

ENVIRONMENTAL REPORT

2010



TOSHIBA HOKUTO ELECTRONIC DEVICES (THAILAND) CO.,LTD.

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<<Scope of Application>>
 This report covers Toshiba Hokuto Electronic Devices (Thailand) Co.,Ltd. within the scope of accreditation to Environmental management system (ISO14001).

MESSAGE FROM THE PRESIDENT

As one of Toshiba Group member and one of “Global Enterprise”, our company will continue steady activity for realization of sustainable society In Thailand along Toshiba’s “Environmental Vision 2050”.

Toshiba Hokuto Electronic Devices (Thailand) Co., Ltd. is manufacturing and selling Magnetrons and Thermal Print Heads as Thailand company of Toshiba Hokuto Electronic Corporation’s. We have introduced all advanced technology to use in our manufacturing process to ensure the quality of product and strive to be excellent. We have been a leading Magnetron (for microwave) manufacturer and we have realized mass-production of new ultra high efficiency design. And we also introduced Thermal Print Head for Dye sublimation printer which prints onto media directly and is unlike former printer of Silver Halide which uses a lot of chemicals. We are very proud to provide our Magnetron and Thermal Print Head with contribution to global warming protection.



Toshiki Azuma
 President and CEO

With support from relevant community; government, Thai Toshiba Group, MD and THD, we continuously strive to promote environmental management and activity.

ABOUT COMPANY

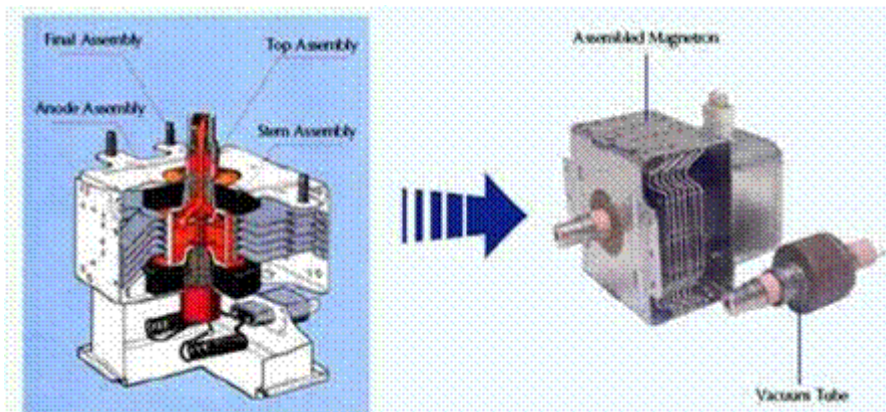
- **Company name :**
 Toshiba Hokuto Electronic Devices (Thailand) Co.,Ltd
- **Established :** February 1, 2003
- **Capital :** Baht 386 Million
- **Shareholders :**
 Toshiba Hokuto Electronics Corporation 100%
- **President**
 Mr.Toshiki Azuma
- **Employee :** 682 Persons (31th Mar’11)
- **Products :** Magnetron, Thermal Print Head
- **Sales**
 Direct Export (MAG) 70%, (TPH) 100%
 Indirect Export (MAG) 30%, (TPH) 0%
- **Area** Site Area : 15,700 sq.m.
 Floor Area : 12,924 sq.m.



ABOUT COMPANY

◆ **Product : Magnetron**

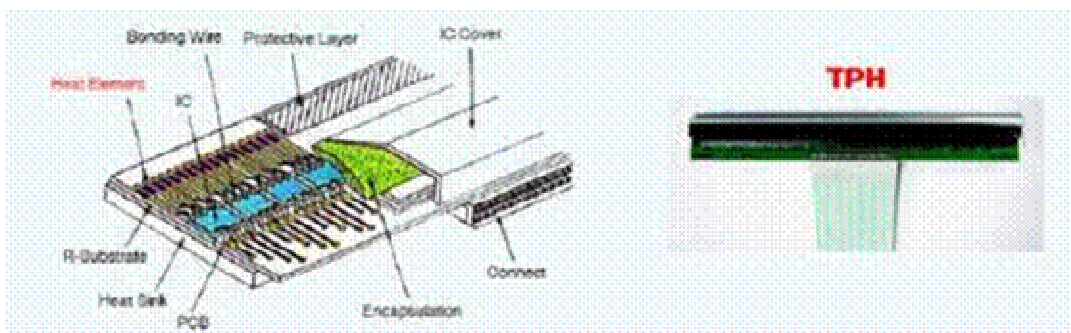
Magnetrons generate microwaves and oscillate water molecules inside of food at high speeds, producing friction heat and warming foods. Magnetrons thus function as “hearts” of microwave ovens. We produce over 10 million pieces of magnetrons a year and supply them to the microwave oven manufacturers all over the world. We always pursue the best quality and reliability in order to contribute to all of our customers’ products. Our development of noise suppressed and high efficiency magnetrons realized better quality of life for human beings.

◆ **Product : Thermal Print Head**

TPH (Thermal Print Head) is a device for digital printing. TPH selectively applies heat on recording media which produce images in conjunction with heat-sensitive paper or ribbons. Structure of TPH

The structure of TPH are as below.

- 1) R-Substrate: Heat elements for transfer heat to recording media are formed on it.
- 2) IC: IC for driving the heat elements by on/off control.
- 3) PCB: A print circuit board interface to external signals for driving the IC.
- 4) Heat Sink: A supporting plate to support the above parts and with an exoergic property.



ENVIRONMENTAL POLICY

THDT MANAGEMENT POLICY

Toshiba Hokuto Electronic Devices (Thailand) Co., Ltd. (THDT), a manufacturer for Magnetron and Thermal Print Head (TPH) is committed towards providing the competitive high quality of products, minimizing any environmental impacts from our operations, recognizing on occupational health and safety to employees and for achievement of the highest customer satisfaction in our business.

This will be achieved by implementing through the Quality, Environment, Occupational Health and Safety Management Systems.

Quality Policy

1. Consistently provide products that conform to the requirement of our customers, act and regulatory requirements applicable to the product.
2. Continually improve the quality of products and services.
3. Regularly set and review the quality objectives, targets and act to achieve them.
4. Consistently promote the education on quality awareness to all employees.
5. Adequately provide on management of resources which need for operating with ISO 9001 standards.

Environment Policy

1. Continually improve the environmental aspects, to prevent any pollution from all business operations.
2. Deliberately manage on environment comply with the applicable environmental legal requirements and other local authorities requirements.
3. Regularly set and review the environmental objectives, targets and act to achieve them.
4. Efficiently promote the activity on conservation of environmental resources and energy saving, including provide for environmental products as well as environmental aspects by;
 - 4.1 Reducing the chemical substance in product which impact to any environment.
 - 4.2 Promoting the manufacturing of any product based on awareness of earth's resources which being finite.
 - 4.3 Promoting the reduction of CO₂ emission as for a measure against global warming.
 - 4.4 Achievement of zero emission operation on waste product.
 - 4.5 Promoting the reduction in using and emission of chemical substance to prevent environmental pollution.
5. Consistently promote on environmental awareness and education to all employees.
6. Adequately provide for any manufacturing resources and management it in according to ISO 14001 standards.
7. Challenge to become an environmental excellent company and leader in environmental performance in Thailand.
8. In order to conserve the biodiversity, our principles are ;
 - 8.1 Promoting our employees awareness of biodiversity conservation.
 - 8.2 Appropriately involving with local community and other institutes in the biodiversity conservation activity.

Occupational Health and Safety Policy

In our business conduct, we place the highest priority on human life, safety and legal compliance, and we make the concerted efforts throughout our operations to create the utmost safety and occupational health for the environment in workplace.

1. To Position on health and safety as one of the most importance issues for management, and strive to prevent occupational injury and spread of contagious disease in workplace and achieve continually of improvement in occupational health and safety management.
2. To follow the principle of law and others requirements which relating a company on occupational health and safety management.
3. To set up the objectives and targets, and also act decisively to achieve the;
 - 3.1 Eradication of occupational accidents and contagious disease in workplace, together with making the mitigation of risk that may cause of such accidents and diseases.
 - 3.2 Maintenance and promotion of physical and mental health condition in order that all employees enable to lead their individual capabilities into the full work.
4. To expect our suppliers and subcontractors become aware of the importance for occupational health and safety and give hand to mutual cooperation, and provide them with support in doing, so as to ensure the safety and occupational health against everyone who involved in company's business.
5. Proactively disclose our commitment to occupational health and safety and the results we achieve, in order to contribute to society's enhancement of health and safety management standards.
6. Continually originate self-conscious and promote education on occupational health and safety to all employees.
7. Adequately provide on management of resources which need for operating with TIS/OHSAS 18001 standards.

This policy will be communicated and disseminated to all employees and make it available to the public.



MR. TOSHIKI AZUMA
THE PRESIDENT

THDT
26 May 2011

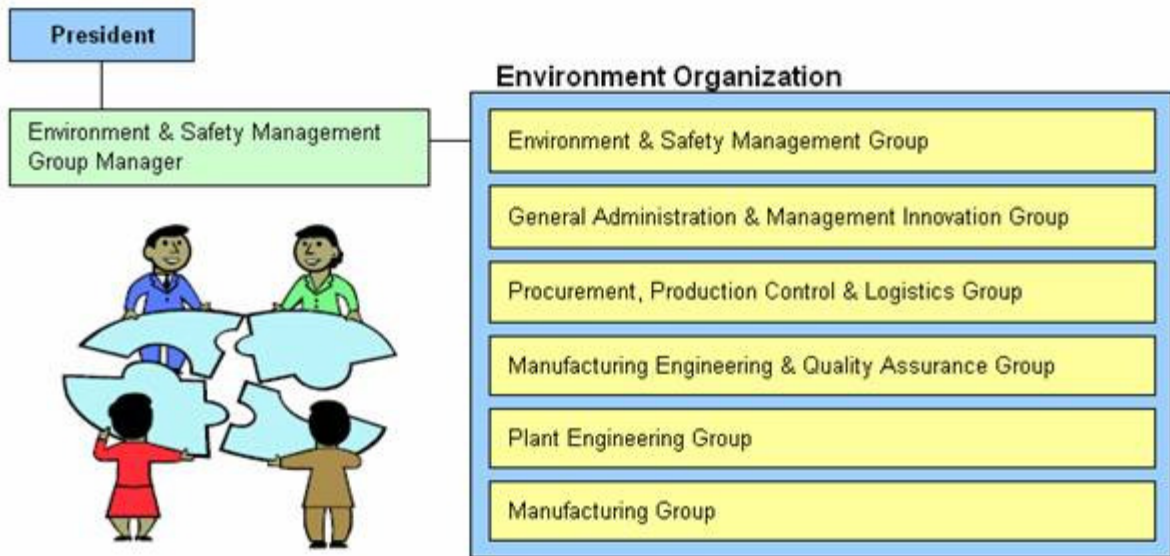
ENVIRONMENTAL MANAGEMENT SYSTEM

◆ Environmental Management

Toshiba Hokuto Electronic Device (Thailand) Co., Ltd. established environmental management system in Mar. 2001 and strived to maintain environmental conservation

◆ Environmental Organization

To perform consistent environmental activities, we have established environment organization within our company and committed sustainable development. Also, Environment Control Group was established in 2007 and reorganized to new group “Environment & Safety management group” in 2011.



◆ ISO14001 Certification

We obtained ISO14001 certification with our awareness of ISO14001's effectiveness in order to promote environmental activities and to improve consistently. In 2004, we revised our regulation and we were certificated with revised regulation.



**ISO14001:2004
Certificate Number :
TH10000215**

**This certificate
is valid until
2 April 2013**



ENVIRONMENTAL AUDIT

◆ Environmental Audit

To confirm that environmental management system is operated appropriately, internal environmental auditors and external auditors from certification authority implement environmental audit regularly.

“External Audit”

Audit by external certification authority to check compatibility and effectiveness according to ISO14001 we obtained.

“Toshiba Audit”: Toshiba Comprehensive Environmental Audit System
Audit mainly covers progress of Toshiba voluntary plan and management of environmental facilities based on Toshiba group’s unique audit system.

“Internal Audit”

Audit by in-house auditors to self-check compatibility and effectiveness of our environmental management system based on Toshiba Hokuto’s own environmental audit regulation.



ENVIRONMENTAL EDUCATION

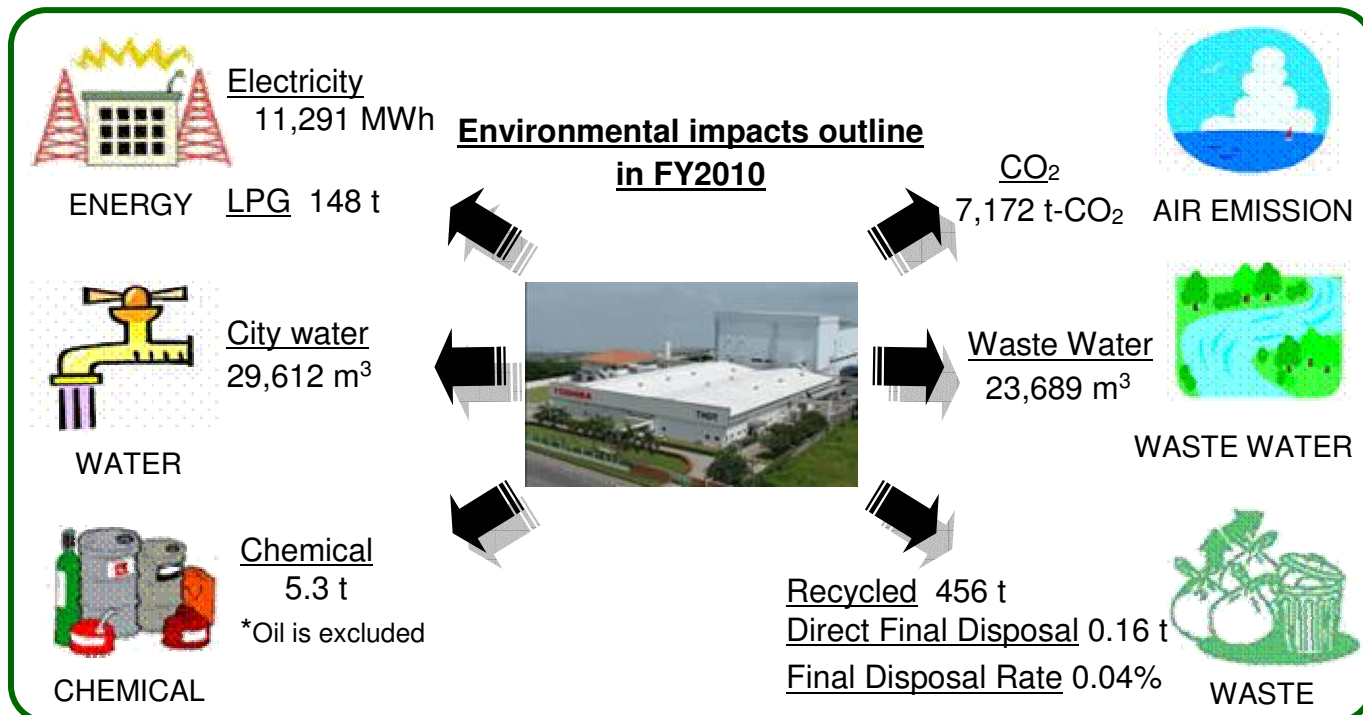
◆ Environmental Education

We provide employees environmental education regularly to promote environmental activities consistently. Also, training has been performed for envisioned emergency situation at facilities and manufacturing processes with high environmental impacts.



ENVIRONMENTAL IMPACT

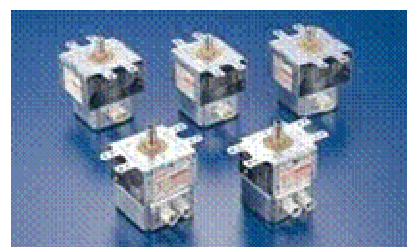
We are responsible to our business operation which causes the environmental impacts such as use of energy, water and chemical substances and emission of gas, wastewater and waste. Targeting to be an environmental conscious company and to improve manufacturing, we will be aware of environmental impacts of our business activities and will continuously implement operation to reduce those impacts as much as possible.



Environmentally conscious product : New Super High Efficiency Magnetron

We have developed the new magnetron 2M303 for a microwave oven which realized 75 % of efficiency highest in the industry and start mass production in May 2007.

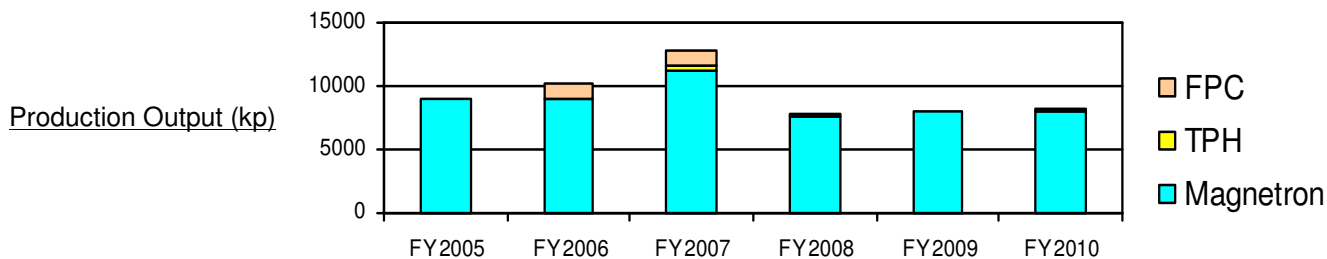
In Japan a microwave oven is specified as energy-saving product from 2008, and improvement in efficiency is urgently necessary. And 4 to 5 hundred million microwave ovens are in use all over the world. As total energy consumption for all microwave ovens would be huge, improvement of a magnetron in efficiency can contribute to large energy saving. According to efficiency increase of a magnetron from 71% to 75%, 6% of increase in output power of a microwave oven or 6% of decrease in input power (power consumption) in case of keeping the same output power can be expected.



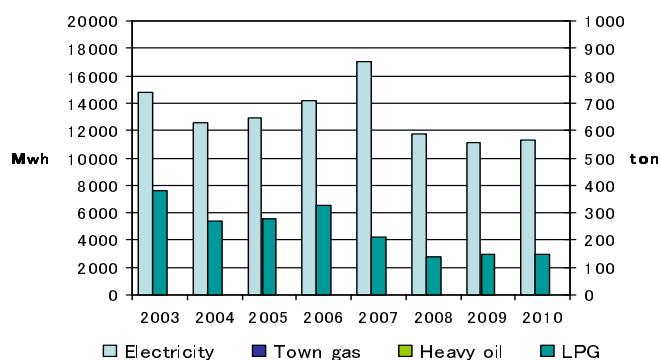
Magnetron for Microwave Oven

For instance, in case of a microwave oven of 1.4kW input power, decrease of 84W can be expected. And energy saving of 8.4kWh in case of 100 hours use a year can be expected.

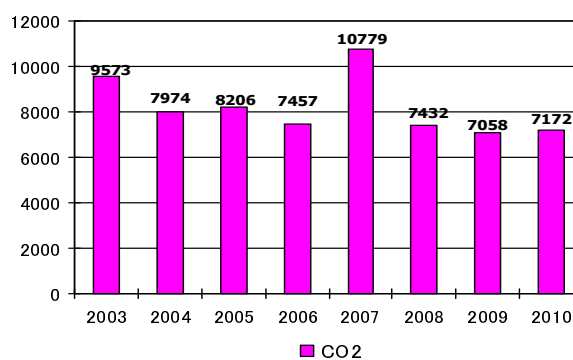
ENVIRONMENTAL LOAD DATA



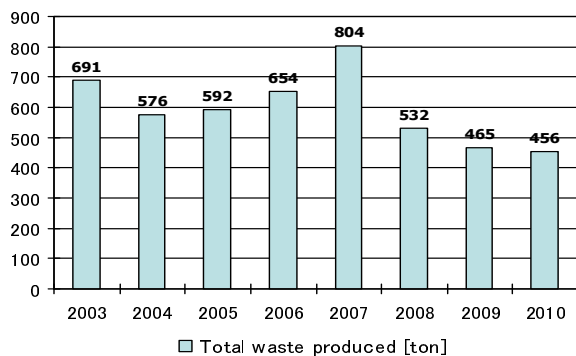
Energy usage (Electricity unit: Mwh, LPG unit : ton)



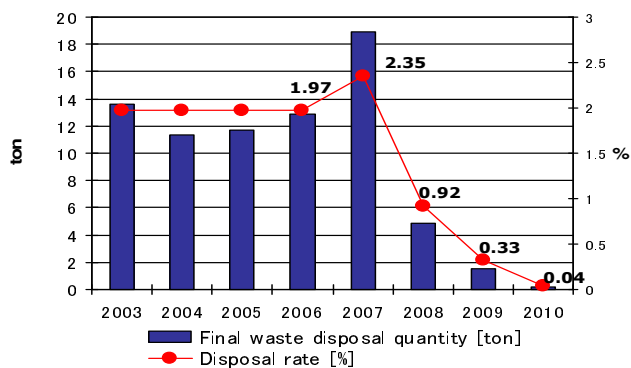
CO2 emission (unit: ton-CO₂)



Total waste produced (unit: ton)

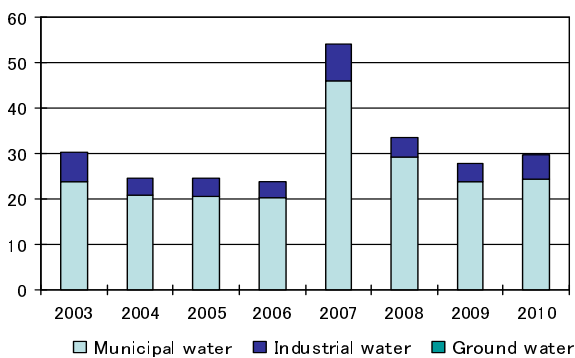


Final waste disposal quantity & disposal rate (unit:ton,%)

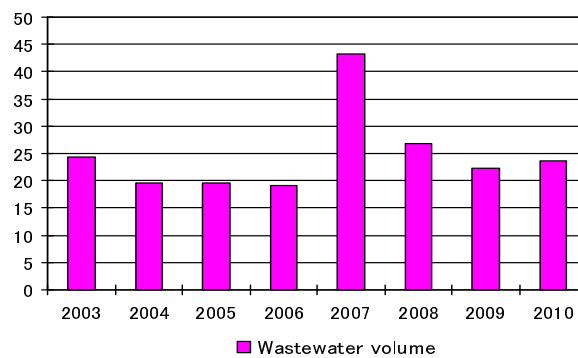


Major wastes: metal scrap, wood, plastic, paper, used oil, contaminated clothes etc.

Water usage (unit: 1,000m³)



Drain discharge volume (unit: 1,000m³)



ENVIRONMENTAL VPE TARGET & RESULTS

◆ CO2-emission
(t-co2 / MB)

	FY2006	FY2007	FY2008	FY2009	FY2010
Forecast	4.63	5.90	4.59	4.50	4.276
Actual	4.24	4.74	4.75	4.36	4.251

◆ Final disposal rate
(%)

	FY2006	FY2007	FY2008	FY2009	FY2010
Forecast	4.50	2.50	2.00	0.50	0.29
Actual	2.00	2.40	0.92	0.33	0.04

◆ Disposal amount
(t / MB)

	FY2006	FY2007	FY2008	FY2009	FY2010
Forecast	0.320	0.380	0.376	0.344	0.2845
Actual	0.370	0.354	0.340	0.287	0.2702

◆ Chemical
handled amount
(t – year)

	FY2006	FY2007	FY2008	FY2009	FY2010
Forecast	1.138	6.262	6.936	5.500	4.510
Actual	0.983	7.888	4.596	3.780	5.306

ENVIRONMENTAL ACCOUNTING

- ◆ The amount of the investment and cost concerning an environmental activity are totaled, and the effect on the cost is reflected.

Total Cost for FY2010

Classified	Contents	[KB]
1.business area costs	1.Pollution prevention costs	Preventing air,water soil pollution 315
	2.Global environmental protection costs	Global environmental protection, Ozone layer protection 163
	3.Resource circulation costs	Resource utilization, Reducing waste generated 51
2. upstream/downstream costs	Green products, recycle	0
3. administration cost	Environmental Education, Conference, Audit	194
4. R&D costs	Environmental conscious products	0
5. social activity costs	Area environment support Contribution	247
6. environmental remediation cost	Soil polluted repair	0
Total		970

Total Benefit for FY2010

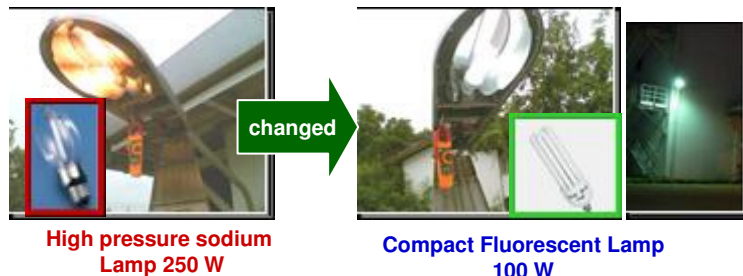
Classified	Contents	[KB]
A) Actual benefits	Environmental impacts can be clarified quantitatively and easily converted into monetary value	121.1
B) Assumed benefits	Environmental impacts can be clarified quantitatively and converted into monetary value based on certain assumptions	200.0
C) Customer benefits	Reduction of environmental impacts during use by customers, such as reduction of power consumption, and other economic benefits are calculated	0
D) Risk prevention benefit	To what extent risks are reduced after the investment compared with before the investment is calculated	50
Total		371.1

ENVIRONMENTAL ACTIVITIES

◆ Measures for energy saving

1. Compact Fluorescent Lamp for street.

FY2010, we changed street lamps around factory building **total 18 lamps** from high pressure sodium 250W to **compact fluorescent lamp 100W** which can save energy about **14,980 kWh/year**.



2. T5 Fluorescent Lamp for lighting in factory.

Modified and changed type of fluorescent lamps of factory lighting from FL T8 (36 watts) to **FL T5 (28 watts), total 301 set** in FY2010 which can save energy about **31,949 kWh/year**.



◆ Environmental Good Governance in 2010

THDT participated the Environmental Good Governance Pathumthani Project in FY2010 which continued to implementation and coordinate with BIP (Bangkadi Industrial Park), Pathumthani Provincial Industrial Office and Bangkadi Municipality.



Certification of Environmental Good Governance in 2010



Mr. T. Azuma [THDT president] received certification from Mr. Panthep S. [Pathumthani Vice Governor] on 16 Sep'10.

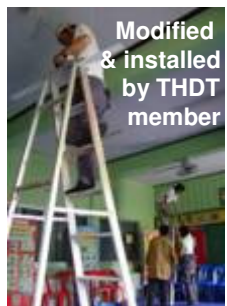
◆ T5 fluorescent lamp promotion at school

- Purpose :**
- 1) To promote CSR activities of "Global warming reduction" by fluorescent lamps changing from T8 (36W) to T5 (28W) which can reduce 30% of energy consumption.
 - 2) Good communication with students about environment & energy conservation for more awareness and understanding.
 - 3) Environmental communication with local resident.

FY2010, we replaced new T5 fluorescent lamps total 76 lamps (23 KB) at school building which can save energy consumption of lighting about 1,500 kWh per year and conducted training to students for more awareness about environment & energy conservation.



Mr..T Azuma / President hand over T5 FL to Mr.Tanate L. / Director of Wat Bangkadi School on 2 Aug'10.



SOCIAL CONTRIBUTION ACTIVITIES

◆ Aluminum recycling

Project : Aluminum recycling for prosthesis in THDT



In FY2010, THDT employee collected & donated aluminum part of beverage cans total weight 14.4 kg. to Bangkok Can Manufacturing Co.,Ltd which under Prosthesis foundation.



Deliver to BCM for recycle on 31-Mar-11



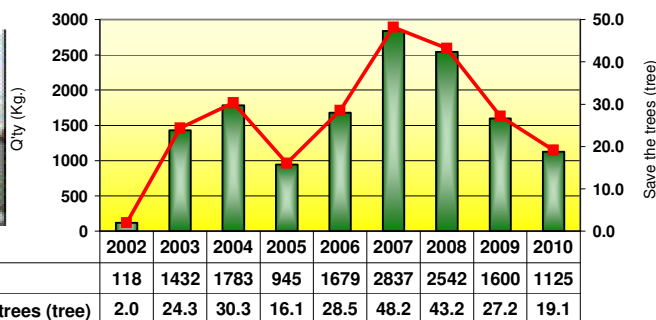
◆ Recycle Paper for Trees

To donate used paper for recycle paper which can reduce waste amount, save tree and energy saving.

There are amount of recycle paper donation total 14,061 kgs. , saved 239 trees since 2003 until 2010 (Mar'11).



Environmental promotion Certification Media Center for Development Foundation



◆ Tree Planting

We're organized the tree planting activity in THDT on company foundation day, February 1st, 2011.



Tree name : Pine (Juniperus junghuniana Mig)
Number of trees : 12 trees



TOP MANAGEMENT & THDT EMPLOYEES REPRESENTATIVE OF ALL GROUP

HUMAN RESOURCES DEVELOPMENT

◆ Education and Training

Education and Training are important part of human resource development, therefore, we provide various program of training for all functions and levels of employee. In-house training programs, technical training programs or even overseas training course for engineers and managers.



MEASUREMENT AND MONITORING

Wastewater Treatment

THDT has a treatment system for waste water from production by neutralization. The company installed pH meter at Factory outlet in order to check wastewater quality discharge which flow to central waste water treatment of Bangkadi Industrial Park [BIP].

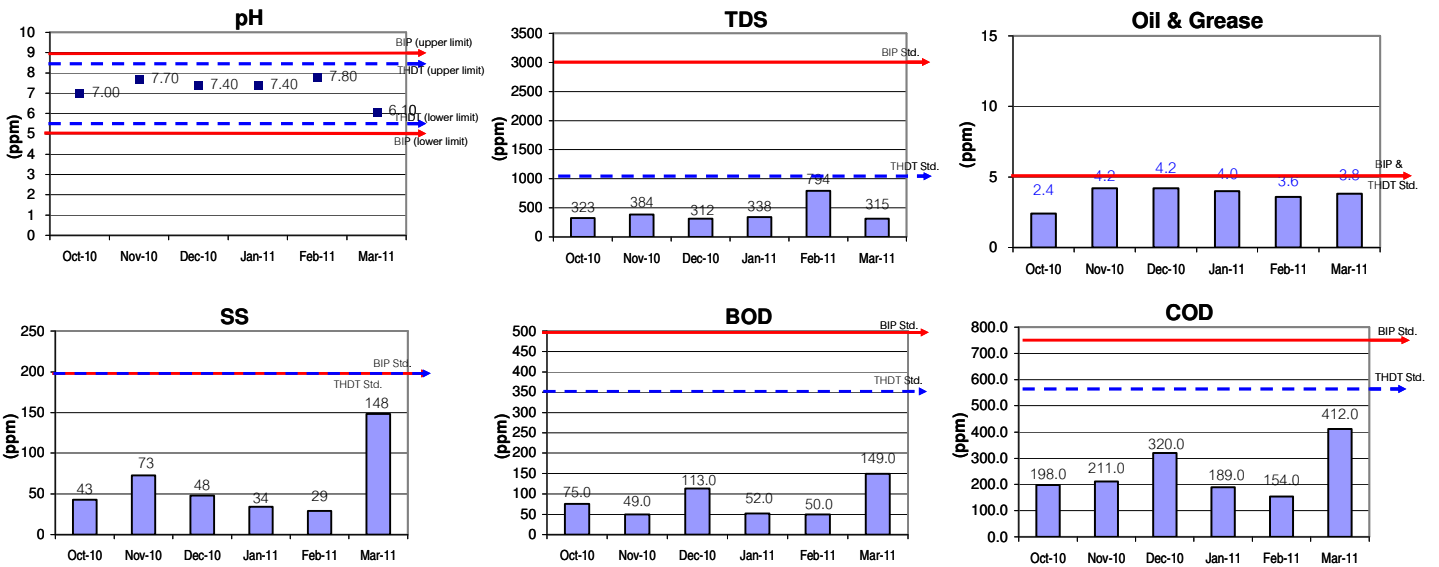


W/WTP (Neutralization)



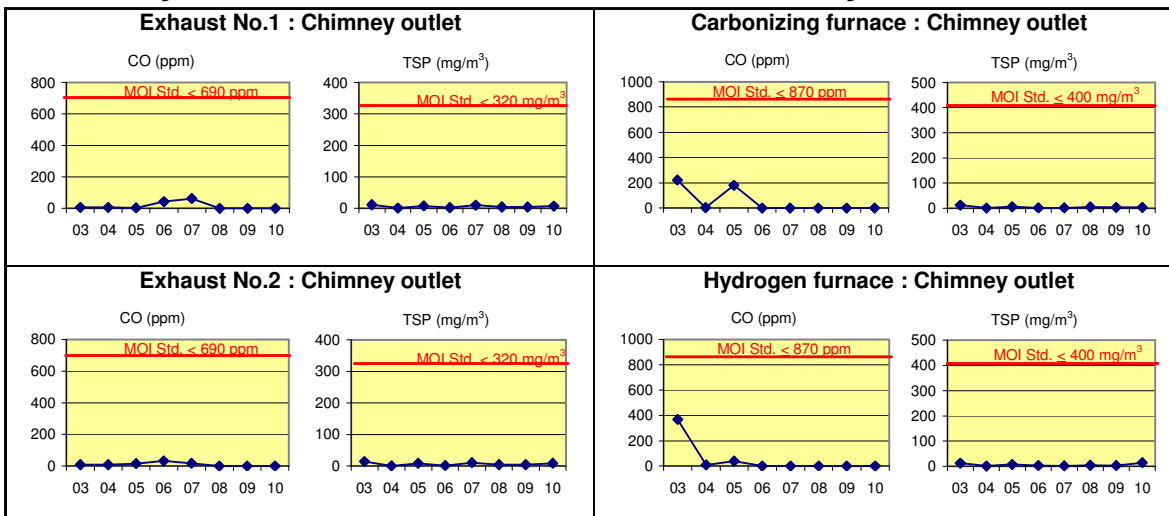
pH meter

Analysis result of Wastewater at Factory outlet




The company inspects wastewater quality at discharge point "Factory outlet" as BIP regulation every month.

Analysis result of Air Emission from Factory



The company set plan for air emission quality analysis at chimney outlet as MOI standard once a year.



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If you have any comments and questions about this report, please feel free to contact us above.

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