Sustainable development- The memory IC provider of pursuit environmental friendly. (We deliver Green

The green memory IC provider that pursue sustainable development

Facing the changing of climate and the environment, as a member of the global village, we have the responsibility to protect the environment. Therefore, we are pursuing to be a green memory IC provider that emphasizes the sustainable development. In order to reaching the goal of sustainability, and the environment issue that recycling interest groups concerned, we carry out the plant of sustainability in every level, including environmental friendly design, products, management, education and investments.

We uphold the spirit of ISO 14001 environment management system, we promise to provide and maintain the working environment that superior to the law and the industry practice, and dedicate to reach the international environment standard, by the improvement to prevent any possibility environment risk.

Winbond keeps the concept of the global village member and base on the concept of environment design, we devote our effort to the development of green products, and energy saving low-pollution electronic product, to reach the goal of business sustainable development.

On the production operation, through the way of operation optimization, in order to reach the goal of lower the consumption of water and electronic, and consumption of commodities and the emission of pollution. Every essential environmental licenses are legally received and managed by the professional person. The related waste water, gas and waste during the manufacture, have been considered into a proper recycling system in the beginning of the factory design to lower the consumption of the resource and polluted emission.

We try our best in the environment protection, we are rewarded for Enterprise Environmental Protection Award, National industrial waste minimization excellent performance awards, the Honor of Excellent Group, the excellent factory of industrial voluntary reduce the emission greenhouse gas, etc.

On the other hand, we also combine OHSAS 18001 into safety and health, risk management business, and integrate these businesses as an environment, safety and health management system, in order to raise the performance of environment management.

On the future prospect, Winbond will continue on the spirit of corporate sustainability, at the same time, to put proper environment expend for the highly raise environmental awareness. We use innovated technology to raise the efficiency of appliance processing; we work on lower the impact of the manufacture activities for the environment.

To raise the efficiency of consumption of energy and resource, we all set up the key indicators for each consumption of the important resources, including water, electronic, etc. Set up the goal and implement the management plan every year. Every season, the result of implement and the condition of goal achievement, will be monitored by general manager. We have considered a proper recycling system in the beginning of the factory design. The waste water, heat, and waste of operation, recycle, reuse will be the first consideration. We have efficiently refused the resource consumption and the environment impact.

We have received the approval of ISO 14001 environment management system, implement internal inspect and external inspect by the international certification company every six months to ensure the system runs properly.

Winbond certainly follows the environment regulation of both domestic and international. Establish environment management department and staff to process environment related work, for instance, air pollution, waste water, industrial wastes and hazardous chemicals.

The staff qualification and operation license are all accordance with government regulation and report to the authority regularly and also pass the inspection by the government regularly and irregularly.

Winbond take note of the impact for the environment and the operation that caused by greenhouse effect and the climate change. Despite of the management plan of reducing the consumption of water, electronic resources, commodities, reduce the wastes, etc. we reach the goal of energy saving and carbon reduction. Since 2000, we participated the plan of reducing greenhouse gas PFCs emission in the Taiwan Semiconductor Industry Association (TSIA) and the World Semiconductor Council (WSC). By the adjustment of the manufacturing procedures, using alternative gas, cutting down PFCs appliance, to reduce the emission of greenhouse gases. Our PFCs reduction result is passed by the certification of the international certification company every year. Besides, in order to establish the references of energy saving and carbon reduction, Winbond carry out greenhouse gas verification and register the reference on Taiwan National GHG Emission Registry, Taiwan Environmental Protection Agency (EPA).

Winbond environment policy

- [Environment, health and safety policy](#)

Climate change strategy

Climate Change has become a main issue of an investor and enterprise, therefore, the management of carbon emission and the disclosure of carbon emission information are more important nowadays. Despite verification the emission of greenhouse gas, and the reduction plan, Winbond spontaneously reveal the result and the communication bridge, including Winbond website, client and investors survey, or participate the organization run by Winbond directly, for instance TSIA, WSC, The Association of Science Park.

Verification and investigate of greenhouse gas emission

According to GHG Protocol (The Greenhouse Gas Protocol) and ISO 14064-1, Winbond has established the complete list of the greenhouse gas emission. The verification is ranging from, Scope 1-(direct emission of greenhouse gas), Scope 2-(indirect greenhouse emission), the verification of qualitative and quantity, Scope 3-other indirect greenhouse gas emission, the main emission qualitative verification. According to the statistics, the greenhouse gas emission of Winbond is mainly from the outsourced electric power that company demand. CO_2 will be generated by the process. Also produce greenhouse gas while manufacturing semiconductor by using PFCs (Perfluorocarbons) including, CF_4, C_2F_6, SF_6, NF_3, CHF_3, C_3F_8, C_4F_8, etc.

Until 2010, our factory in Central Taiwan Science Park, the result of greenhouse gas emission quantities has passed the examination, confirmed by the third party. Every factory reaches the goal of confirming the greenhouse gas emission.

Carbon footprint

Winbond tracks and monitors every environmental impact information while manufacturing process of IC Wafer, help the clients finish organizing, and develop green products and the environment information of supply chain.

March 2010, Winbond achieved the carbon footprint examination of 12" wafer products, followed by international carbon footprint standard "PAS2050" and "ISO 14067CD". In the future, Winbond will be based on carbon footprint and EPD (Environmental Product Declaration). To promote green product supply chain plan more enthusiastically, help the clients manufacturing lower environmental impact green products, in order to increase the sustainable competitiveness of entire supply chain.

Reduce greenhouse gas

The carbon footprint of our products is mainly from the carbon emission of manufacturing stage. The mainly emission of manufacturing stage comes from PFCs and electric power. Therefore, focusing on reducing PFCs gas and electric power not only reduce the overall amount emission of greenhouse gas efficiently but also can reduce the carbon footprint of products.

The promotion of reducing PFCs plan and measurement, as follows:

- The usage of tool and its prevention facilities measurement of reduction rate and improvement.
- To carry out the evaluation of the usage of PFCs tool.
- To carry out the selection evaluation of the new PFCs processing prevention facilities.

Environmental performance indicator

環境績效指標

1.Electricity Usage

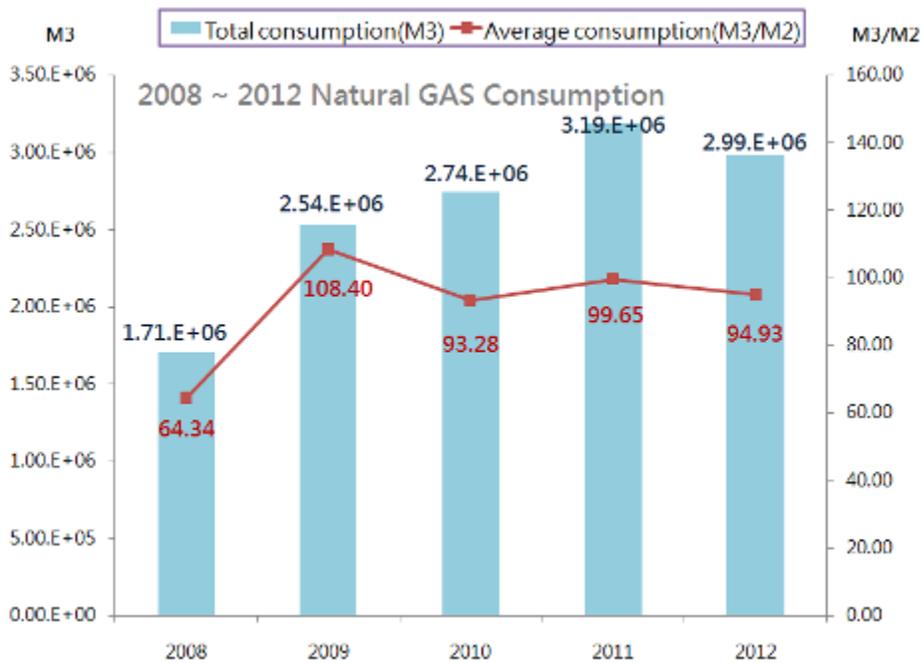Electricity Usage Trends：

2008 ~ 2012 Electricity Usage
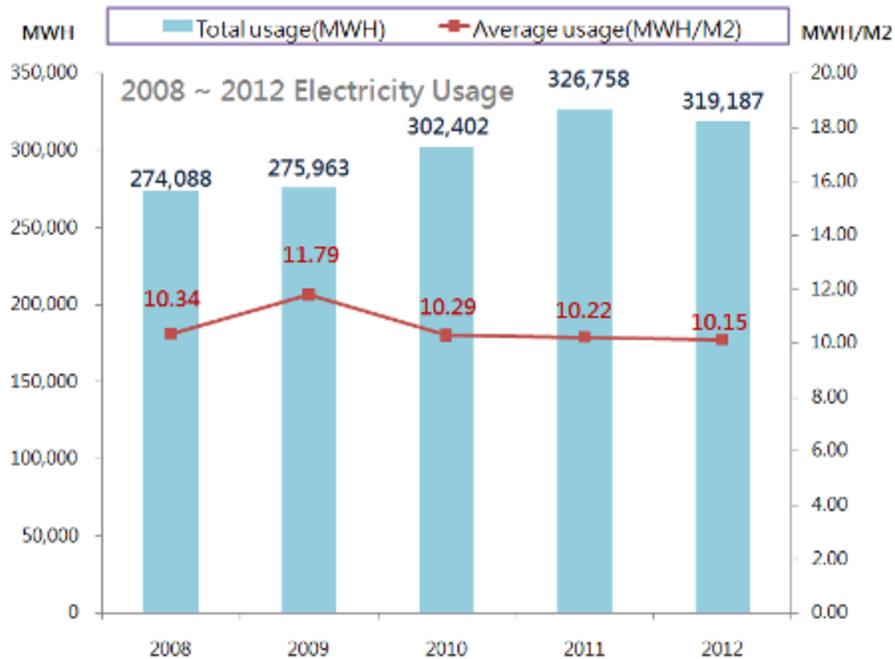
Ps. The statistic is the power usage of CTSP Site.

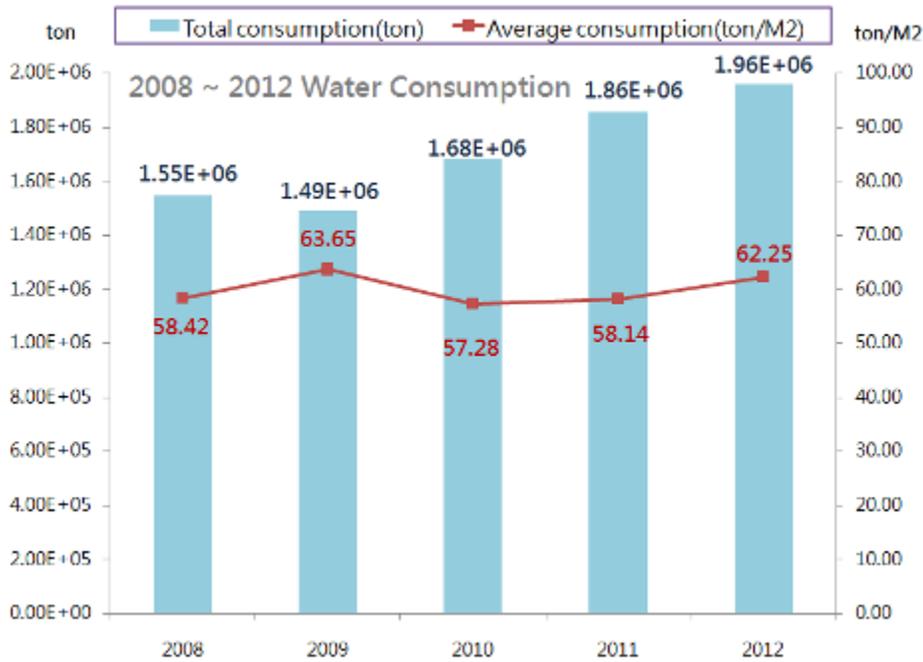## 2.Natural Gas Usage

Natural Gas Usage Trends :

2008 ~ 2012 Natural GAS Consumption

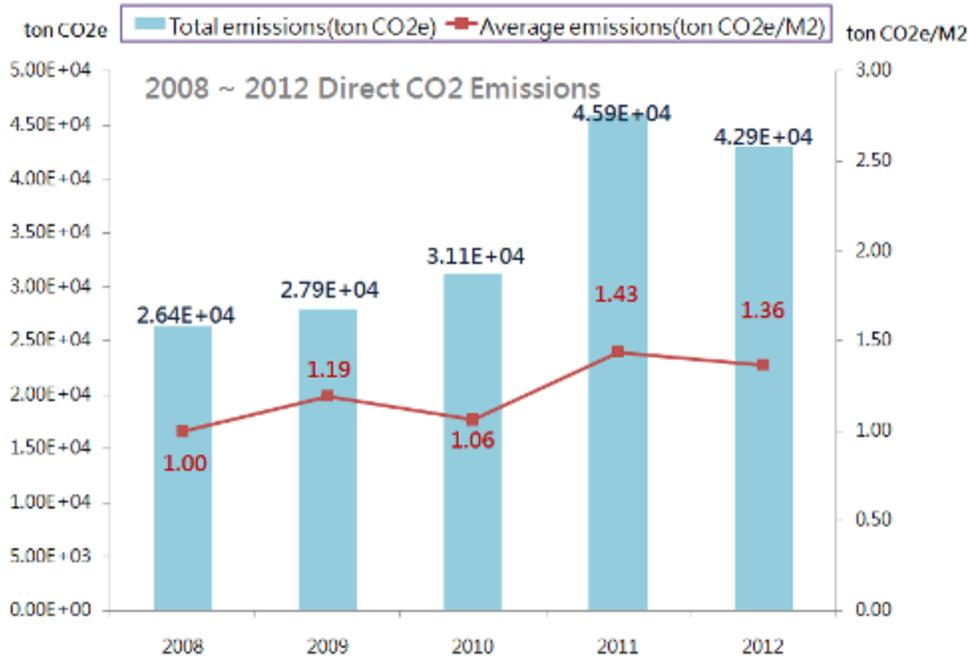Ps. The statistic is the usage amount of CTSP Site.

3.Water Usage

Water Usage Trends :

Ps. The statistic is the usage amount of CTSP Site.
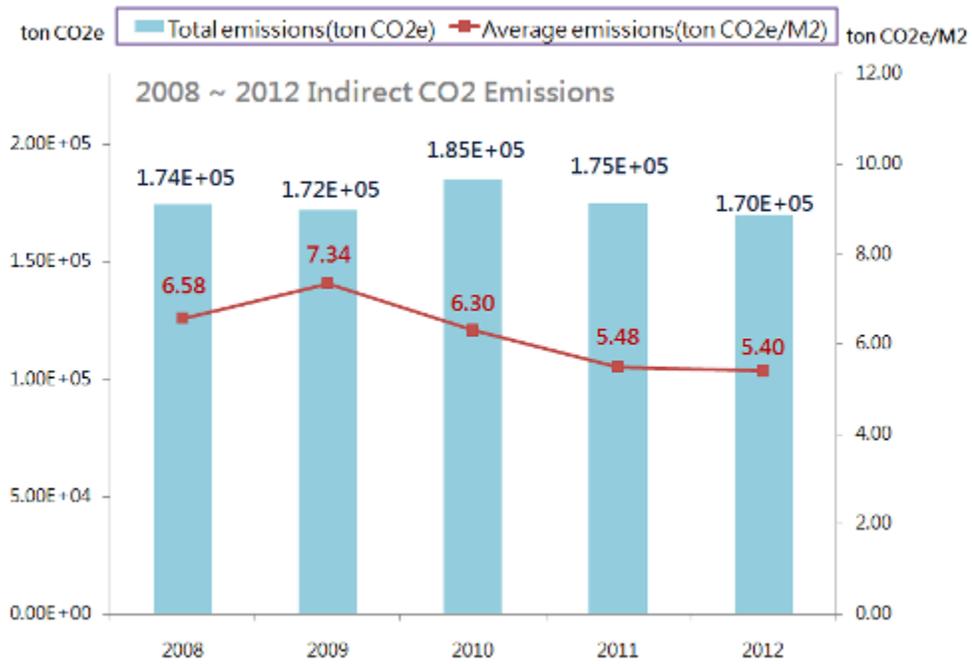
4.Greenhouse Gas: Direct GHG Emissions

CO2 Emissions Trends :

Ps. Direct emission quantities including PFCs emission quantities and other direct emission quantities.
The statistic is the amount of CTSP Site.

5.Greenhouse Gas: Indirect GHG Emissions

CO2 Emissions Trends :

Ps. In direct emission quantities are mainly the emission quantities of CO2, generated by the outsourcing electric power.
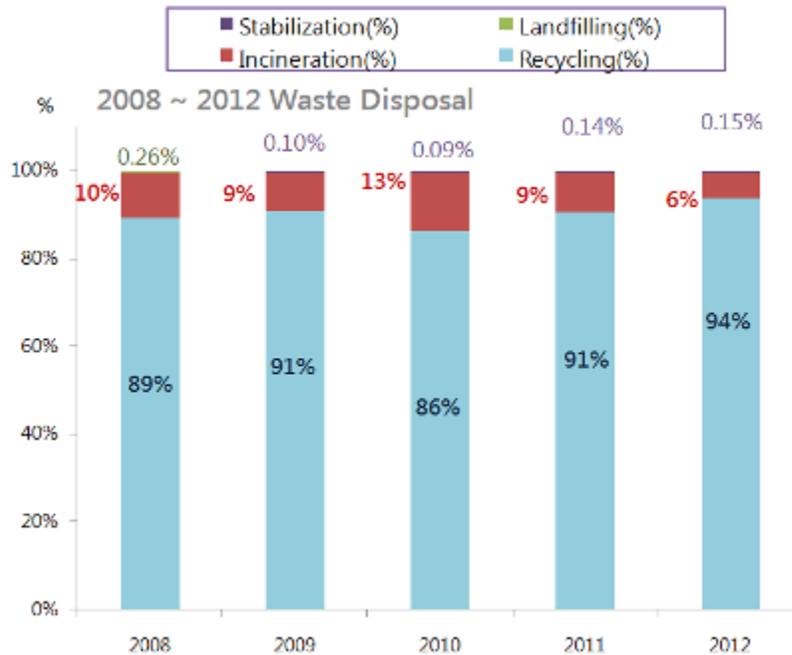Ps. The statistic is the amount of CTSP Site.

6.Waste Generated

Waste Generated Trends :

Ps. The statistic is the amount of CTSP Site.
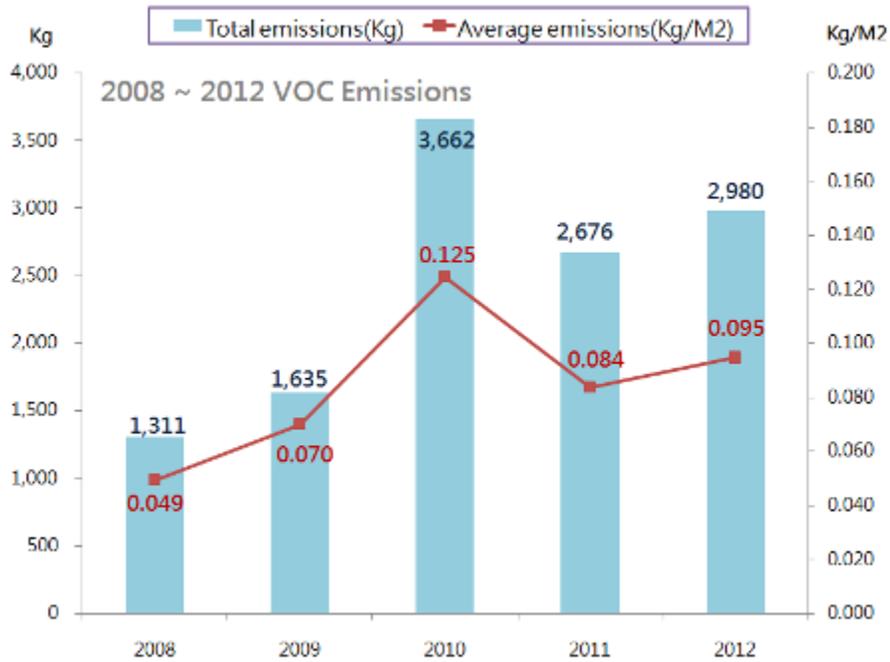
7.Waste Management Methods

Waste Management Methods Trends：

Ps. Ps. The statistic is the amount of CTSP Site
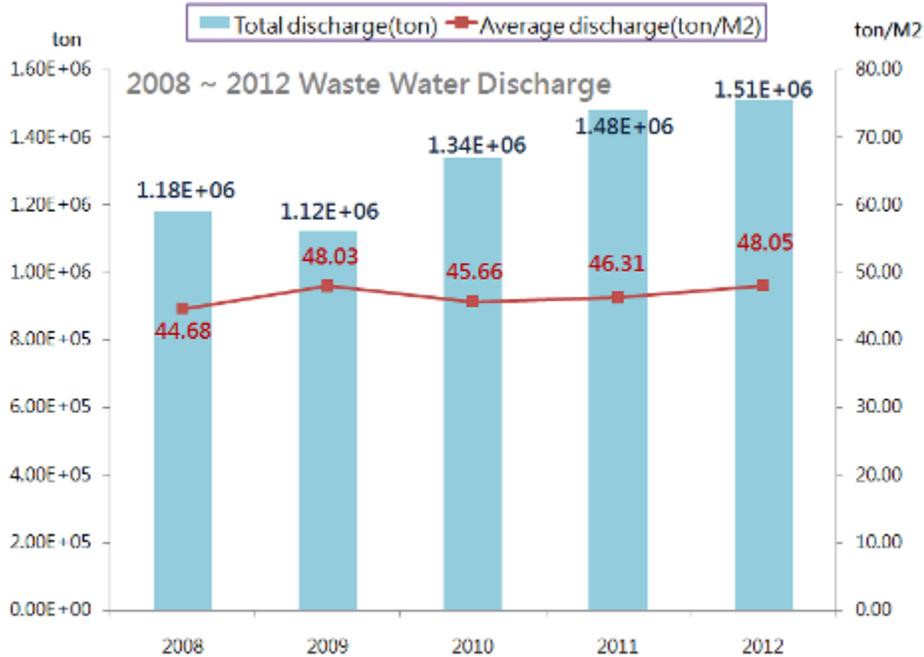
8.Volatile Organic Compound (VOC) Emissions

VOC Emission Trends :

Ps. The statistic is the amount of CTSP Site

9.Waste Water Discharge

Waste Water Discharge Trends :

Ps. The statistic is the amount of CTSP Site