Japan's Energy Conservation Law

**Desktop PC
FMV-ESPRIMO D5170**



Energy savings
Power consumption reduced by 50% compared with conventional model
Over 30% reduction relative to International Energy Star power consumption value (45.4% when idle, 38% when asleep, and 66.5% when off)

**2.5" SAS HDDs
MBD2 RC series**



Energy savings
Power consumption reduced by 20% compared with conventional models
Achieves an achievement ratio in excess of 1,400% relative to the target values in Japan's Energy Conservation Law

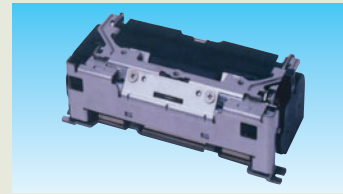
Chemicals
Halogenated (brominated, chlorinated, etc) substances and antimony have been eliminated from all the products' components

**Gigabit ethernet PON system
FA2132 GE-PON-ONU**



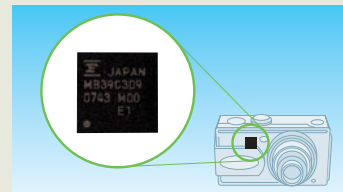
Energy savings
Operating power consumption reduced by 41% compared with conventional models

**Thermal printer
FTP-63AMCL401-R**



3R design technology
Volume reduced by 24% compared with conventional models

**Power source IC for digital cameras
MB39C309**



3R design technology
Chip area reduced by 38% through high-density integration

Energy savings
Cross-converter (voltage-raising function) power loss halved

WEB Table of Certified Super Green Products (in Japanese)
<http://jp.fujitsu.com/solutions/eco/products/sgp/>

With Our Customers

With Our Employees

For Our Shareholders and Investors

With Our Business Partners

With Global and Local Communities

For the Environment

Eco-Friendly Products

Disclosure of Environmental Information on Products

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 and scanners 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 International 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 web site

<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

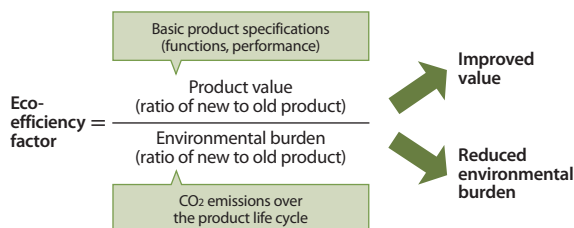
Reducing Product Environmental Burden by Using the Environmental Efficiency Factor

In fiscal 2007, the Fujitsu Group introduced the eco-efficiency factor*, which evaluates both increases in product value and reductions in its environmental burden at the same time. The factor is calculated for newly-developed Green Products in comparison with FY 2005 products.

On average, the factor was 2.9 for the Fujitsu Group as a whole for products developed in fiscal 2008, considerably exceeding that fiscal year's target of 1.75. Fujitsu will continue to work for improvements in environmental performance to maintain our eco-efficiency factor at a high level in future product development.

* 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 at even lower environmental burden.



Research and Development on Leading-Edge Environmental Technologies

Fujitsu and Fujitsu Laboratories, Ltd. carry out R&D on advanced environmental technologies to support the development of Green Products and Super Green Products. In addition to adopting bio-based plastics in notebook PCs for the first time in the industry, we have achieved a variety of successes, including developing (in April 2008) technology for real-time monitoring of the temperature distribution in data centers.

Developing Technologies that Help to Combat Climate Change

One of the energy-saving technologies that Fujitsu Laboratories, Ltd., has developed is an innovation, based on optical fibers, that enables detailed, real-time temperature distribution measurement in large datacenters containing many servers.

Through a single optical fiber, this technology makes it possible to measure simultaneously the temperature of over 10,000 areas in a facility, thereby enabling detailed visibility of temperature distribution in large datacenters. Combining this technology with an air-conditioning control system will enable finely-tuned air conditioning, allowing for more energy-efficient large-scale data centers. We intend to offer this as an air conditioning monitoring and control solution in the future.



Fujitsu Develops Technology Enabling Real-time Multiple-Point Temperature Measurement

<http://www.fujitsu.com/global/news/pr/archives/month/2008/20080404-01.html>

Developing Plant-Based Plastics

Although plant-based plastics impose a lower burden on the environment and help to reduce the consumption of petroleum resources, their use in products such as PCs has been problematical because of their poor heat resistance and lack of flameproofing.

Fujitsu has developed a new plant-based plastic with better heat resistance, and has incorporated it into its FMV-BIBLO NW90C notebook computer model (released in Spring 2009), where it forms 70% of the notebook's case.

Fujitsu will continue to develop versatile plant-based plastics applicable to a wide range of products and promote their more extensive use in electronic equipment. It will also pursue the use of non-food raw materials that do not compete with food crops



The FMV-BIBLO NW90C, which utilizes plant-based plastic

in the production of these plastics.

Management of restricted chemical substances in products

The Fujitsu Group designates substances that have been scientifically proven to be harmful to people and the environment and whose use is either prohibited or regulated by law as 'Fujitsu Group Specified Banned Substances.' We provide products that do not contain such substances by strictly prohibiting their use in our products and by working to eliminate them through our green procurement programs.

We also recognize that minimizing the risks posed by certain chemicals is of the highest priority in ensuring our customers' safety. For this purpose, we follow the precautionary principle and designate substances suspected of being harmful (Substances of Concern) as 'Fujitsu Group Specified Controlled Substances,' even when their harmfulness has not yet been fully demonstrated.

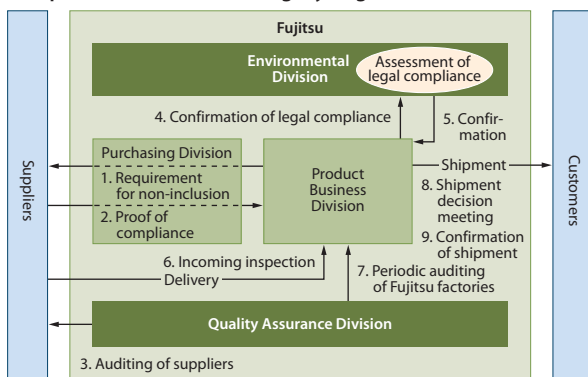
Compliance for Legally-Regulated Chemicals

The Fujitsu Group defines legally-regulated substances as 'Fujitsu Group Specified Banned Substances,' and provides products that do not contain them.

We have also established Fujitsu Group Green Procurement Standards and are strengthening our control of the chemicals included in our products by focusing on source control and advising our suppliers on how to achieve rigorous control of the chemicals in their products by constructing chemical management systems (CMS).

In response to regulations such as the RoHS*¹ Directive, we have taken systematic action covering the entire supply chain by constructing a system headed by our product business division (which is responsible for product operations) and including our quality assurance, purchasing, and environmental divisions, to manage chemical substances rigorously and comprehensively in all processes from design through to delivery.

Compliance Framework for Legally-Regulated Chemicals



* Fujitsu Group companies are also constructing their own frameworks based on the above

As far as our response to the REACH regulation*² is concerned, we regard this as an issue for the entire supply chain. Participating in the activities of industry associations such as the Joint Article Management Promotion-consortium (JAMP) and the Japan Green Procurement Survey Standardization Initiative (JGPSSI), we are working out how to construct a scheme for communicating information efficiently. In fiscal 2008, we promoted the compatibility of our internal structures and systems with the REACH regulation.

***1 RoHS Directive**
Restriction of the use of certain hazardous substances in electrical and electric equipment

***2 REACH Regulation**
Regulation concerning the Registration, Evaluation, Authorization, and Restriction of Chemicals.

Some Examples of Fujitsu Group Specified Banned Substances

- Asbestos
- Lead
- Polybrominated diphenyl ethers
- Cadmium
- Mercury
- Polybrominated biphenyls
- Hexavalent chromium
- PFOS
- Polychlorinated biphenyls

Controlling Substances of Concern

The Fujitsu Group defines Substances of Concern as 'Fujitsu Group Specified Controlled Substances,' and controls the amounts of such substances included in our products.

As far as PVC is concerned, we not only control the amounts included in our products but also require in our Green Procurement Standards that it be used as little as possible, and restrict its use in everything except sheathing for cables and insulating materials for electronic components.

We plan to carry out a review of substances in fiscal 2009 with a view to bringing them into line with the REACH regulation and other directives.

Some Examples of Fujitsu Group Specified Controlled Substances

- Brominated flame retardants (except PBBs and PBDEs)
- Some phthalic acid esters (DEHP, DBP, DINP, DIDP, BBP, DNOP)
- Polyvinyl chloride (PVC)

Using IT to Control the Chemicals in Our Products

The Fujitsu Group gathers information on the chemicals contained in the components and materials it purchases from its suppliers through its supply chain. It compiles this information on a database and operates a system devised to enable eco-friendly materials to be selected at the design stage.

It also offers an environmental business solution called PLEMIA/ECODUCE*, a software package that utilizes this in-house expertise. In fiscal 2008, the Group launched a version of this software compatible with the REACH regulation.

* The PLEMIA/ECODUCE website (in Japanese):
<http://jp.fujitsu.com/solutions/plm/pdm/plemia/option-04.html>

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