

# Fujitsu Semiconductor Limited Mie Plant

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Established: October 1984

Employees: Approx. 1,000 (including affiliated companies)

Business description: Semiconductor manufacturing (logic LSI, LSI using flash memory, etc.)

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## ■ Greeting

As the bases of semiconductor manufacturing in Fujitsu Semiconductor Limited, Mie Plant is a front-end processing plant of 300 mm-diameter wafers. It is a core plant that bears the role of mass-producing semiconductors.

As an advanced green factory leading the environmental activities of the Fujitsu Group, such as thorough energy saving, reduction of chemical substance emissions and zero emissions (100% effective use), we are working to reduce a wide range of environmental loads.

In 2013, we serviced our facility to create a safer, secure plant, and launched full-scale operation of the equipment installed last fiscal year to reduce the nitrate concentration in plant wastewater. We are working to maintain stable, updated operation.

We are pursuing a wide range of approaches from the local community level to the global scale including activities contributing to the local community, measures against global warming, and biodiversity preservation, and we would like to continue to provide information of our environmental activities.



Tatsuya Deguchi, Plant Manager, Mie Plant



## ■ Business Establishment Profile

Mie Plant began operating in October 1984 and is a core plant of Fujitsu Semiconductor Limited, which mass-produces products such as logic LSIs. The CPU, which is the heart of the super computer "Kei," was manufactured in Mie plant.

Based on the concept that "outstanding end-products consist of excellent ICs," we are contributing to society as a leading-edge factory that responds to rapid technological innovations in the ubiquitous society through manufacturing new semiconductors.

In addition, we are always striving to improve safety and quality through efforts such as establishing quality assurance systems based on ISO 9000 series certification while pursuing becoming an "environmentally friendly plant" according to ISO 14001.

## ■ Target and Achievement in Environmental Activities

Our production volume in 2013 increased from that of the previous fiscal year, yet we successfully achieved all the environmental activity objectives that promote environmental load reduction.

Objectives in 2013	Results	Achievement Status
Limit the CO <sub>2</sub> emissions to 178,103 tons or less.	165.620 tons	Achieved
Limit the emissions of PFC to 102,726 tons-GWP or less.	62,562 tons-GWP	Achieved
Limit the amount of waste to 8,510 tons or less.	5,565 tons	Achieved
Carry out 2 or more water usage measures.	3 measures	Achieved
Limit the emissions of VOC to 128.319 tons or less.	68.502 tons	Achieved
Limit the emissions of PRTR to 1.087 tons or less.	0.223 tons	Achieved
Carry out a minimum of 5 contributing activities for social environment.	5 activities	Achieved
Donate lab-bred killifishes to a local elementary school, maintain killifish breeding and install green curtains.	Donated to a school, Be maintained breeding, and installed green curtains	Achieved

## ■ Objectives of activities in 2014

The activity objectives regarding "contributing to society," "own business activities" and "continuous management objectives" that the Mie Plant should safety have been set according to the Seventh Fujitsu Group Environment Action Plan starting from 2013.

We are promoting activities particularly for "own business activities" and "continuous management objectives" from the viewpoints of both cost cutting and environmental load reduction.

Objectives in 2014
Limit the CO <sub>2</sub> emissions to 166,152 tons or less.
Limit the emissions of PFCs to 47,722 tons-GWP or less.
Limit the amount of waste to 7,296 tons or less.
Carry out 4 water usage measures within a couple of years.
Limit VOC emissions to 92.305 tons or less.
Carry out 6 or more activities for environmental and social contribution per year.

## ■ Green Factories

### ● Green Processes

Green processes are activities for both reducing environmental loads and cutting costs through the comparison and investigation of the chemical and gas usage differences between the design and the actual operations in manufacturing processes. In 2013, we focused on linkage with cost reduction activities to improve the evaluation method and upgrade and expand measures.

- Main improvement measures:

1. Process reviews reduced the amount of photoresist, exfoliating fluids and material gas used.
2. Extension of lifetime of parts and consumable goods related to manufacturing equipment.

### ● Reducing chemical substances

We are operating a chemical substance registration system for inspecting and registering the safety aspects, fire hazard aspects, and impact on the environment of all chemical substances used at Mie Plant before the chemicals are obtained, and are promoting a correct understanding of the constituents of chemicals and gases and reducing the amounts of these consumed.

- Main measures to reduce amount used :

1. Reduce the amount of photoresist and surface processing agents used .
2. Reduce the amount of organic solvents used.
3. Reduce the amount of cleaning gases for manufacturing equipment used.

## ■ Environmental social contribution activity

We held 4 cleanup activities for the area surrounding the plant, as the "City Cleanup Campaign," including Adopt Program(\*Note) run by Kuwana City. (A total of 233 people participated in these cleaning programs in 2013.)

We held "visiting environmental class" in which we visit a school to hold a class on the environment at a local elementary school since 2010. (A total of 73 students in the 4th grade took the class in this year.)

\* Note)

In the Adopt Program, volunteers from citizen and business select a location from public spaces such as roads and parks managed by the city and perform cleanup and beautification activities.



## ■ Environmental Education/Environmental Awareness Activities

In conjunction with National Environment Month, we stage environmental activities in June every year as Environment Month events, with the aim of improving the environmental awareness of employees.

In 2013, we held an environmental exhibition and an exhibition of employee's photographs taken from the standpoint of biodiversity. We also modified green curtain events to work with related departments from preparatory stage.



## ■ Efforts for Safe and Secure Plants

In 2013, we are successful at the environmental improvement project by setting up a new monitoring aquarium for biodiversity conservation based on the project to monitor killifish and their breeding in discharged water since 2011.

To reduce the environmental load, we address the stable operation of a new device installed last year which decomposes ammonia to lower the nitrate load of discharge water. And also we are checking compliance with regulations with periodic environmental analysis following regulations.

As a countermeasure against environmental safety risks, we reviewed environmental analyses in line with revisions of legal regulations, and held safety promotion liaison meetings with partner companies.



## ■ Compliance with Environment-Related Rules and Regulations

### Compliance

- We use check sheets stating legal compliance and application items to check our compliance status on a semiannual basis. We also reconfirm the status when we perform internal audits on the basis of our environmental management system. We constantly gather information on law revisions and regulatory trends to ensure the earliest response to any change.

- In 2013, no excess control value or accident, etc., were found in environmental analysis of discharged water or exhaust gas.

- For the soil and other contamination reported to Mie Prefecture and Kuwana City in May 2008, we are continuing purification by pumping out contaminated water, monitoring the surrounding environment, and reporting our results to the prefecture and the city (December). We have confirmed that there are no other problems with regulations and requirements.

## ■ Environmental Load Data

**INPUT**  
 Purchased electricity: 392,209 MWh  
 City gas: 2.31 million m<sup>3</sup>  
 LNG: 125 tons  
 LPG: 62 tons  
 Water: 6.019 million m<sup>3</sup>  
 Chemical substances: 169 tons

**OUTPUT**  
 CO<sub>2</sub> emissions: 165,620 tons  
 NO<sub>x</sub> emissions: 0.88 tons  
 Waste product generation: 5,565 tons  
 Waste water: 5.9 million m<sup>3</sup>  
 Chemical substances: 0.22 tons

(Main factors for increase/decrease)

Increased production caused an increase in CO<sub>2</sub>, water, waste product, and chemical substances from that of the previous year.

(Supplementary) How to calculate the chemical substances

INPUT: usage amount of PRTR applicable chemical substances in factories.

OUTPUT: calculated by measuring concentrations of PRTR-applicable chemical substances at water drainage ports or exhaust ports of factories, and multiplying the measured value by total emissions or total exhausts. Or calculated based on input and output amounts of chemical substances.

## ■ Change of Environmental Load Data over Years

