



Fujitsu Global Sustainability Story

# Sustainability Our Heritage Your Future

shaping tomorrow with you



# Shaping the future of sustainable ICT

Profitability and environmental impact are now inseparable drivers of business strategy

»Tomorrow's business leaders will be leaders in sustainability; they will understand the vital importance of an integrated sustainability strategy to underpin profitability and environmental health.«

**Alison Rowe**, Global Executive Director Sustainability, Fujitsu

For a secure and prosperous future, decision makers must meet the needs of their enterprises and stakeholders today, while protecting the resources that will be required in the future.

All organizations, be they private or public sector, should now be integrating sustainability into their strategic business models. The ability to measure and contain energy and resource use is essential if corporate and environmental costs are to be reduced throughout production and usage cycles.

Identifying new business opportunities and realigning core functions to reduce carbon intensive activities must be a serious item on the agenda of every enterprise.





### Global Action

Clearly, current levels of resource use are unsustainable. According to the WWF Living Planet Report 2010<sup>1</sup>, based on current consumption levels, we will need the equivalent of two planets by 2030.

There is an emerging awareness of how seriously threatened the planet's water systems, air quality and biodiversity are. There is a corresponding view that governments and industry should take responsibility for solving these global issues.

Encouragingly, there is a growing proportion of the population willing to buy environmentally friendly products and services. The uptake of sustainable practices is accelerating across the corporate sphere, as world economies move to create carbon marketplaces and regulators introduce incentive schemes and emission reduction targets.

More than 30 countries currently operate carbon markets, with many more developed nations designing emission reduction schemes for ratification by 2012. In December 2010 the World Bank announced it will fund carbon markets in developing nations.

### The Deep Connection Between Profitability and Genuine Corporate Citizenship

Since our establishment, Fujitsu has appreciated the deep connection between profitability and genuine corporate citizenship. Companies that share our vision are being acknowledged for their forward thinking. Like us, their evolving, sustainability business models are driving the identification of new opportunities and the creation of differentiated services. Our customers' leaner operations, supported by our proven solutions, are delivering improved business performance, cost savings, strong brand stewardship, corporate cultural responsibility and greater customer loyalty.



The background of the slide is a photograph of several large, traditional Japanese umbrellas (wagasa) hanging from a wooden structure. One umbrella is red, and the others are white. The scene is set outdoors, with a building and some greenery visible in the background.

# Sustainable ICT – the opportunities

The ICT industry is in the unique position to be able to build and deploy the enabling technologies

»We see ICT as a powerful tool in reducing our customers' burden on the environment. ICT has the capacity to contribute to emission reductions of 15% by 2020. We will continue to strive to create a prosperous, low-carbon society.«

**Alison Rowe**, Global Executive Director Sustainability, Fujitsu





As the reliance on technology grows, ICT has become a major contributor to rapidly increasing greenhouse gas (GHG) emissions. Worldwide, ICT is currently responsible for 3 percent of GHG emissions, compared to 2006 levels, with this figure predicted to rise to 6 percent by 2020<sup>2</sup>.

At the enterprise level, energy sourcing, use and pricing, are key issues, as:

- ICT is responsible for up to 60% of an organization's energy consumption
- 55% of the ICT emissions profile comes from outside the data center<sup>3</sup>
- Research has revealed the changing ICT cost structures – in the US alone, companies spent approximately US\$5.8 billion powering servers and a further \$3.5 billion keeping them cool, against an initial purchase of \$20.5 billion<sup>4</sup>

The global ICT industry must be at the forefront of innovation to ensure it can fulfill its potential to drive emission reductions by more than 15 percent annually by the end of the decade, as identified in the SMART 2020 Report<sup>5</sup>. The ICT industry is in the unique position to be able to build and deploy the enabling technologies, in areas such as smart grids, smart logistics, smart transport and social applications, to enable other industries to make significant reductions in emissions.





# Sustainability – 1938 to 2100

With a dual focus of reducing our own environmental impact and commitments to reduce our customers' greenhouse gas emissions

## What Sets Us Apart

At Fujitsu, we view sustainability as a guiding principle for how we work with customers and within society as a whole. It is a commitment dating back to 1938 when we created a parkland environment for our first factory in Japan.

More than simply words on paper, ours is a long term, quantified sustainability vision taking us to 2100, with target milestones set to the year 2020. Our Environmental Protection Program, initiated in 1993 and updated regularly, is now in its sixth phase and is the next step toward realization of our medium term environmental vision: Green Policy 2020.

Our Green Policy 2020 provides a vision for a prosperous, low carbon future. This policy has the specific goal of reducing global customer GHG emissions by 30 million tons by 2020, by offering advanced, energy efficient technologies and sustainable solutions.

One example is IBUKI, the world's first dedicated satellite to monitor the concentrations of global carbon and methane across the planet. Fujitsu developed the highly advanced satellite orbit control system responsible for managing and storing the monitoring data, including the visualization of greenhouse gas distributions.

## International Recognition

Global recognition by leading analysts of our comprehensive program, detailed strategies and policies to 'make every activity green', clearly identifies us as a world leader in sustainability.

A focus of our US\$2.5 billion annual R&D budget includes the creation of thought leadership, development of energy efficient products, and associated Green ICT services portfolio. This ensures our customers are able to select from the most advanced and highly rated technologies available in the market.

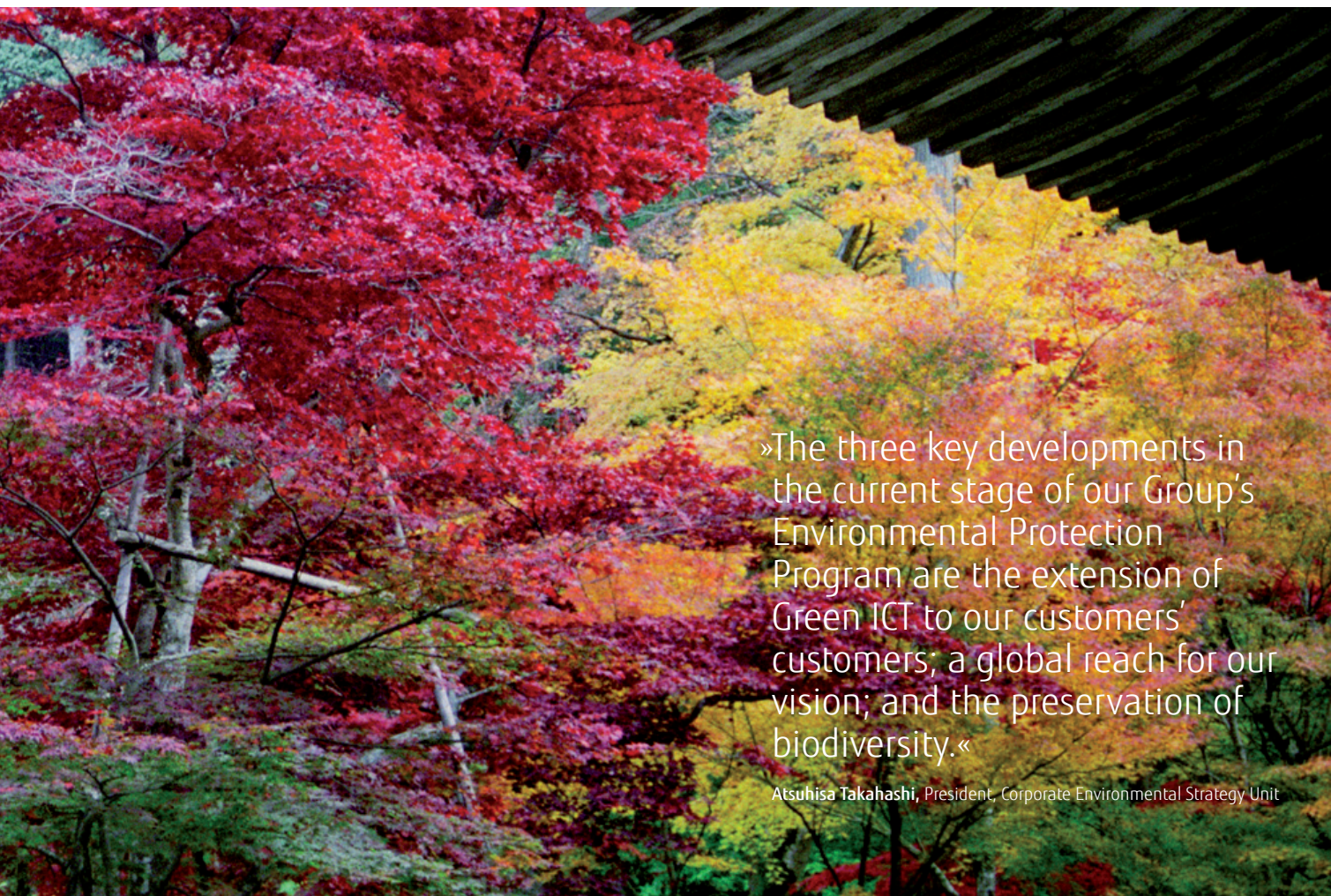
Fujitsu is recognized as an active and influential member of organizations which are committed to achieving quantifiable improvements to society's environmental impact, including:

- Dow Jones Sustainability Index
- SAM Sustainability Yearbook, 2011 Silver Class
- Green Grid
- UN Global Compact
- Climate Savers
- FTSE4 Good Global Indexes
- Carbon Disclosure Project

## Specific Actionable Targets

The essence of Stage VI of our Environmental Protection Program, launched in 2010, lies in successfully achieving both economic and environmental performance through the development of Green ICT solutions, which combine exceptional technologies with shared expertise. With this capability we will take Green ICT to the next level, to contribute to customers and society on a global scale; and we have enhanced our commitment to the preservation of biodiversity through the development of clear targets. We will continue to apply directives to reduce our own environmental footprint; and promote the strengthening of environmental governance.





»The three key developments in the current stage of our Group's Environmental Protection Program are the extension of Green ICT to our customers' customers; a global reach for our vision; and the preservation of biodiversity.«

Atsuhisa Takahashi, President, Corporate Environmental Strategy Unit

#### Some of our performance targets by 2012 include:

- Green ICT is to reduce cumulative GHG emissions by 15 million tons
- Products that contribute to reduced environmental footprints through low energy and resource demands must comprise 30% of all new developments and the environmental efficiency must be raised to 2.5 times the 2008 value
- We are to sustain 90% resource reuse rate of business ICT equipment globally at Fujitsu recycling centers

#### Measurement, Reporting and Realizing the Benefits

»The essence of Green ICT lies in successfully achieving both economic and environmental performance.«

Atsuhisa Takahashi, President, Corporate Environmental Strategy Unit

Every sustainability initiative undertaken by Fujitsu is developed with a solid link to reporting and business benefits. We have been influential in the push to design much needed international standards and measurement methodologies to enable the calculation of a comparable and absolute value for environmental footprints.

Our involvement in initiatives such as the Green Grid, the UK Carbon Trust Carbon Footprinting Working Group and the EU ICT4EE working groups, will deliver improved definitions for the environmental efficiency of data centers and ICT solutions.

#### Disclosure

Fujitsu takes accountability and transparency very seriously. Measurement criteria are provided for all sustainability developments and submitted for independent performance review. Since 1996, as part of our commitment to transparency, Fujitsu has published an annual Sustainability Report which describes the thinking, efforts and accomplishments of group operations, based on the sustainability vision and principles of our global organization.

In a growing number of countries we provide data relating to customer emissions and waste targets including annual reporting on carbon savings achieved; savings by weight of equipment and consumables not sent to landfill; and water, energy and consumables used.

We are leading the way with our 'Environmentally Conscious Solutions' certification process which formally measures the before and after effects of adopting our (currently) more than 200 certified solutions.

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





# Reducing emissions OF ICT

We have a comprehensive suite of products and solutions that contribute to our 3 million ton emission reduction target by 2012

## Green Policy Innovation

Through our Green Policy Innovation we aim to reduce GHG emissions worldwide by 15 million tons, over the four year period 2008 to 2012. Three million tons will be reduced through energy efficiency, reduced size and waste of our products, which we refer to as 'OF ICT'. The remaining 12 million tons will be achieved through the application of our technology solutions to reduce emissions such as sustainable data centers, cloud computing, smart grids and intelligent solutions for the human centric society. We refer to these as 'BY ICT' solutions.





### Energy Efficient Products

Through our procurement directive and development of our own energy efficient products, we aim to supply a comprehensive list of highly rated products in terms of; low energy consumption, use of eco-friendly materials and technologies, and their design under the principles of reduce, reuse and recycle.

We have been at the forefront of designing and producing products which are built to trusted international standards such as ECMA, EPEAT and ENERGY Star.

From our technology labs in Japan and Germany come many of our world beating innovations. This includes the Green IT 2009 award winning Blade Server PRIMERGY BX900, which features 90 percent+ PSU-efficiency, ServerView power-management software, and Cool-safe™ cooling technology, to generate 40 percent savings in power consumption through server consolidation when compared to traditional rack mounted servers.

Fujitsu was also first to market with a true 0 Watt PC in off/ hibernate mode which offers up to 89 percent efficiency improvements, and its switched monitor outlet provides savings of up to 10 percent of display energy consumption. These are just some examples of the energy efficient products we have brought to market.



# Reducing emissions BY ICT

We have the capacity now to deliver industry-specific customer solutions that contribute to our 12 million ton emission reduction target by 2012



## Building a Sustainable Global Data Center Network

Fujitsu's global network of more than 90 data centers, located in every major geographic region from the UK and Germany, to the USA, Australia, Singapore and Japan, is a considerable investment in support of our emissions reduction targets.

They are designed and managed under a stringent set of environmental principles which include:

- Building design and layout
- Visualization and sensor network
- Optimizing energy and cooling
- On-site renewable energy
- Energy linking
- The ICT equipment

At Fujitsu's Tatebayashi Data Center, technologies such as solar panels, high efficiency power and cooling systems, real-time

temperature and air flow monitoring and data center energy monitoring are all delivering significant reductions in energy consumption. The GHG emissions saved is up to 40 percent, compared to conventional data centers. In the UK, our North London facility is the first accredited Tier III data center in Europe operating at a Power Usage Effectiveness (PUE) of 1.4.

### UK Data Center

In 2007 Fujitsu opened one of Europe's leading facilities with the commissioning of a high specification green data center. The London data center returns a PUE of 1.4 and features evaporative water towers, Diesel Rotary Uninterruptible Power Supply (DRUPS), free cooling and energy simulation. It is achieving annual savings for our customers equivalent to the electricity required to power up to 6,000 homes, or 10,000 tons of GHG.





### Global Cloud Services


Cloud has the very real potential to provide the turning point for spiraling ICT related energy costs and GHG emissions. Importantly, it will be the platform from which intelligent technologies can be delivered for the rapid deployment of innovations, which will slow the degradation of water systems, air quality and biodiversity.

When implemented to the scale of Fujitsu's model, Cloud is inherently more sustainable than private, on premise systems as efficiencies are scaled across multiple customers. Our high availability, utility style computing model allows organizations to harness the power of the latest ICT infrastructure, platforms and applications, to drive rapid innovation and efficiency.

»The innovation capabilities now being enabled by Cloud will see the potential realized for our human centric solutions to contribute to a sustainable future. We have a genuine belief that ICT can and must be a highly accessible and efficient commodity to maximize the positive changes in human activity which is taking place around the world.«

Atsuhisa Takahashi, President, Corporate Environmental Strategy Unit





# The very near future – intelligent, human centric society

Intelligent ICT learns from human activity and  
accumulated experience

»We are harnessing computer sciences  
to contribute to the creation of a  
networked society that is rewarding  
and secure, to bring about a  
prosperous future.«

Masami Yamamoto , President, Fujitsu Limited

## The Intelligent Human Centric Society

As we enter a new era, humanity faces many challenges including climate change, peak oil, aging societies, increasing population, increased demands for energy, natural disasters, water stress and loss of biodiversity.

We are focused on how ICT can help combat such issues and enable the transition to a prosperous and low carbon society.

Fujitsu's concept of a human centric society makes full use of intelligent social applications sitting in the cloud, to counter challenges facing humanity. Smart Grids and intelligent systems of all kinds will create smart cities combining energy conservation with innovation.





In a smart city, sensors and networks collect the vast quantity of data produced by residents' daily activities. This data collected will be analyzed and transformed into intelligence by ICT. The intelligence will save energy and provide people with a networked, convenient and secure society.

By example our solutions for the 'Human Centric Society' using cloud-based sensor-networks include:

#### **Smart Traffic Cloud**

Sensor networks gather real-time information on road and traffic conditions allowing greater efficiency and safety of vehicle and pedestrian flows.

#### **Smart Agriculture Cloud**

By capturing data on the climate, soil and water, as well as crop conditions through field located cameras and sensors, it will become possible to devise new business models that secure better harvest yields with lower expenditures of labour and energy.

#### **Smart Grid**

In the energy sector, we are working to optimize power generation and distribution through solutions based on our sensing and artificial technologies in the cloud. The combination of distributed autonomous networking and middleware technologies, collectively named WisReed, are designed to meet high quality communications, flexibility, scalability and cost efficiency requirements. By introducing smart metering services, using the autonomous formation of networks, with millions of sensors to predict the use of electricity, is maximizing network capability, efficiency and reliability.

#### **Smart Water Cloud**

Like Smart Grid for energy networks, facilitates better capacity management by building intelligence about supply and demand allowing optimum efficiency of water production and use, and facilitates real time information gathering on environmental aspects such as water quality and drainage.





# As the world sees our sustainability efforts

We are delivering proven sustainable solutions across every industry, every day

## Working With Our Customers

### Toyota Australia

Toyota Australia's Green ICT strategies were formulated with Fujitsu Australia's consultants to meet the targets of its five year environment plan. Fujitsu conducted indepth interviews and advanced modelling to build a clear picture of the current ICT strategy against its environmental impact. Based on this assessment, a number of actions, projects and programs were specified to achieve a potential 43% cost reduction and greenhouse gas emission saving.

#### Results:

- Savings potential of 43% with respect to cost, GHG and electricity consumption through the implementation of office-based ICT equipment initiatives in the first year with no capital investment
- A long term plan to achieve further reductions through investment in assets and infrastructure
- Promotes the key role ICT will play in meeting Toyota's corporate environmental objectives, including GHG emission reduction targets
- Business has greater understanding and emphasis of Green ICT

»Our environmental responsibilities are paramount to our vision of a sustainable organisation. When selecting organisations to partner with we look for this shared vision as one of our criteria and that made Fujitsu the natural choice.«

James Scott, CIO, Toyota Australia





### Our Long Term Commitment

Increasingly, Fujitsu's sustainability credentials are being acknowledged by eminent environmental and global research bodies. We have been identified as having a well structured and long term environmental strategy that clearly demonstrates our commitment to change.

Fujitsu is clear in our policies and ambitious in our targets for driving our own sustainability, that of our customers and society as a whole. The quests for sustainability of corporate activity and of the environment are now inextricably linked.

Be it the reduction of consumables, server virtualization and desktop consolidation, the dramatic reduction in energy and water use by commissioning our data center services, the whole of life responsibility for our deployed technologies, or the development of human centric applications, Fujitsu is delivering proven sustainable solutions across every industry, every day.

We will continue to be at the forefront of the transition to a prosperous, low carbon society.

»Recognition is a truly valuable incentive to  
push on and achieve even more.«

**Alison Rowe**, Global Executive Director Sustainability, Fujitsu

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<sup>1)</sup> WWF Living Planet Report 2010 – [http://wwf.panda.org/about\\_our\\_earth/all\\_publications/living\\_planet\\_report](http://wwf.panda.org/about_our_earth/all_publications/living_planet_report)

<sup>2)</sup> Fujitsu Green IT Global Benchmark Report, 2010

<sup>3)</sup> Green IT 1.0 Technologies, Q2 2009, Forrester Research, Inc., June 12, 2009

<sup>4)</sup> IDC analyst Michelle Bailey, figures relate to US results in 2005

<sup>5)</sup> SMART 2020: Enabling the Low Carbon Economy in the Information Age, 2008 – [www.smart2020.org/publications](http://www.smart2020.org/publications)





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