

Fujitsu Semiconductor Limited, Aizuwakamatsu Plant Environmental Report

2011



1. Welcome



Aizuwakamatsu Plant
Plant Manager Hitoshi Hori

The Aizuwakamatsu Plant is one of the Fujitsu Semiconductor Group's production centers, situated in Aizuwakamatsu City in Fukushima prefecture. It is blessed with a rich natural environment, and the abundant water that is essential for semiconductor production.

Since the plant began operation, we have aimed to become a "green factory" with lower environmental load, preventing global warming, cutting waste emissions, and reducing emissions of chemical substances. Every company employee works together on these and other related activities.

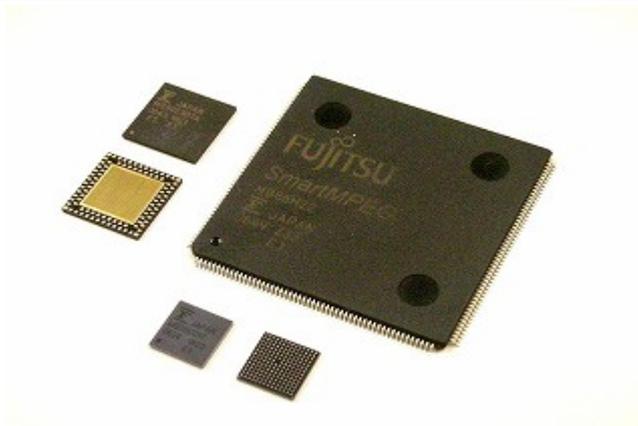
We are also actively extending our activities to environmental social contributions, such as cleaning up the area around the plant and its local area. We currently have approximately 2,700 lavender plants that we planted in the areas surrounding the plant, and during the flowering season, we invite the local people to pick those lavenders for drying and making potpourri.

In October 2009, we were awarded for the Aizuwakamatsu City Environmental Award (Business Department) in recognition of our consecutive efforts in environmental activities to date.

We also suffered damage in the Great East Japan Earthquake on March 11, but the diligent efforts of our staff enabled us to restore operations early, ahead of other companies. This success greatly increased our customers' confidence in us.

As a member of the community, this plant will join in with that community to pursue environmental management, based on our awareness of the importance of environmental activities. We hope you will read this Environmental Report, as it is our tool for sharing information about our environmental activities.

2. Introduction to Aizuwakamatsu Plant



As a semiconductor front-end process plant, the Aizuwakamatsu plant has taken on manufacturing mainly CMOS logic and analog devices for digital Audio/Video, game machines, digital home appliances, automotive products, and mobile phones. This plant has been meeting customers' design specifications and demands for multi-production with flexible quantities, along with the increase of COT business in recent years.

We are also working on the development of power devices using Gallium Nitride (GaN), which consumes less electricity.

Name: FUJITSU SEMICONDUCTOR LIMITED, Aizuwakamatsu Plant

Established: October 1984

Number of employees: 559 (including affiliated companies)

Business: Semiconductor manufacturing (logic LSIs, etc.)

3. Aim and Achievement in Environmental Activities

■ Report on objectives and results of activities in the year 2010

Since the year 2010, Fujitsu Semiconductor Limited Aizuwakamatsu Plant and Fujitsu Semiconductor Technology Inc., which share the same site, have pursued joint environmental activities.

The following activity objectives are for the two businesses together. All objectives were attained in the year 2010. Results were particularly notable in activities for the prevention of global warming.

Objectives in the year 2010	Results	Achievement Status
Reduce the emission of greenhouse gases other than CO ₂ by 29.5%, compared to the result in the year 2007	Reduced 47.3% by air conditioning improvements	○
Suppress the emission of greenhouse gases other than CO ₂ (PFCs) to +14.5% or less, compared to the result in the year 1995	4.5% reduction through the introduction of scrubbers	○
Reduce emission of priority chemical substances (IPA) by 41.0%, compared to the year 2007	63% reduction through the installation of new equipment and process changes	○
Reduce the amount of wastes by 55.6%, compared to the result in the year 2007	63.1% reduction by promoting conversion of waste to valuable substances	○
Implement three activities for environmental and social contribution, and four activities for biodiversity conservation	3.5 environmental and social contribution activities Biodiversity conservation activities 5 activities implemented	○

* In the Wakamatsu area, we integrated with Fujitsu Semiconductors and Fuji Semiconductor Technologies for this activity, starting in the year 2010. Figures in the table are combined values for two companies.

■ Objectives of activities in the year 2011

2011 is the second year of the 6th Fujitsu Group Environment Action Plan. Considerable impact remains from the Great East Japan Earthquake in March, but we are still working on measures against global warming (CO₂/PFC reduction), mainly consisting of power saving, as well as waste reduction, biodiversity conservation activities, and other efforts.

Objectives in the year 2011
Reduce the CO ₂ emission through energy consumption by 43.4%, compared to the result in the year 2007
Reduce the emission of greenhouse gases other than CO ₂ (PFCs) by 2.3%, compared to the result in the year 1995
Reduce emission of priority chemical substances (IPA) by 38.1%, compared to the year 2007
Reduce the amount of wastes by 58.3%, compared to the result in the year 2007
Implement 3 activities for environmental and social contribution, and 4 activities for biodiversity conservation

4. Green Factories

■ State of disaster countermeasures

The Great East Japan Earthquake on March 11 and the aftershock on April 11 damaged parts of the production equipment and buildings of this plant. However, our earthquake countermeasures and rapid restoration response, based on past experience, enabled us to resume partial operations at the end of March, ahead of other companies. We are now performing detailed tests on chimneys and underground pipes.



Cracked concrete on the purified water production building
(No chemical tanks fell over, leaked or were damaged)



Damage to the shutters of the drive building
(The disaster caused no injuries)

■ Examples of main improvements in the year 2010

This factory is developing green process activities that cut the amounts of chemicals used in production processes, thereby cutting costs and reducing environmental load.

In the year 2010, we also made progress with the transition from exfoliating fluid of high environmental impact to a lower-impact cleaning fluid. We have improved our clean room air conditioning, as an energy-saving measure (see photograph).

CO₂ emission reduction achieved by improving the CR air conditioning system



Pump and control panel (after improvement)

The temperature and humidity control system in the clean room runs with reference to areas of high thermal load. This control method controls overall temperature and humidity for the sake of one area of high thermal load, which was inefficient, consuming excessive cold and hot water. The new system we have built now can provide individual cooling control over the same area.

5. Environmental Social Contribution Activity

In addition to continuously cleaning around our plant, we present our environmental activities to the citizens of Aizuwakamatsu by exhibiting at the Environmental Festival, which is staged by the city. In the year 2010, we made teaching visits to the industrial high school, strengthening ties with the community.



Cleanup activities around the plant



Teaching visit to Aizu Industrial High School



Presentation at the Aizuwakamatsu City Environment Festival

6. Environmental Awareness Activities for Employees

We hold various events in this plant aiming to raise environmental awareness among our employees. We staged the environmental seminar in the year 2010 in response to the inclusion of biodiversity conservation activities in the 6th Fujitsu Group Environment Action Plan. We welcomed section manager Nomaki (Environment Promotion Office) as the lecturer and raised awareness further with data on personally-relevant subjects and other fascinating content.



Holding environment seminars



Site visit to environmental facilities



Picking lavender flowers

7. Efforts for Safe and Secure Plants

We perform periodic environmental analyses, in compliance with applicable environmental laws and ordinances, to prevent the occurrence of environmental risks. In the year 2010, we increased the number of observation wells near our site boundaries, to strengthen our groundwater monitoring system. We also run regular health and safety patrols, implement risk assessments in all workplaces, hold safety conferences with partner companies (58 companies), and other measures to maintain and improve a safe workplace environment.



More observation wells



Local Safety Conference with partner companies

8. Compliance with Environment-Related Rules and Regulations

As part of our compliance with rules and regulations in the year 2010, we reported to the Fukushima Prefecture Aizu Regional Development Bureau that some samples in our re-measurement of BOD values in our final discharge water had exceeded Fukushima prefectural ordinances.

We estimate that the readings were due to a temporary inflow of waste water of high BOD concentration. To date, we have not detected any more values in excess of prefectural ordinances.

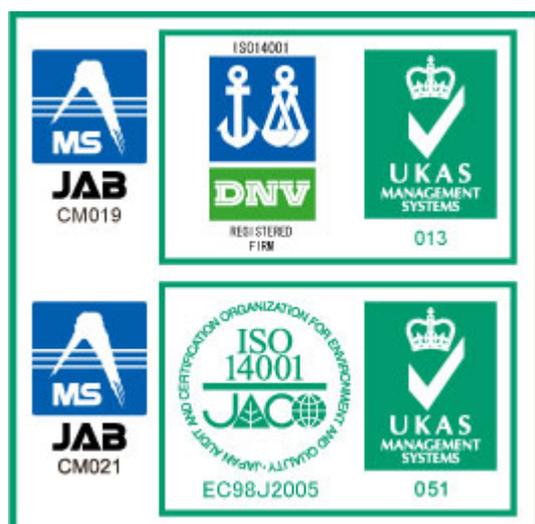
9. Environmental Accounting

With the end of #611 and #811, the effect of structural reform was -47.1%, relative to the second half of 2009. The effects of green process measures (resource recycling) were particularly large, at -84.5%, and we are working to further step up our activities.

2010 Environmental accounting results table (unit: million yen)

Item	Scope	Cost	Outcome
Costs and outcomes within the operation area	Preventing pollutions, preserving the global environment, recycling resources, etc.	125	116
Costs and outcomes in upstream and downstream processes	Waste product recycling, green procurement, etc.	0	0
Management activity costs and outcomes	ISO14001, environmental education, environmental public relations, etc.	11	0.5
Research and development and solution business costs and outcomes	Research of environmentally friendly technology for products, etc.	0	0
Social activity costs and outcomes	Donation to and support of environmental preservation groups, etc.	0	0
Handling environmental damage costs and outcomes	Restoration from soil and groundwater contamination, etc.	0	0
Total		136	116.5

10. Environmental Management Systems



■ Integrated certification

The Fujitsu Group acquired ISO14001 integrated certification, which applies to Fujitsu and its linked companies, in March 2005. In 2006, we expanded the scope of integration further, to global integration that includes all linked overseas companies.

Date of acquisition of Fujitsu Group World-Wide integrated certification

March 23, 2006 Certificate number: EC98J2005

Aizuwakamatsu Plant was evaluated as being compliant with ISO14001: 2004 based on the results of an update check by the Japan Audit and Certification Organization (JACO) in November 2010.

■ Internal environment auditing

Aizuwakamatsu Plant conducts internal audits every year to get an overall understanding of the status of environmental load and preservation and to evaluate the state of compliance with ISO.

FUJITSU SEMICONDUCTOR LIMITED

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