Y2016

SMIC Environmental Reporting

Semiconductor Manufacturing International Corporation

May 2017

Assurance Statement

SMIC (Semiconductor Manufacturing International Corporation) has ensured all the data in the report is accurate and authentic; this data has also been certified by the following third parties, which have no conflict of interest in this matter. The data showed in the report involves SMIC Shanghai, Beijing, Tianjin and Shenzhen plants：

- Data on waste gas emissions was monitored by qualified testing institutes
- Data on hazardous waste was checked by treatment vendors and the government via bills
- Data on energy consumption was verified by the related energy management agencies
- Data on greenhouse gas emissions was certified via 3rd party ISO14064 certification or other certification for carbon trading

Content

1 Environmental Footprint

Semiconductor Manufacturing International Corporation is one of the leading semiconductor foundries in the world and the largest and most advanced foundry in mainland China. SMIC provides integrated circuit (IC) foundry and technology services on process nodes from 0.35 micron to 28 nanometer. Headquartered in Shanghai, China, SMIC has an international manufacturing and service base. In China, SMIC has a 300mm wafer fabrication facility (fab) and a 200mm fab in Shanghai; a 300mm fab and a majority-owned 300mm fab for advanced nodes in Beijing; 200mm fabs in Tianjin and Shenzhen; and a majority-owned joint-venture 300mm bumping facility in Jiangyin; additionally, in Italy SMIC has a majority-owned 200mm fab. SMIC also has marketing and customer service offices in the U.S., Europe, Japan, and Taiwan, and a representative office in Hong Kong.

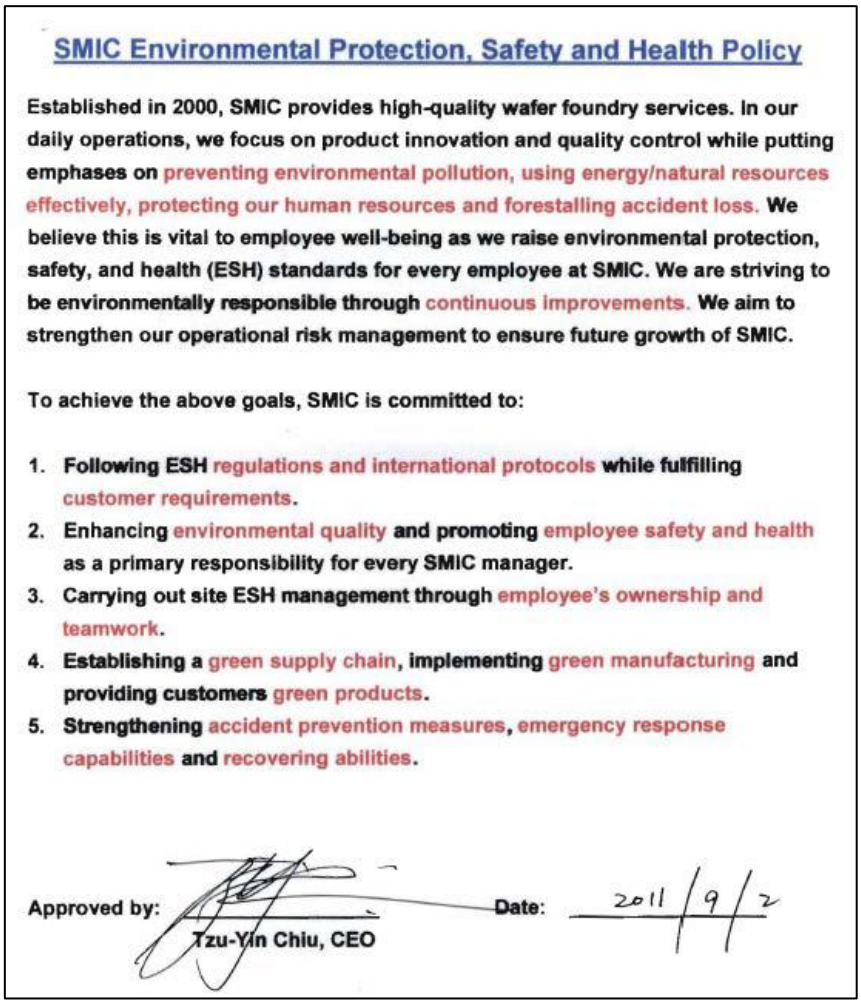
2 Environmental Protection Policy

SMIC established its ISO 14001 environmental system in 2001. SMIC continuously improves its management system, optimizes and revises its ESH management policy, and has established the following latest ESH policy.

To realize the environmental protection goal of ESH policies, SMIC takes the following environmental protection measures:

- Lay out and implement environment protection measures, drive energy conservation and emission reduction projects
- Classify, collect and recycle wastes
- Supervise and manage movements, safe treatment of wastes and qualification affirmation of manufacturers
- Control the content of hazardous substances in the products

- Regularly conduct environment protection monitoring and carbon emission examination, and disclose results



SMIC Environmental Protection, Safety and Health Policy

Established in 2000, SMIC provides high-quality wafer foundry services. In our daily operations, we focus on product innovation and quality control while putting emphases on preventing environmental pollution, using energy/natural resources effectively, protecting our human resources and forestalling accident loss. We believe this is vital to employee well-being as we raise environmental protection, safety, and health (ESH) standards for every employee at SMIC. We are striving to be environmentally responsible through continuous improvements. We aim to strengthen our operational risk management to ensure future growth of SMIC.

To achieve the above goals, SMIC is committed to:

1. Following ESH regulations and international protocols while fulfilling customer requirements.
2. Enhancing environmental quality and promoting employee safety and health as a primary responsibility for every SMIC manager.
3. Carrying out site ESH management through employee's ownership and teamwork.
4. Establishing a green supply chain, implementing green manufacturing and providing customers green products.
5. Strengthening accident prevention measures, emergency response capabilities and recovering abilities.

Approved by: Tzu-Yin Chiu, CEO Date: 2011/9/2

3 Environment Management

Guided by related environment management systems and standards, SMIC systematically and normatively introduces environment into the whole process of production and operation through planning, implementing and operating its environment management patterns.

3.1 Management System

SMIC strictly abides by relevant domestic laws and regulations, and follows internationally recognized standards. It has established a complete internal environment management system, and founded a special environment management organization as required by the system, with clear division of authority and responsibility and collaborative operation between various intra-organization units. The effectiveness of the management system is audited on an annual basis. As of the end of 2016, all of our existing sites had received Environment Management System (ISO 14001) and Hazardous Substance Process Management System (QC 080000) certifications, and all the newly-built sites will receive

these management system certifications within one year after being put into volume production.

3.2 Green Building

SMIC Beijing's new 12 inches workshop, namely Semiconductor Manufacturing North China (Beijing) Corporation (SMNC) was awarded the Leadership in Energy & Environmental Design (LEED) Gold Certification from the US Green Building Council (USGBC) in 2015. Since then, SMIC stipulates that, in the future, all the newly-built plants will be designed and constructed according to “green building assessment and building sustainability assessment standards”.

3.3 Clean Production

Clean production is a method to minimize or even eliminate the impact brought by the product to humans and the environment. It is possible to realize green production in many ways, including reduction of pollution sources, increased the utilization ratio of resources, and reduction or elimination of contamination in various links from production, maintenance and product use.

According to the requirements of local governments, SMIC conducts clean production audit once every five years, and implements its clean production improvement scheme according to the audit opinions of experts. As of the end of 2016, it has completed a cumulative total of 77 clean production improvement schemes, and invested in the amount of above RMB 40 million.

4 Greenhouse Gas Management

The emission of greenhouse gases significantly increases their concentration in the atmosphere, enhances the greenhouse effect, and incurs climate change. Climate change exerts severe influence on global ecological environment, human life & health, economics and so forth, and is receiving close attention from the United Nations, the governments of various countries, the society and the business world.

4.1 Climate Change Policy

SMIC actively shoulders its responsibility towards alleviating climate change, establishes its climate change policy and implements measures to reduce the emission of greenhouse gases.

SMIC Climate Change Policy

SMIC conducts business with the wellbeing of our environment, our community and our next generation in mind. Concerned about global climate change, SMIC remains committed to save resources, reduce disaster losses caused by extreme weather, slow down and reverse the effect of climate change to achieve sustainable development and leave behind a cleaner and more stable environment. To achieve these objectives, SMIC commits to:

1. Decrease Greenhouse Gases emissions;
2. Reduce product energy consumption;
3. Lower product water consumption;
4. Pursue green production and energy saving products; and
5. Enhance the ability to prevent, respond, and recover during adverse weather conditions.

Approved by: Date: 2015. 1. 29

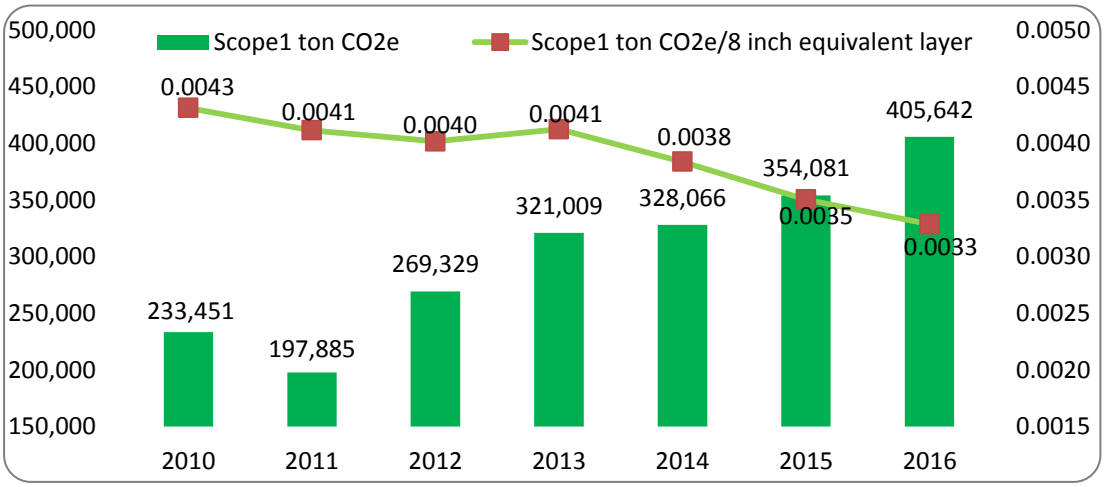
Tzu-Yin Chiu, CEO

4.2 Greenhouse Gas Emission Verification

SMIC has established greenhouse gas emission verification system according to ISO 14064-1 international standard. It carries out regular greenhouse gas emissions accounting for each plant of SMIC under production and operation annually in order to obtain the information of greenhouse gas emission in SMIC, and also implements emission reduction measures as planned.

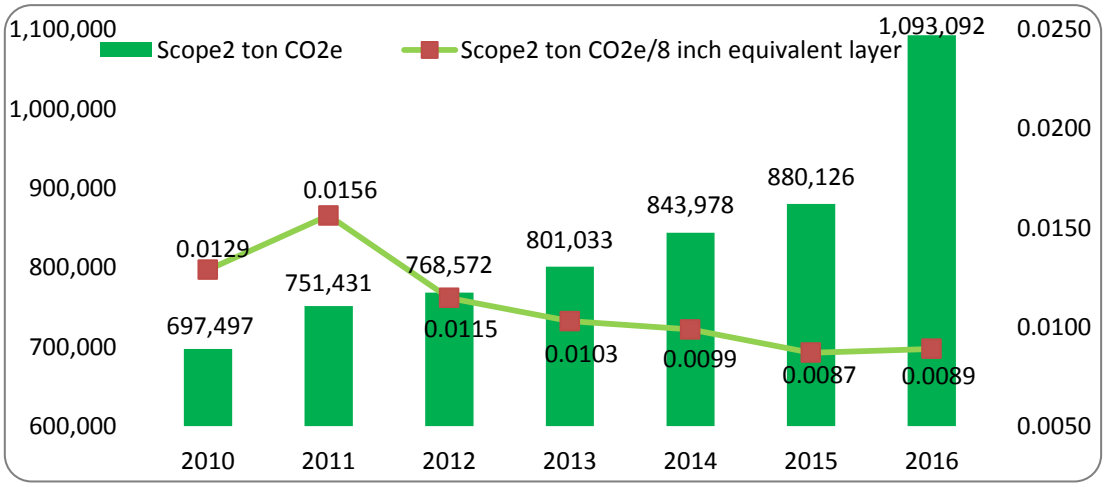
4.2.1 Status of direct greenhouse gas emission

Sources of direct greenhouse gas emission: emission from the combustion of fossil fuels, such as gasoline, diesel and natural gas, PFC gas emission in the Chemical Vapor Deposition (CVD) and Etch production processes, emission from the combustion of organic gases, and other fugitive emissions from refrigerant, wastewater treatment systems and pure water systems, etc.



4.2.2 Status of indirect greenhouse gas emission

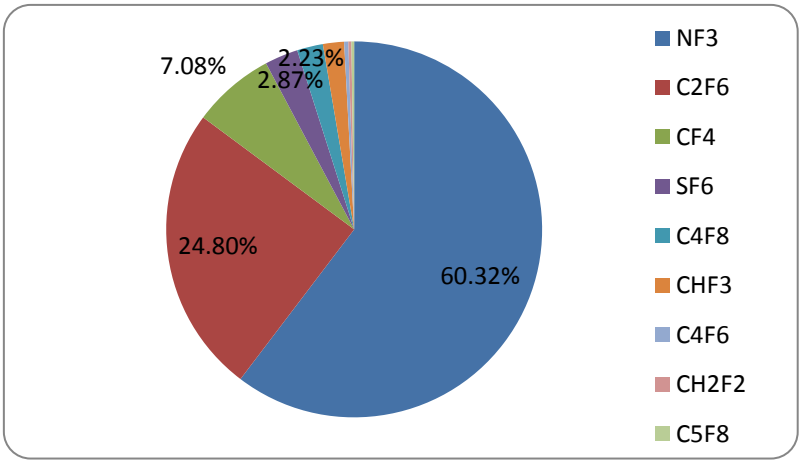
Sources of indirect greenhouse gas emission: purchased electricity, steam, heat and other energies.



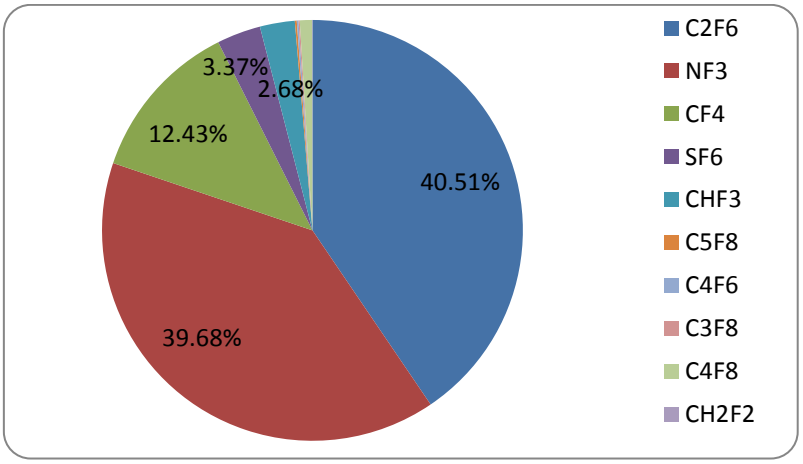
4.2.3 PFC greenhouse gas emission

As an important member of China Semiconductor Industry Association (CSIA), SMIC provides the information of PFC greenhouse gas emission to CSIA annually, which then reports it to World Semiconductor Council (WSC). SMIC actively abides by the agreement about voluntary reduction of PFC greenhouse gas emission established by WSC, and endeavors to implement the best practice technologies advocated by WSC and reduce PFC greenhouse gas emission.

2016 PFC gas consumption information is shown in the following figure:



Information of CO_2 from PFC emission in 2016 is shown in the following figure:



SMIC will follow WSC's goal which is equivalent to a 30% Normalized Emission Rate (NER) reduction from the 2010 aggregated baseline to 2020. The NER in 2016 is 0.825 kg/cm^2 which achieved 36% reduction from the 2010 baseline with 1.29 kg/cm^2. But the great efforts are still being made to achieve the WSC's NER absolute reduction goal with 0.22kg/cm^2. (The NER value calculated via WSC's computation method).

5 Energy Management

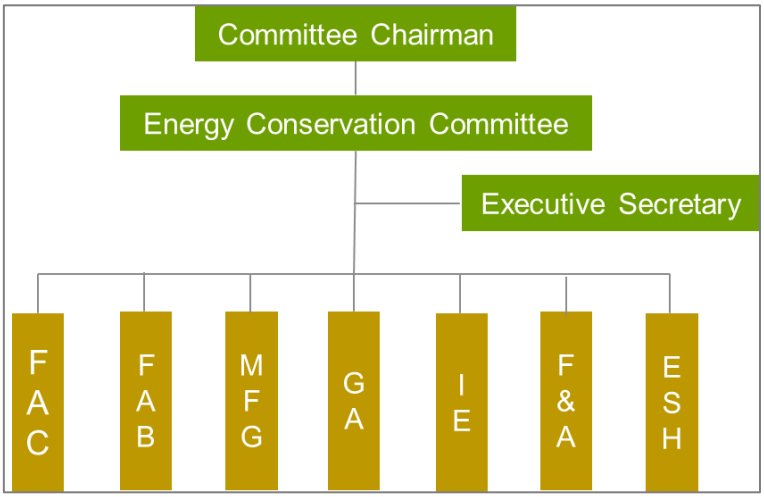
SMIC actively responds to our country's call of energy conservation and emission reduction, establishes its energy management organization to continuously implement energy conservation and emission reduction projects, and has realized both economic benefits and environmental benefits.

5.1 Energy Management Mechanism

SMIC promotes energy management by the Energy Conservation Committee established at the beginning of 2014. The Chief Operating Officer (COO) chairs the Energy Conservation Committee, and presides over energy conservation-related work. The members of the committee include the plant facility department, the equipment department, the production department, the general services department, the production planning department, the financial department, the EHS department and other relevant departments of each plant. We have built a complete energy management system, and implemented three levels of energy management network and the energy management post responsibility system. We have also set up a full-time energy management agency and a full-time management person to engage in energy management and guarantee the implementation of energy management in terms of institutional and organizational construction. SMIC's Beijing Plant and Tianjin Plant established an energy management system pursuant to the national standard GB/T23331-2012 in a bit to further strengthen energy management.

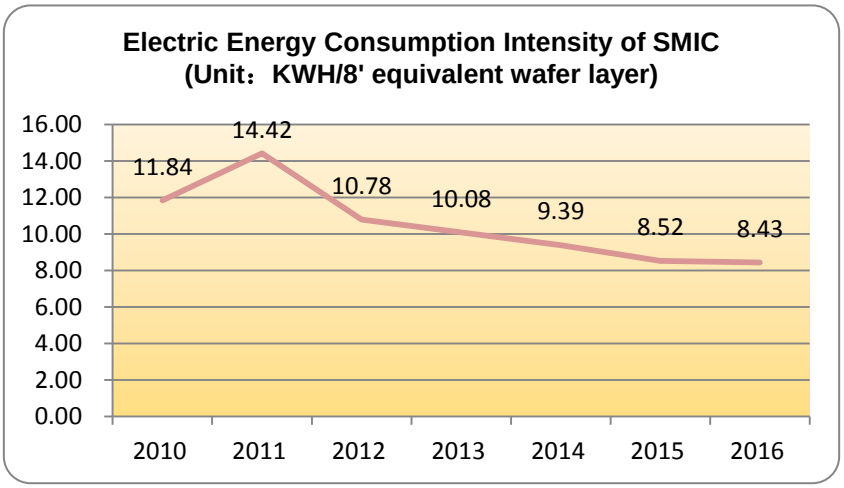
The energy conservation committee holds regular meetings monthly and sets fixed topics for discussion. Each meeting summarizes the execution conditions of the energy conservation plan in the past month, analyzes varying or abnormal trend of energy consumption, and disseminates good energy conversation schemes to different plants

through the meeting, to realize mutual learning. The Committee also adopts a new way to cooperate with vendors through management of energy contracts and shares the benefits resulting from energy conservation to actualize win-win modes.



5.2 Energy Consumption Status

Compared with 2015, in 2016, the energy consumption intensity per unit output presented a steadily declining trend. The target of unit power reduction in 2017 is 9.00 kwh/8" equivalent wafer layer.

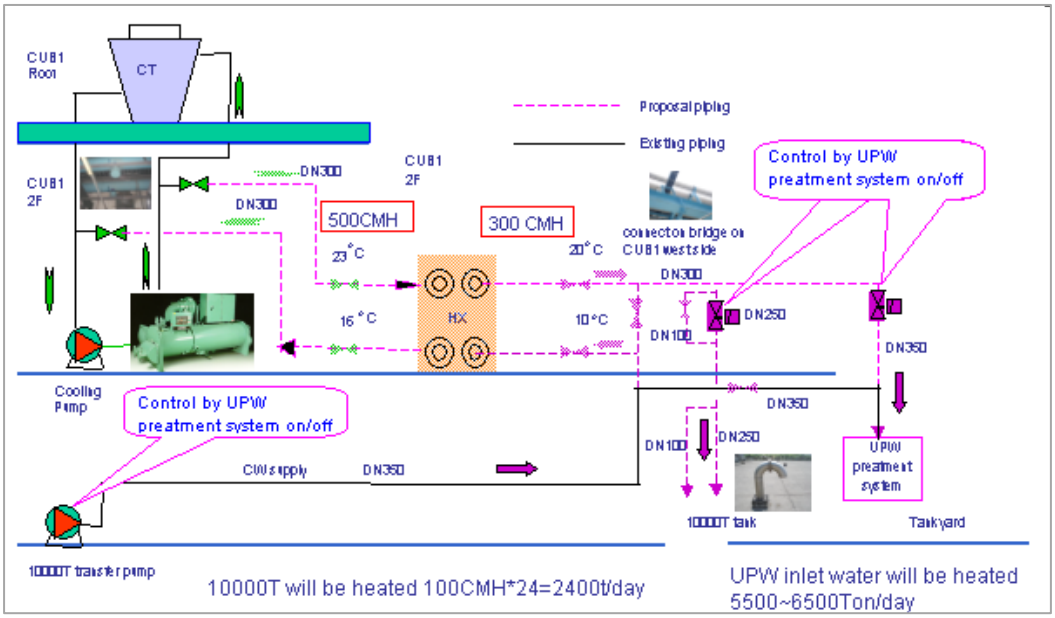


5.3 Main Energy Saving Projects in 2016

5.3.1 Energy conservation transformation project for chiller cooling water's heat recovery system in Shanghai Plant

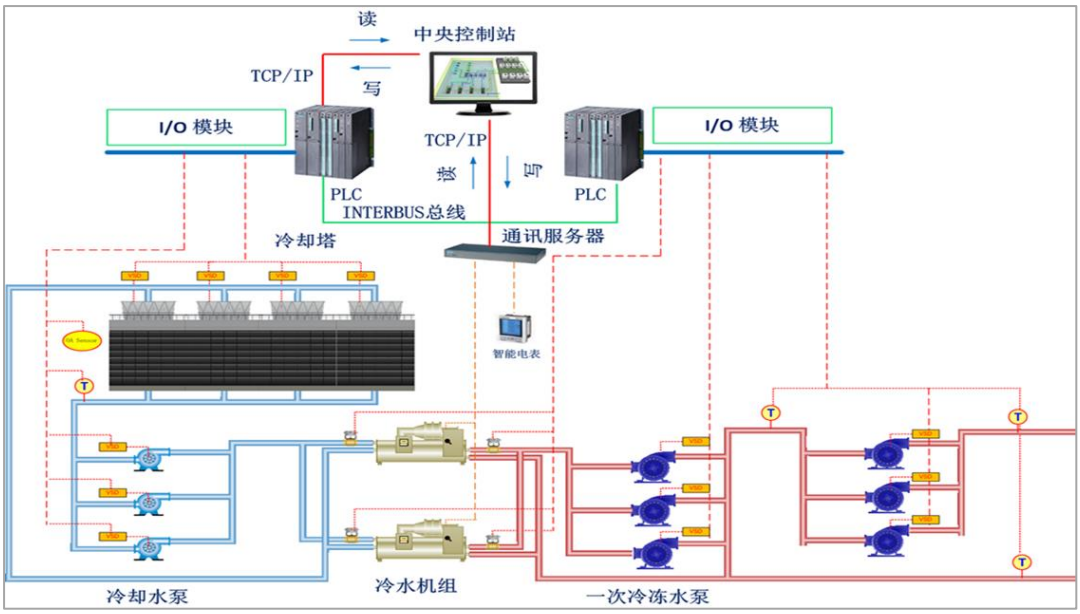
In the winter and transitional seasons (tap water having a mean temperature of about 10℃), Shanghai plant uses the heat of the refrigerating unit's cooling return water (with a mean temperature of 28℃) to heat the ultra-purified water (UPW) raw water (tap water) from 10℃ to 22℃ via the plate-type heat exchanger. This not only reduces the steam formerly consumed by the central hot water system for heat exchange, but also reduces the abnormal fluctuations of the steam supply system caused by the frequent startups and

shutdowns of the UPW system. Meanwhile, the temperature of the cooling tower's return water, after its heat is absorbed by the UPW raw water, declines from 28℃ to 16℃, which can improve the operation efficiency of the refrigerating unit and reduce its power consumption in the refrigerating process. The transformed system can save steam by 23,195t each year.



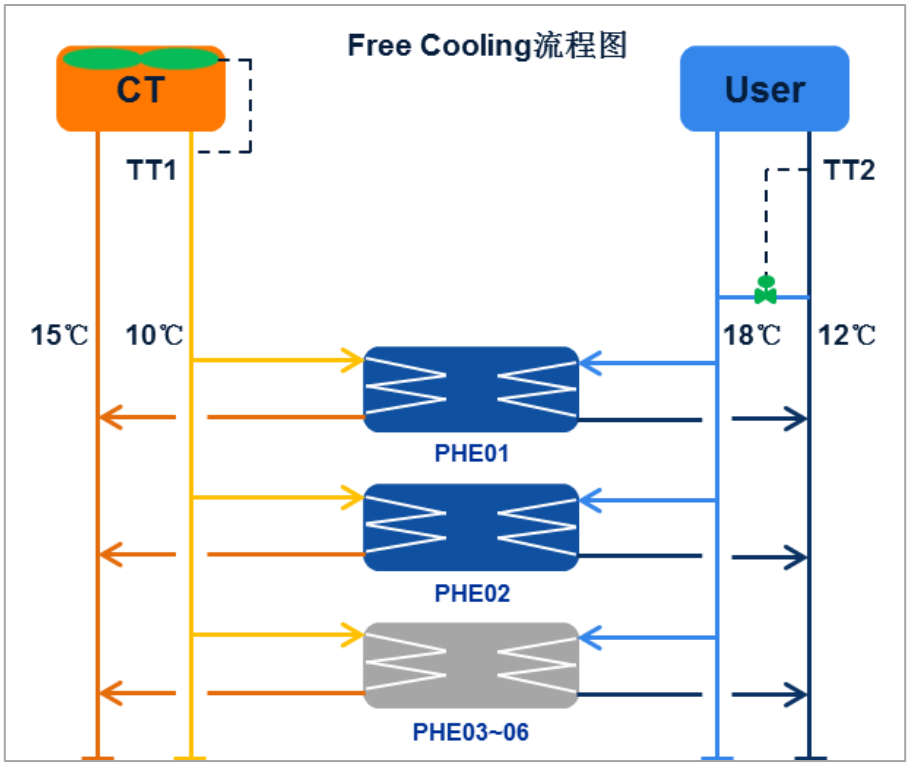
5.3.2 EMC energy conservation project for the chiller system in Beijing Plant

The Electromagnetic Compatibility (EMC) system relying on the EMC system, Beijing Plant optimizes the operation of various equipment of the refrigeration system, automatically controls the addition and subtraction of chillers, institutes remote control and local frequency control via the collection of various items of data and optimization software control. The system enables the equipment to operate at the best efficiency point and achieve the goal of energy conservation in operation while meeting the operating requirements. From February to December, 2016, it saves power by a cumulative total of 4,816,033kWh.



5.3.3 Free cooling energy conservation project in Beijing Plant

In the winter and transitional seasons, free cooling is used by Beijing Plant to supply cooling water to various systems (natural cooling procedure is followed to chill the water, and the chiller is shut down to save power). After the implementation of this project, power was saved by 3,607,200kWh in 2016.



6 Hazardous Substance Control

SMIC conducts the control of hazardous substances in the products according to QC080000 hazardous substance control system to control the hazardous materials throughout the whole process. Through our strict controls, our products reach the green product level and meet domestic and international standards for controlling hazardous substances, such as China's Measures for the Administration of the Restricted Use of the Hazardous Substances Contained in Electrical and Electronic Products, the European Union's Restriction of Hazardous Substances (RoHS) / Regulation concerning the Registration, Evaluation，Authorization and Restriction of Chemicals (REACH) directive and Sony's Green Partner(GP) customer requirements.

Source control: SMIC promotes green vendor evaluation systems to control hazardous substances from the sources. We choose suppliers that meet green vendor evaluation standards, we regularly perform documentation and on-site verification against suppliers, and we demand our raw-material suppliers to regularly deliver hazardous-substances-free statements and provide hazardous-substance-free test reports for high-risk materials.

Process control: SMIC strictly executes internal production process controls, conducts isolation management on used equipment, trains operating personnel and prevents pollution by foreign hazardous substance in the production process.

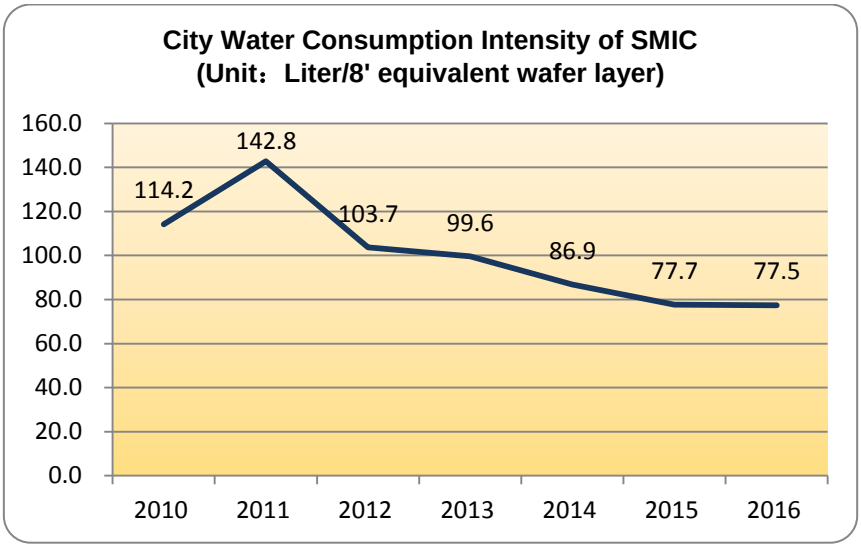
Product testing: We rigorously control hazardous substances in the products, and annually conduct hazardous substance tests on the products to be made; thereby verifying that the contents of hazardous materials are controlled within allowable ranges in the products.

7 Water Resource Management

SMIC's plants are scattered all over the world, and there are differences in the water resources available in different regions. We adjust measures to local conditions for the purposes of implementing water resources management and saving water resources.

7.1 Water Consumption Status

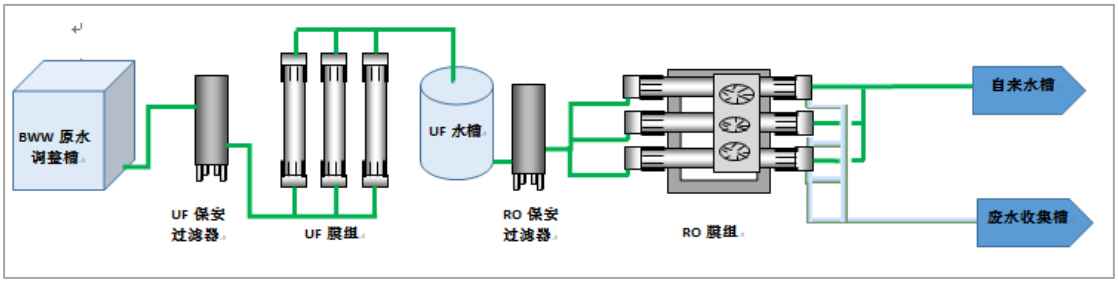
SMIC manages water resources to save water consumption, increase water resources usage efficiency and reduce waste water discharge. See water consumption data of SMIC in 2016 in the following table. The target of unit water reduction in 2017 is 85.00 liter/8" equivalent wafer layer.



7.2 Main Water Saving Projects in 2016

7.2.1 Backwashing Wastewater (BWW) wastewater recycling project of Shanghai Plant

To realize utilization of wastewater resources, save water resources, reduce pollution and achieve other goals, our Shanghai Plant has established a BWW wastewater recycling system. This system collects UPW system's Sand Filtration (SF), Activated Carbon (AC) backwashing and Reverse Osmosis (RO) concentrated water, uses Ultrafiltration (UF) to remove water turbidity, introduces RO membrane group to remove salts and provide a series of other treatment, and finally recycles it to the tap water tank (10,000T Tank) for the use of UPW system.



Project achievements:

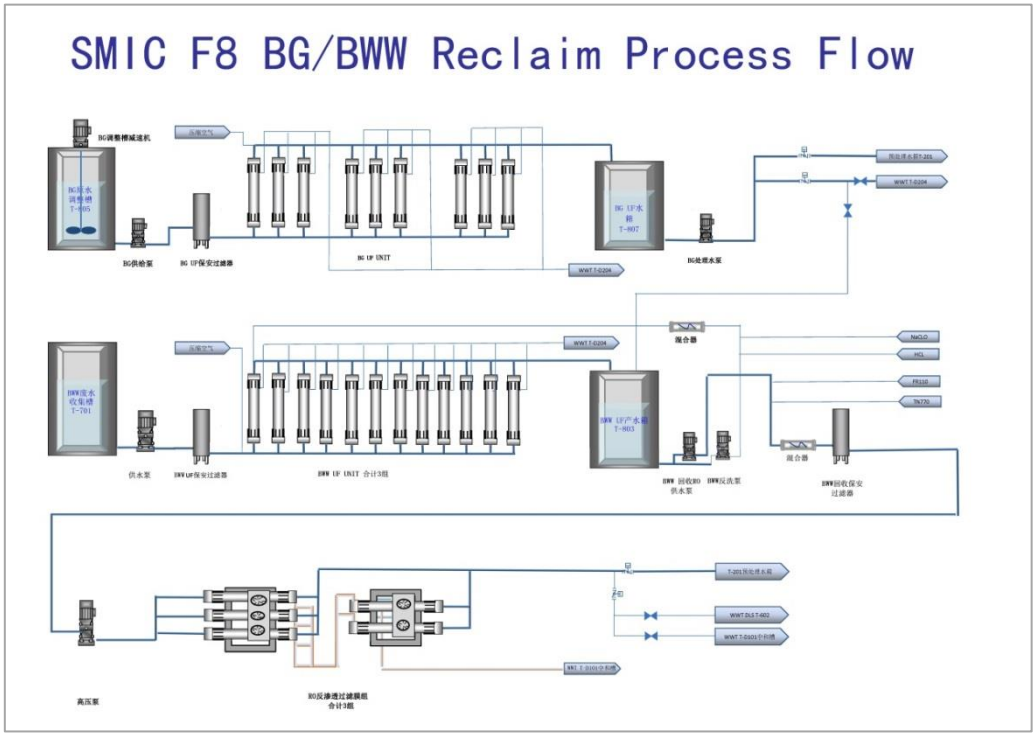
1. Reduction of tap water consumption by 120,450m^3
2. Increased stabilities of UPW system and secondary users' operation because the quality of reclaimed water is entirely superior to that of tap water

7.2.2 Grinding wastewater & purified water system flushing water recycling project

It intensively collects grinding wastewater, uses a wedge filter for Suspended Solid (SS) removal from large particles (>100μm), and then employs UF for treatment until meeting RO inlet water quality standard; BWW RO is further introduced to remove salts and so

forth, so that the product water can meet the standard on pretreated water for reuse in the purified water system.

It also intensively collects the backwashing water from Multi-medium Filter (MMF) and AC, the flushing water from anion and cation tower(2B), recovery water anion cation column (R2B）and strong anion / strong cation column (SA/SC). It first uses a wedge filter for SS removal from large particles (>100μm), and then employs UF for pretreatment to remove SS, organics and so forth; finally RO is further introduced to remove salts and so forth, so that the product water can meet the standard on pretreated water for reuse in the purified water system.

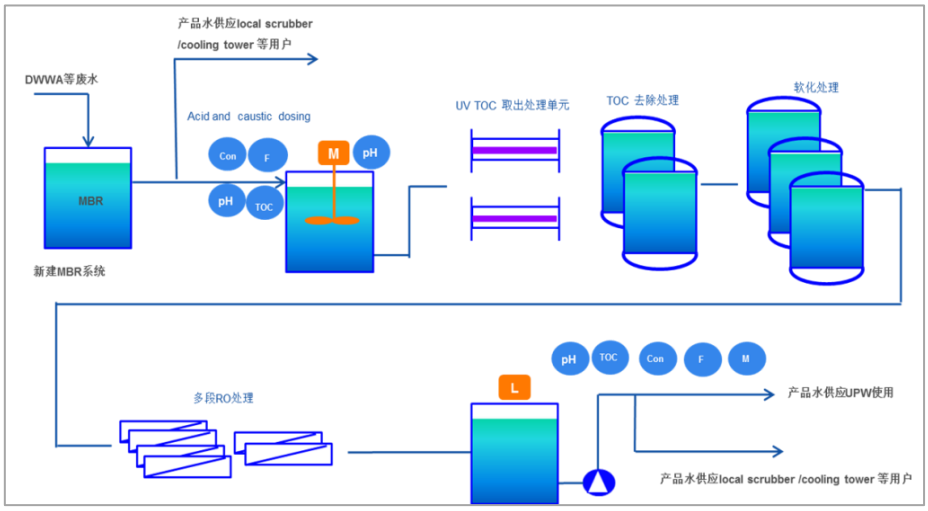


Project achievements:

1. Annual reduction of wastewater discharge by 150,128m^3 (consisting of 34,350m^3 grinding wastewater and 115,778m^3 backwashing and flushing water)
2. Annual conservation of tap water by 107,766m^3

7.2.3 Acidic wastewater recycling & water saving project

The collected acidic wastewater is first regulated via the neutralization system, and then receives aeration treatment by the aerobic tank to further homogenize and increase the concentration of dissolved oxygen in the wastewater; after that, it overflows into the Membrane Bio-Reactor System (MBRS), and the product water filtered under negative pressure through continuous aeration and MBR membrane is led into the raw water tank of the downstream system; later the product water receives process treatment by activated carbon, softening, Ultraviolet (UV), RO and so forth until meeting the index requirements on the raw water of the UPW system.



Project achievements:

1. A water recycling rate of 85% by Tianjin Plant in 2016
2. Reduction of tap water consumption by 178,864m^2
3. Increased stabilities of UPW system and secondary users' operation because the quality of reclaimed water is entirely superior to that of tap water
4. Saving of natural gas used for tap water preheating by about 124,694m^3 in the winter of 2016

7.3 Water Pollution Prevention and Control

SMIC has built multiple sets of wastewater treatment facilities for the treatment of production and domestic wastewater according to the specific properties of wastewater, thus ensuring that the wastewater discharged meets the national or local standards. Meanwhile, our company strictly follows the wastewater discharge monitoring requirements on all wastewater discharge according to the standards set by the national and local governments. Detailed environmental monitoring data can be seen in the company's official website: http://www.smics.com/chn/about/esh.php.

8 Air Pollution Prevention and Control

SMIC focuses on air quality in the region, and attaches great importance to the processing of air pollutants, so that all the exhaust emissions meet the national or local standards. Data on waste gas emissions are as following:

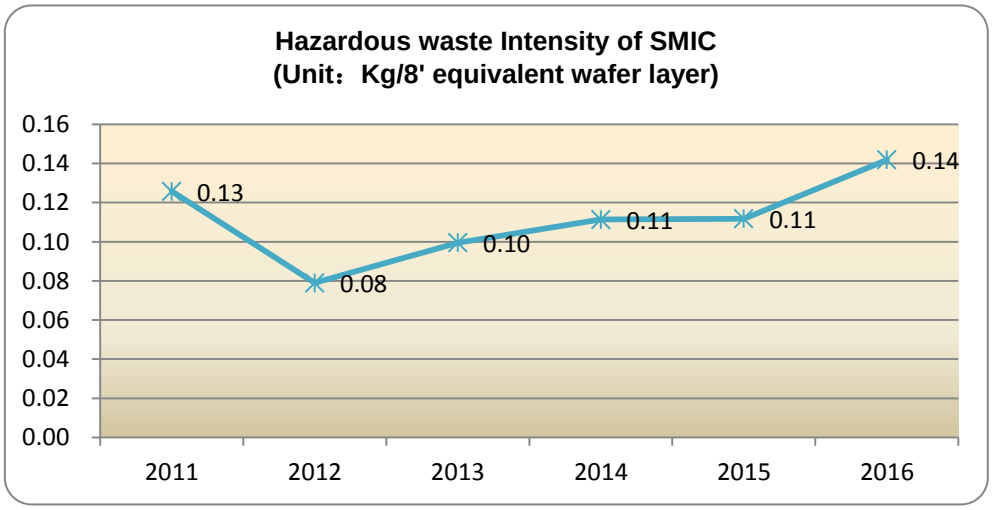
Gas Type	Total
Waste gas exhaust(Million cubic meters)	3,044,446
NOx exhaust(Ton)	32
SO_2(Ton)	1
VOCs(Ton)	13

SMIC waste gas treatment facilities are divided into two levels, that is, first, at the machine, and second at the central processing end. At the first level, production machine exhausts are processed through a local processing system, and after reaching a certain standard they can be classified into the gas collecting main lines. The waste gas collecting main lines are divided into general, acid, alkali, and organic. Acidic and alkaline waste gases are sent through their main lines, respectively, into the acidic central washing tower and the alkaline washing tower. Organic waste gas is sent into the zeolite runner system combustion process. After the central system treatments, waste gases meet the state regulation requirements and are discharged into the atmosphere. External institutions are entrusted by us to regularly monitor emissions and ensure that test results meet the national requirements. For specific monitoring data, please see the company's released information: http://www.smics.com/chn/about/esh.php.

9 Waste Management

SMIC has established a complete waste management system, and strictly complies with the laws and regulations of the state on waste management. The wastes produced by the production workshop are subdivided into acidic, alkaline, toxic, oxidizable, spontaneously

combustible and domestic waste categories distinguished by recycling bins of different colors. All the wastes are classified into recycling categories, and transferred to a centralized location for temporary storage to be recycled by qualified vendors. The waste liquids produced by the workshop are transferred through pipelines into temporary storage tanks, and are to be recycled by qualified vendors. Strict management has been instituted for our waste vendors with corresponding qualification requirements and minimum assessment scores. During operation, SMIC's ESH will be on site to supervise the work. Hazardous waste handlings are in strict accordance with the requirements of the regulations to manage the waste transfer. The hazardous waste intensity per unit output presented as the table:



10 Promotion of Environmental Awareness

In 2016, SMIC organized a series of environmental awareness promotion activities, covering posters, all user email, publicity on the company webpage, holding of special activities, etc.

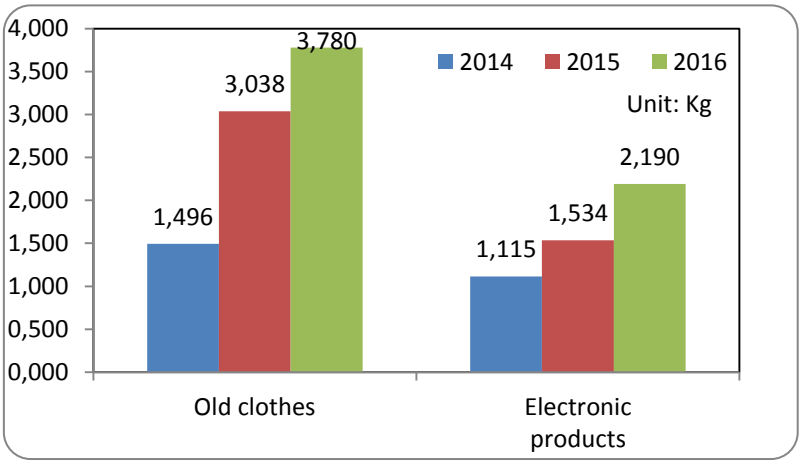
- On March 22, the publicity of "World Water Day" appealed to all employees to save water.
- On April 22, the publicity of "World Earth Day" appealed to all employees to practice low-carbon lives and conserve energy.
- On September 22, the publicity of "Car-Free Day" appealed to green transportation to reduce the emission of CO_2 and hazardous gases.

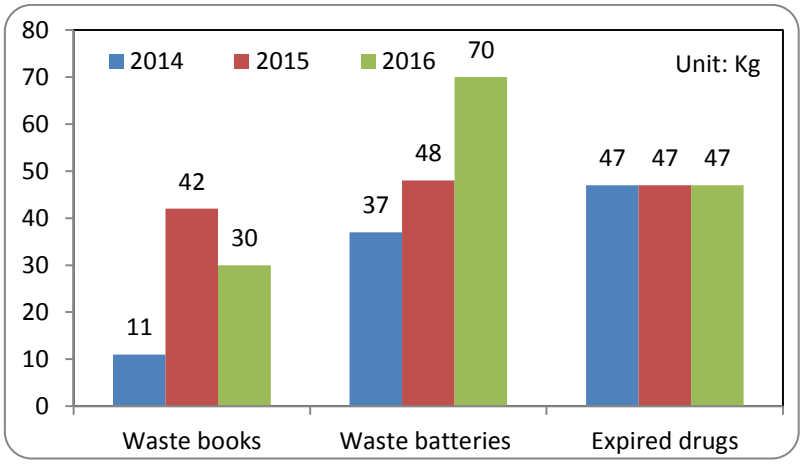
11 Employee Participation

Employees are encouraged and supported to participate in various environmental voluntary activities. In recent years, employees in all plants of SMIC held the activities, such as second-hand market, garbage cleanup, tree planting, and species conservation activity, etc.

11.1 Second-hand Market

In 2016, our Shanghai Plant, Tianjin Plant and Shenzhen Plant held a number of special second-hand market activities to promote waste utilization. The number of people involved and the results were more than last year.





11.2 Green Office

SMIC promote energy conservation and waste sorting and recycling program in all office. Set up sorting recovery facility; Advocate double-side printing and avoid unnecessary printing; Promote green lighting project, replaced the ordinary fluorescent lamp with an energy-saving lamp; Encourage staffs green commuting, take the elevator less and climb the stairs more; Participation in sustainable development actions actively.

11.3 Million Trees Planting Project

The Million Tree Planting Project began in 2007 with the aim of raising environmental awareness and showing individuals how to reduce their impact on their surroundings. The project enabled such individuals to plant trees in Inner Mongolia with the goal of planting one million trees in the arid areas by 2014. This goal was achieved in 2012, ahead of schedule. As of 2016, our school had been part of the project for ten years, and the Environment Club had planted more than 1,000 trees in Inner Mongolia.

11.4 Protection of local biodiversity

With the progress of urbanization and the invasion by alien species, the survival space of local species is being severely compressed, accompanied by declining number of species. In this context, it's of increasingly vital importance to protect biodiversity, maintain ecological balance and build a healthy ecosphere with rich species.

On November 12, 2016, nearly 80 employees from SMIC organized the local species conservation activity in Nanqiao Town of Fengxian District. The activity received the plantlets, fruits and seeds of a dozen of local plants, which would be conserved in special areas for the breeding of more local plants, thus to contribute to the cause of local biodiversity, ecological and environmental protection.