Press Information

We make sure

FUJITSU COMPUTERS SIEMENS

Fujitsu Siemens Computers Environmental Responsibility

If DNA had a colour, ours would be green

Recently announcing the decision to launch our first ever SCALEO Green PC to the consumer market by autumn this year, Fujitsu Siemens Computers became the first IT-vendor to offer a complete range of environmentally conscious products, for the datacenter, the office, to on the move and at home. From our Dynamic Data Center approach, PRIMERGY servers, the LIFEBOOK professional notebook, to our ESPRIMO professional PCs, we have integrated environmental technologies across our entire product offering. In completing the green product line-up, this exemplifies the spirit of environmental innovation and sense of responsibility that sit at the heart of the Fujitsu Siemens Computers business.

The launch of a mainstream green consumer PC will mark a new milestone in our long history of environmental care and design. Indeed, it was almost twenty years ago, in 1988, that we began the take-back and recycling of old IT equipment at our Paderborn site in Germany. Four years later we had developed the first set of internal guidelines for environmental product design, and by 1993 we had developed, and brought to market, the first Green PC in the form of the PCD-4LsI; one of many industry environmental firsts that were to follow.

To this day Fujitsu Siemens Computers continues building upon this strong history of environmental responsibility. We constantly seek to balance economy with ecology pioneering the integration of environmental concerns throughout the entire lifecycle of our products and business. Our vision and approach is exemplified in our 'We make sure' brand promised delivered upon by the unique 'sense of responsibility' that characterizes the Fujitsu Siemens Computers business.

Green Business Drivers

If concern for the environment and a sense of responsibility lay at the heart of our environmental achievements some twenty years ago, then today these ideals have even greater resonance for our business. Rapidly rising energy costs and heightened awareness are driving business and consumer demand for environmentally friendly conscious IT products and solutions. Consider that IT-equipment worldwide is responsible for 2% of CO2 emissions, corresponding to the same amount of CO2 emitted by global air travel, and the growing need for Green IT becomes evident[1].

Worldwide power requirements for data centers are rapidly growing and have now reached such levels that this can no longer be ignored. Power is emerging as an ever larger cost factor in terms of overall operating costs. It is vital that companies implement effective measures in order to sustainably improve energy efficiency in data centers.

Environmental issues are increasingly becoming a core element within all IT purchasing decisions, a recent study indicating that some 50% of consumers have chosen a product over another because of its environment-friendly packaging, ingredients, or advertising in the last two years[2].

This changing marketplace has presented Fujitsu Siemens Computers with a compelling business case to develop and expand its range of environmentally conscious products. Today our strategic focus and approach is underpinned by the view that environmental responsibility is compatible with improved business performance. As environmental awareness

[1] Source: Simon Mingay, Gartner
[2] Source: IPSOS MORI 2007

grows, so too will demand for environmentally responsible products. In fact the success of our Green business PC range was built upon the foresight that the business community would increasingly demand environmentally conscious IT products. Green PCs now make up some 75% of all our professional PCs sold.

Lifecycle Approach

At Fujitsu Siemens Computers 'Green' means more than just products alone. Environmental responsibility is about the services and processes that reduce the impacts of products. It also means a lot more than complying with the minimum legal requirements. We seek to go beyond basic minimum compliance, and always have done. From Dynamic Data Center solutions, holistic concepts for 'green infrastructures' to save energy, mobile solutions to reduce the need for travel, and also services that enable green IT by reducing complexity and improving processes, we think of it as improving our business, for a better planet.

That is why we adopt a product lifecycle approach in the management of our environmental responsibilities. This strategic approach carefully considers environmental impacts at every stage of the product lifecycle, from design, manufacture, use, right though to end-of-life recycling. It is an approach which avoids environmental tokenism and one that considers both the impacts of our operations as a business, as well as those of our products.

Development and Sourcing

Environmental protection has to start at the drawing board and go full-circle. That is why environmental standards are integrated into the Fujitsu Siemens Computers development process right from the product definition stage and included in all product specifications. The importance we attach to this is reflected in the fact that one of our company-wide Innovation Intents is devoted entirely to the design and manufacture of environmentally conscious products. We call it *'Saving the planet with green IT'*.

In practice design for the environment is achieved through our in-house Guideline, *'Environmentally Conscious Product Design and Development'* which applies to all Fujitsu Siemens Computers product development. Environmental Guideline FSC03230 covers a range of environmental aspect, and primarily aims to reduce waste, minimize energy consumption and eliminate hazardous substances.

In order to ensure our business partners live up to these environmental standards, guidelines within FSC03230 also form part of every Master Purchasing Agreement with Fujitsu Siemens Computers suppliers. As development proceeds, checks are routinely conducted to ensure key suppliers adhere to standards incorporated within all Master Purchasing Agreements. New product lines, meanwhile, undergo analysis to evaluate their recyclability and calculate related costs. Information arising from this analysis is channeled into our product planning.

Chemical Use

Our policy on the use of chemicals and our commitment to eliminating the use of harmful and potentially harmful substances in our products and production processes is also captured in Guideline FSC03230.

Our business strictly forbids the use of banned or restricted-by-law substances that are scientifically proven to be harmful to human health and the environment. In the event that substances may be harmful, we adopt the precautionary principle. That is to say, even if the full extent of harm of a particular chemical has not been definitively established, Fujitsu Siemens Computers avoids using it and replaces it with a harmless substitute. Guideline FSC030230 is constantly updated to reflect these changes in hazardous substances prohibited, and those to be avoided.

Fujitsu Siemens Computers is fully committed to phasing out the use of polyvinyl chlorides (PVC) and brominated flame retardents (BFRs). We do not use PVC's in the housing or mechanical parts of our products and they are only employed when there is no acceptable substitute. However, long-term, we are seeking the complete elimination of

PVC, and the company is working in conjunction with its suppliers and other partners to source alternative substances[3]. BFRs are neither used in housings nor in formed plastic parts weighing over 25 grams, which exceeds the requirements set out in the European RoHS directive. We have reduced the chlorine and bromide content of the printed circuit boards in our Green products from 12 percent to less than 0.15 percent and we are currently working with suppliers to eliminate the use of halogen in favour of alternatives.

Production and Logistics

Fujitsu Siemens Computers is fully committed to a global strategy which seeks to manufacture all products in a sustainable way, particularly at our production facilities in Augsburg and Sömmerda, Germany.

Here we have achieved substantial savings in power and materials through energy and environmental management initiatives, with both the Augsburg and Sömmerda sites certified to the globally recognized environmental standard ISO-14001. We invest substantially in energy savings measures at these facilities each year, making the most of raw materials, energy and water during production through techniques such as the incorporation of recycling loops into assembly lines.

Numerous measures introduced since the early-1990's have cut the electricity required to manufacture a PC at Augsburg in half, and power consumption at the plant has declined by 60 percent during the same timeframe that production has risen resulting in a total reduction of C02 emissions by 3,300 tons.

Some of the processes we use to lower energy include innovative production measures such as heat recovery techniques, energy-savings lighting and motion detectors, concrete core cooling, well-regulated air compressors and air conditioning systems with circulating heat exchangers and advanced building control systems.

Inbound and Outbound Logistics

Fujitsu Siemens Computers' ability to transport components, materials, and finished products to and from our production facilities in Germany on time, and within budget, plays a crucial role in the success of our business. However, at the same time these sophisticated logistical processes inevitably result in negative environmental impacts.

We continuously seek to improve and optimize inbound and outbound logistical efficiencies in order to minimize these environmental impacts. For example we encourage our suppliers to reducing packaging, and we always use sea-freight where possible. In fact both of these remain a core part of supplier selection criteria. For outbound logistics we look to optimize packaging, bulk-package on large accounts, and we even direct shipments straight to customers thereby reducing overall product miles. Of course this saves us costs too; another example of how environmental responsibility makes good business sense.

Product and Energy Use

Energy saving has emerged as one of the most critical elements of the environmental and Information Technology agendas - the unavoidable fact that many of our most significant environmental impacts occur during the product use phase. Rapidly rising energy costs and the climate damage caused by rising global CO2 emissions have placed the need for energy efficiency at the forefront of environmental care programmes within the IT and Technology sector. In fact recent figures make clear that for approximately each $1 currently spent on computer hardware, a further $0.5 will be spent on electricity. Over the next four years this figure is expected to rise by 54%[4].

[3] In December 2006 we joined the U.S Environmental Protection Agency's (EPA) Design for the Environment Programme (DfE), a multi-stakeholder partnership working to reduce the risk to people and the environment by preventing pollution. For more information on our role within the U.S EPA go to: http://www.fujitsu-siemens.com/aboutus/sor/stakeholder_engagement/usepa.html

[4] Source: IDC, Worldwide Server Power and Cooling, 2006 - 2010

Energy Efficient Products

Since the introduction of the world's first green PC in 1993, Fujitsu Siemens Computers has been recognised as a leader in the development of energy efficient professional products. We have adopted a company-wide strategy to define power requirements and save energy at every step of the development process. This strategy is enforced by our in-house development Guideline FSC03230.

This guideline also mandates the business to source energy efficient components from suppliers. For instance the use of high performance processors such as Intel®Core™2Duo and AMD Athlon X2 together with Fujitsu Siemens Computers technology has enabled us to cut the energy consumption of professional PCs and professional notebooks by 50% in the past year.

As energy ratings continue to grow in importance, magnified by the EU Energy using Products (EuP) directive due to be implemented as of spring 2008, our leadership approach has continued. We currently support the implementation framework for PCs, notebooks and computer displays. Our commitment to energy efficiency was reflected in November 2006 through our active contribution to the definition of energy efficiency measurements at the Club of Rome Symposium in Helsinki. In addition, we have also set up an internal energy-savings project group to look at innovative ways of reducing energy consumption through features such as intelligent power management. We have made good progress. Intelligent power management is in fact already implemented in DeskView Energy - our desktop management software for business clients. It saves up to 15% of energy within a network by actively enabling power management settings.

Our progress in the development of energy efficient products is embodied by our ESPRIMO range introduced in 2005. By May 2007 our ESPRIMO E5615 EPA was Energy Star 4.0 compliant boasting a power supply efficiency of 80% and energy savings of up to 25% when compared to other non-compliant systems. ESPRIMO E5925/5720 and ESPRIMO P5925/5720 are now also Energy Star 4.0 certified. Additional savings can be made through the use of Fujitsu Siemens Computers' switched monitor outlet reducing power consumption of the display by half. This means that choosing an ESPRIMO E series with a switched monitor outlet could save an organisation with 500 PCs € 21,500 over three years[5] and the environment 70 tons of CO2.

Our professional Notebook range is equally well equipped to save energy. The extension of battery run time has been a focus for years and has led automatically to lower energy consumption. All LIFEBOOK professional notebooks carry an EcoButton which automatically extends battery life by powering down energy consumption of key components and the brightness of the display. The LIFEBOOK C1410 and LIFEBOOK S7110 are the first and only notebooks to have been awarded the Nordic Swan certificate through their low energy consumption. Furthermore, the LIFEBOOK P7230 and LIFEBOOK Q series will carry the Energy Star 4.0 certification.

Another example is our new TX 120, the most energy efficient server in the world. The TX 120 uses 40% less power than other standard tower servers with a maximum power usage of 163 Watts. This will be further improved in the near future. This server boasts a 33% reduction in environmental footprint, the world's smallest server footprint, and a 25% reduction in volume use compared to other current 1-socket servers in the market. Through advanced cooling technologies it also achieves a significant reduction in noise levels.

Displays are also a consumer of energy and should be considered as part of any energy-saving initiatives. CRT monitors were phased out by Fujitsu Siemens Computers in 2006; the latest TFT displays consume only a fraction of the energy needed by these older models - on standby typically less than 1 Watt per day and in operating mode no more than 32 Watts per day. This could save a user up to €4.44 per year per monitor – which might not sound like much but just how many monitors do organizations have running today? All SCENICVIEW and SCALEOVIEW displays from Fujitsu Siemens Computers qualify for the Energy Star 4.0 Tier 2 certification (with the exception of the 24" model) and our LCD displays are TCO'03 certified. Our Premium and Business LCD monitors also comply with the standards set by the Blue Angel certification.

[5] For more information on our Energy Efficient products, including energy saving tips go to: http://www.fujitsu-siemens.com/aboutus/sor/energy_saving/prof_desk_prod.html

Data Center Approach

Fujitsu Siemens Computers is also taking the lead on driving best practice in the energy savings of data centers. Here for example a standard server costing 2,000 Euros will consume 350 Euros of energy per year. With energy resources growing scarcer, and energy prices rising, this means data center energy costs over the lifetime of a server could easily exceed hardware costs sometime in the future. We have therefore adopted a three-step data center strategy which seeks to:

1. Reduce Consumption
   - Reduce power consumption of CPUs and I/O chips by improved chip technologies and manufacturing processes
   - Improve computing performance per Watt of power dissipation
   - Increase efficiency of server power supplies

2. Optimize Datacenter infrastructure
   - Improve cooling concepts
   - Improve power infrastructure
   - Energy recovery in the data center

3. Effective use of resources
   - Fully utilize existing computing power through consolidation onto fewer and higher performance systems
   - Improve utilization of IT systems with virtualization technology
   - Flexibly control power consumption by means of dynamic IT solutions
   - Actively seek the appropriate balance between power costs and optimal server performance

Within this overarching strategy we are actively pursuing a number of micro tactics to increase the energy savings of data centers. This includes enhancing server technology through improved chip technologies and manufacturing processes.

Optimizing the utilisation of existing hardware and datacenter infrastructure is a core element of our approach to energy reduction. Here we make sure that systems are fully utilizing existing computing power through the use of virtual machines. This enables close to a 100% power utilization rate. Systems to automatically turn off unused hardware have also been introduced combined with a reduction of CPU clock and I/O bandwidth, the elimination of power peaks in load profile and reduced dimensioning of cooling and power infrastructure within the datacenter.

The final element of our approach to energy reduction involves the effective use of resources. This includes the recovery of energy within the datacenter; energy that would otherwise be lost. We aim to encourage the use of heat produced by our datacenters for office heating when needed, and the conversion of lost heat to electrical power. We also actively limit server power consumption accepting a loss in performance.

Besides this three-step approach, we have also adopted a strategy for the Dynamic Data Center itself. Our approach aims to keep energy costs at a minimum by transforming static data centers into Dynamic Data Centers. We achieve this through a combination of methods including the creation of pools of computer and storage resources, better energy utilization through Blade Server and Virtualization Methods, and the integration of IT management tools in order to react faster to server resource allocation needs.

Thermal control is another critical aspect of data center power management, the unavoidable fact that hot components fail more quickly than others. Fujitsu Siemens Computers has addressed this issue through its PRIMERGY RX300 S3 server, a radical, cool-safe design which cuts temperatures by ten degrees Celsius; doubling lifetime and stabilising performance.

Services: Aiding the transformation to the Green Data Center and the Green Office

Services across the IT lifecycle help organizations to manage their IT operations and can assist in moving to a Green IT environment. Professional IT services help organizations to align their IT infrastructure with the business goals and

ensure the most effective use of IT. Through effective management, complexity can be reduced and efficiency increased, for example, through better management of systems in use at non-peak times. Across the office our services can also aid in decreasing power consumption by managing the shut down of unrequired systems overnight and by reducing paper through our Print Lifecycle Management. All to the benefit of the environment, and the company.

Remarketing, Recycling and Recovery

Fujitsu Siemens Computers supports the principle of Individual Producer Responsibility (IPR); that we as a business have a responsibility to account for, and manage the end-of-life of our products. Whilst we see that even the most dedicated producer cannot meet the needs and requirements of all stakeholders worldwide in a way that is viable financially, logistically and environmentally, we are committed to working with the industry at large to overcome these difficulties.

In fact we have a strong track record on the re-use, recycling and recovery of electrical and electronic equipment. It starts at the design stage where our environmental Design and Development Guideline FSC03230 ensures that all products made lend themselves well to repair, potential upgrading, reuse, disassembly and recycling. The annual Environmental Report of the Recycling Center in Paderborn underlines the success of the established concept[6].

Paderborn

The remarketing and recycling of Fujitsu Siemens Computers' products have taken place at the company's Paderborn[7], Germany facility since 1988, when the site first opened as Nixdorf Computer AG's storage facility for used equipment.

Today, around 65 disassembly staff dismantle waste equipment using state-of-the-art methods. The center deals primarily with servers, PCs and peripheral devices, but also equipment such as automated teller machines. It has a capacity of around 8,000 tons of waste equipment a year. Here approximately 20 percent of Fujitsu Siemens Computers-branded equipment is reused, of the remainder 98% is recovered and only two percent has to be disposed. The processes employed by Paderborn far exceed the requirements set out in the Waste Electrical and Electronic Legislation (WEEE) directive[8]. The WEEE allows a disposal rate of up to 25%.

Non WEEE markets

In markets without Waste Electrical and Electronic Legislation (WEEE) legislation - legislation setting particular requirements upon producers for the collection, treatment, recycling and recovery of equipment in Europe - Fujitsu Siemens Computers is voluntarily planning actions to find environmentally sound solutions to take-back and recycle its own products. Our parent company Fujitsu is responsible for sales in regions outside Europe, Middle East and Africa (EMEA), where it is initiating its own take-back and recycling programs

A Greener Future

Fujitsu Siemens Computers' commitment to environmental care stretches back some twenty years, and will continue in the years ahead. Yet whilst our motivations to practice environmentally responsible business remain the same, we believe we can, and should, play an ever larger role in promoting responsible business practice both within the industry, and more broadly to consumers of our products.

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[6] http://vilpublic.fujitsu-siemens.com/vil/pc/vil/whitepaper/english/Environmental_Report_2005_2006.pdf

[7] This recognized waste management facility is integrated in the group-wide management system of Fujitsu Siemens Computers on the basis of DIN EN ISO 9001 and DIN EN ISO 14001.

[8] For a live demonstration of how we remarket and recycle at the Paderborn site visit our website on: http://www.fujitsu-siemens.com/aboutus/company_information/business_excellence/environmental_care/recycling.html

That is why we recently launched our Data Center Challenge in the UK[9], publicly challenging FTSE 350 companies to reduce data center power costs, operating costs, and physical footprint by 40%. We have pledged that for every datacenter where we fail to achieve a 40% reduction we will donate £10,000 pounds to charity.

Ultimately we see that making an environmental decision must be easy. Given the right information consumers and business will make green choices. As we continue integrating environmental care into our business it is therefore our responsibility to ensure we do all we can to promote environmental solutions where possible.

Green at a glance

Sustainability Challenge	Fujitsu Siemens Computers Response
Remarketing, Recycling and Recovery	• Statement and Support for Individual Producer Responsibility • Paderborn - 20% of all own brand products reused • 98% of the remainder recycled • Take-back and exchange programmes in 30 countries • Planning actions for own take-back and recycling outside of WEEE markets
Energy Efficient Products	• Company-wide strategy to define power requirements and save energy (based on EuP and Guideline FSC03230) • ESPRIMO professional PC • LIFEBOOK professional notebooks • Data Center Products, PRIMERGY RX300 S3 • Data Center energy use awareness raising, UK
Green Products	• FUTRO C Series, thin clients • ESPRIMO C, ESPRIMO E and ESPRIMO P professional PCs • ESPRIMO Q Series, mini PC • CELSIUS W350, CELSIUS M450 and CELSIUS V840 workstations • LIFEBOOK S7110 professional notebook – certified with Nordic Swan • LIFEBOOK P7230 and LIFEBOOK Q2010 – compliant to Energy Star 4.0 • SCENICVIEW Business Line displays • First SCALEO Consumer PC (Autumn 2007) • PRIMERGY TX 120
Manufacture and Logistics	• Paderborn/Augsburg - IS014001 • Augsburg - 60% cut in energy consumption since 1997, resulting in €500,000 saved on energy. C02 emission reductions of 3,300 tons • Sea freight, reduced and optimized packaging
Chemicals Management	• Precautionary Principle Defined and Adopted • Committed to eliminating the use of harmful and potentially harmful substances in products and production processes
Design for the Environment	• Environmentally Conscious Product Design and Development Guideline FSC03230 • Guidelines on reducing waste, minimizing energy consumption

[9] To see the full details of the challenge go to http://www.fujitsu-siemens.co.uk/rl/news/070607.html

	and eliminating hazardous substances. • Applies to all suppliers
Stakeholder Partnerships	• WWF-Germany • U.S Environmental Protection Agency - 'Design for Environment Programme' • Green Grid • OKO Institute

About Fujitsu Siemens Computers:
Fujitsu Siemens Computers is the leading European IT provider with a strategic focus on next-generation Mobility and Dynamic Data Center products, services and solutions. With a platform and services portfolio of exceptional depth, our offering extends from handhelds through desktops to enterprise-class IT infrastructure solutions and services offerings. Fujitsu Siemens Computers has a presence in all key markets across Europe, the Middle East and Africa, with the services division extending coverage up to 176 countries worldwide. Leveraging the strengths, innovation and global reach of our joint shareholders, Fujitsu Limited and Siemens AG, we make sure we meet the needs of customers: large corporations, small and medium enterprises and private users. To meet international standards for corporate social responsibility, Fujitsu Siemens Computers is a member of the United Nations Global Compact.

For more information on Fujitsu Siemens Computers, please visit: www.fujitsu-siemens.com.

PR Contacts:
Judith Raddatz / Helga Sporer-Hahn
Joint Heads of Corporate Relations

Fujitsu Siemens Computers GmbH

Telefon: ++49 89 62060-4438
Mobile Helga Sporer-Hahn: ++49 172 2876593
Mobile Judith Raddatz: ++ 49 151 12502757

Helga.sporer-hahn@fujitsu-siemens.com
Judith. raddatz@fujitsu-siemens.com