

Top Message	Interview to Head of Corporate Environmental Strategy Unit	Special Feature 1: Fujitsu Group Environmental Action Plan Stage VIII	Special Feature 2: Digital Innovation	Chapter I Contribution to Society	Chapter II Reducing Our Environmental Burden	Environmental Management	Data Overview	
Reducing Greenhouse Gases (GHG) Emissions and Boosting Energy Intensity at Our Business Sites	Promoting Environmentally Conscious Data Centers	Reduce CO <sub>2</sub> Emissions from Logistics and Transportation	Promoting CO <sub>2</sub> Emission Reductions with Our Business Partners	Increasing Amounts of Renewable Energy Used	Efficient Use of Water Resources	Reducing Chemical Substances Emissions	Limiting Amounts of Waste Generated	Product Recycling

## Efficient Use of Water Resources

### Our Approach

Global water shortage risks are increasing along with climate change, destruction of forests, and economic and population growth in emerging and developing countries. For companies, as well, water shortages bear risks toward business continuity.

Reducing water usage and recycling water are critical issues. Since the Fujitsu Group uses especially large amounts of water in our semiconductor and printed circuit board manufacturing, we believe it is particularly necessary to reduce our water consumption in these areas. In addition to general water saving, to date we have been continuously striving to recirculate and reuse water by recycling pure water and reusing rainwater. From FY 2013, we established efficient water usage as a new goal and have boosted our efforts even greater than in the past.

### Summary of FY 2015 Achievements

Targets under the Fujitsu Group Environmental Action Plan (Stage VII) (toward FY 2015)	Continue efforts for efficient use of water, e.g. water recycling and water saving
FY 2015 Key Performance	Water usage: <b>15,830,000 m<sup>3</sup></b> reduced by <b>4.6%</b> (compared to FY 2014)

### FY 2015 Performance and Results

#### 4.6% reduction in water usage from FY 2014

Water usage for FY 2015 was 15,830,000 m<sup>3</sup> (usage rate per unit of sales: 334 m<sup>3</sup>/100 million yen), which was a 4.6% reduction compared to FY 2014. The proportion of recycled water overall was 39.4%, which greatly contributed to efficient usage.

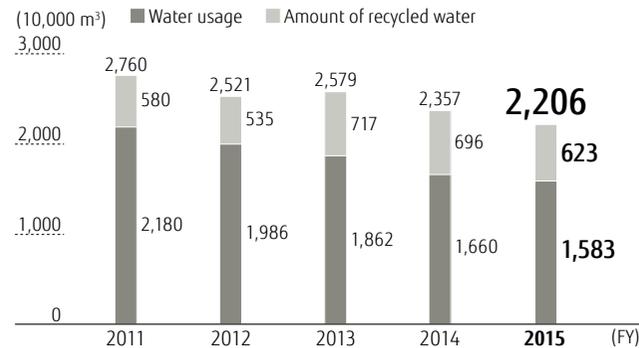
Each of our business sites has set water usage reduction targets and is working to meet them. Our Nagano Plant, for instance, in addition to promoting measures to increase the collection of raw water with waste water recycling facilities in FY2015, they worked on stabilizing operation and reduced water usage by 36,487 m<sup>3</sup>.

### FY 2016 Targets and Plans

#### Work to Achieve the Targets of the Fujitsu Group Environmental Action Plan (Stage VIII)

To pursue our Environmental Action Plan (Stage VIII) goal to “reduce water consumption over 1% in total (128,000m<sup>3</sup>),” we will combine efforts at each of our plants, one by one, and further endeavor to efficiently use water resources following on from actions in FY 2015.

### Trends in Water Usage and Amounts of Recycled Water



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## Efficient Use of Water Resources

### Main Activities in FY 2015

#### Recycling of Production Waste Water Through Green Jishuken

PT FDK Indonesia, which manufactures and sells alkaline batteries, is endeavoring to effectively use water resources on the assembly line.

The assembly line in this factory differs from other production lines in that it has a vacuum process which uses a vacuum pump. Because this process requires a water-cooled system, it uses raw water supplied by the Industrial Park.

This cooling process uses quite a lot of water; about 1,080 m<sup>3</sup>/month (July-November 2015 average). However, the used water was not re-used and almost the same amount of water was discharged as waste leading to a large cost for water use.

Through Green Jishuken\* the factory worked to improve the water-cooled system of the vacuum process in order to solve this problem. By utilizing some equipment that was not being used, and by modifying the open cycle system to be a closed cycle system it became possible to reuse water so the amount of wastewater discharged fell to close to zero. In addition to eliminating the waste of water resources, the cost of raw water consumption was also significantly decreased.

\* **Jishuken**: short for Jishukenkyukai (independent research meeting), a meeting to announce the results of independently conducted improvements by each business unit.

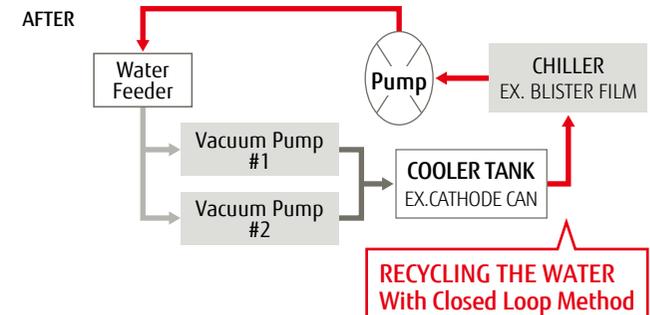
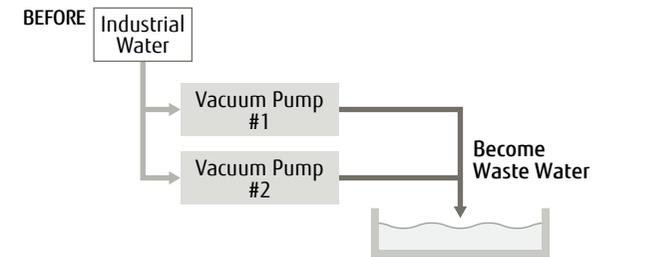
#### The steps of the activity:

- a: Install chiller (ex-Blister Film area) and water tank (ex-Cathode Can area)
- b: Install electric feeder & connect to the vacuum pump
- c: Change water inlet of vacuum pump from raw water feeder to chiller
- d: Change water outlet of vacuum pump from drainage to water tank
- e: Connect water tank outlet to chiller inlet and pump chilled water to pump inlet
- f: Set chiller temperature to 22°C

#### Major achievements:

1. Reduction of Waste water  
 Before: the amount of waste water was almost as much as the use of raw water for the cooling process, approx. 1,080 m<sup>3</sup>/month  
 After: almost no waste water is discharged
2. Economic effect  
 Before: cost of water consumption was approx. IDR 16,357,191.8 (USD 1,160)/month  
 After: almost zero for water consumption in this process.  
 However, there is the cost of electricity as a consequence of the use of the chiller resulting in a cost saving of around 70%.

#### Reduction of Water Used by Improvements in the Water-cooled System



Pipe to return water to the chiller (blue pipes)



Close Loop Circulation (blue pipes)