

ENVIRONMENTAL REPORT

2023



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

CONTENTS

1. Message from the President
2. About Company
3. Environmental Policy
4. Environmental Management System
 - 4.1 Organization
 - 4.2 ISO 14001
5. Environmental Audit
6. Environmental Education
7. Environmental Impacts
8. Environmentally Conscious Products
9. Environmental Load Data
10. Environmental Target & Results (EAP)
11. Environmental Accounting
12. Environmental Activities
13. Social Contribution Activities
14. Measurement and Monitoring



<<Scope of Application>>

This report covers Toshiba Hokuto Electronic Devices (Thailand) Co., Ltd. within the scope of accreditation to environmental management system (ISO 14001).

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.



Mr. Akira Teranishi
President and CEO

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

ABOUT COMPANY

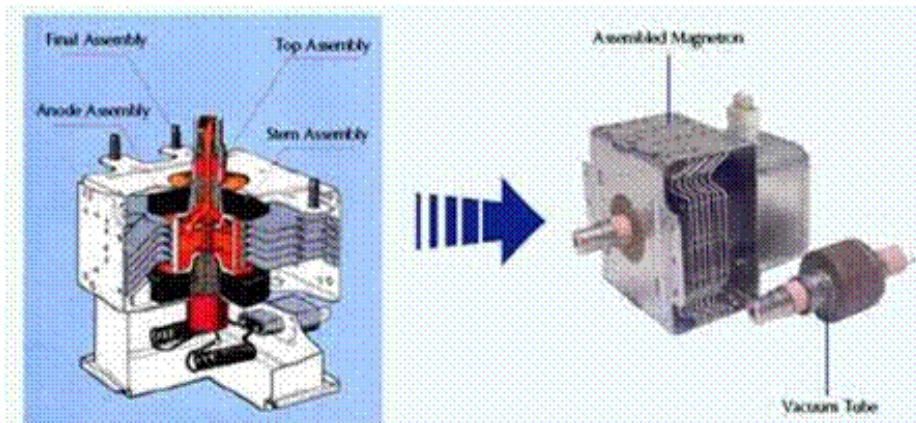
- **Company name :**
Toshiba Hokuto Electronic Devices (Thailand) Co., Ltd.
- **Established :** February 1, 2003
- **Capital :** Baht 416 Million
- **Shareholders :**
Toshiba Hokuto Electronics Corporation 100%
- **President :**
Mr. Akira Teranishi
- **Employee :** 646 people (March 31, 2023)
- **Products :** Magnetron and Thermal Print Head
- **Sales :**
Direct Export; (MAG) 82%, (TPH) 90%
Indirect Export; (MAG) 18%, (TPH) 10%
- **Area :** Site Area ; 15,700 sq m
Floor Area ; 13,639 sq m



ABOUT COMPANY

◆ **Product : Magnetron**

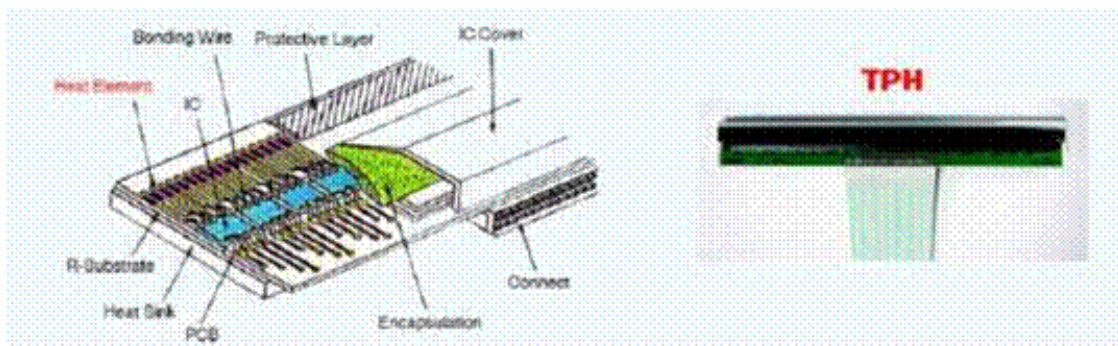
Magnetrons generate microwaves and oscillate water molecules inside of food at high speeds, producing friction heat and warming foods. Magnetrons thus function as “hearts” of microwave ovens. We produce over 10 million pieces of magnetrons a year and supply them to the microwave oven manufacturers all 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

TOSHIBA

Statement of Environmental Philosophy of Toshiba Hokuto Electronic Devices (Thailand) Co., Ltd.

Vision

Toshiba Electronic Devices & Storage Corporation Group (TDSC) aims to create value for tomorrow and coexist with the Earth, consistent with Toshiba Group philosophy of being "Committed to People, Committed to the Future". We will contribute to the development of a sustainable society and better future through environmental management practices aimed at being de-carbonized, recycling-based, and harmonious with nature.

Policy

Toshiba Hokuto Electronic Devices (Thailand) Co., Ltd. (THDT) as a manufacturer of Magnetron and Thermal Print Head (TPH), based on TDSC's Statement of Environmental Philosophy, considers environmental stewardship to be one of our management's primary tasks. We strive to take the environment into consideration in our business activities, including in manufacturing and disposal from life cycle perspective, to practice corporate activities that integrate management and the environment toward the realization of sustainable society, to continuously improve our environmental management system and effectively apply environmental management, through internal audits and reviews, in order to enhance environmental activities level and environmental performances, and also to assess the environmental impact on the environment and biodiversity caused by our business activities, which include procurement and manufacturing. We will set objectives with respect to energy saving and resource saving development, reduction of environmental impact, and pollution prevention. We will execute proactive environmental measures including the following:

- 1) Complying with all applicable laws and other regulations concerning the environment.
- 2) Promoting reduction of greenhouse gases generated by our business activities to mitigate climate change.
- 3) Striving to reduce waste and make effective use of water resources by minimizing resources used in business activities and promoting 3Rs (Reduce, Reuse, Recycle) in order to support the circular economy.
- 4) Striving to manage chemical substances used in our business activities and reduce the amount handled and emitted in order to reduce environmental risk.
- 5) Striving to maintain and restore biodiversity in order to live in harmony with nature.
- 6) Striving to disseminate information and collaborate with local communities and society to facilitate mutual understanding with stakeholders.
- 7) Striving to enhance the environmental awareness and training with respect to all group members in order to process business activities considering the environment throughout THDT.
- 8) Providing adequate resources needed for environmental management system.
- 9) Promoting Eco Industrial Town development program of Thailand Government to move toward sustainable coexistence between industries and communities.

This policy is communicated and available to all employees and the public.



(Mr. Akira Teranishi)
President
June 26, 2023

THDT

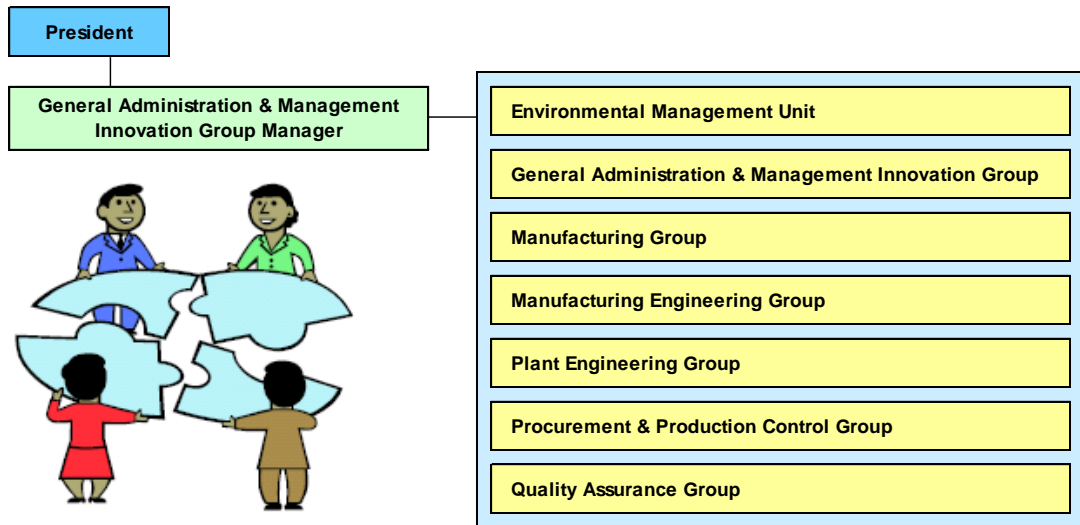
ENVIRONMENTAL MANAGEMENT SYSTEM

◆ Environmental Management

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

◆ Environmental Organization

To perform consistent environmental activities, we have established environmental organization within our company and committed sustainable development. Also, we reorganized by moving “Environmental Management Unit” to under “General Administration & Management Innovation Group” since April 2022.



◆ ISO 14001 Certification

We obtained ISO 14001 certification for effective environmental management system to enhance environmental activities and improve consistently. In addition, we have already certified to ISO 14001:2015 by Bureau Veritas since 2018.



**ISO 14001:2015
Certificate
Number
TH017859**

**This certificate
expires on 2
April 2025.**

Bureau Veritas Certification

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

132 MOO 5 BANGKADI INDUSTRIAL PARK, TIVANON ROAD, TAMBOL BANGKADI, AMPHUR MUANG, PATHUMTHANI 12000, THAILAND

Bureau Veritas Certification Holding SAS - UK Branch certifies that the Management System of the above organisation has been audited and found to be in accordance with the requirements of the management system standards detailed below

ISO 14001:2015
Scope of certification

MANUFACTURING OF MAGNETRON AND THERMAL PRINT HEAD

Original cycle start date: 16 April 2001

Expiry Date of Previous Cycle: NA

Certification / Recertification Audit date: NA

Certification / Recertification cycle start date: 03 January 2022

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 02 April 2025

Certificate No.: TH017859 Version: 1 Issue Date: 03 January 2022



Signed on behalf of BVCH SAS UK Branch

Certification Body Address: 5th Floor, 68 Prescot Street, London, E1 6HG, United Kingdom
Local Office: Bureau Veritas Certification (Thailand) Ltd. 16th Floor, Bangkok Tower, 2170 New Petchburi Road, Bangkok, Huaykwang, Bangkok 10210, Thailand

For further clarifications regarding the scope and validity of this certificate, and the applicability of the management system requirements, please call 00 33 3 715 4000

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 ISO 14001 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

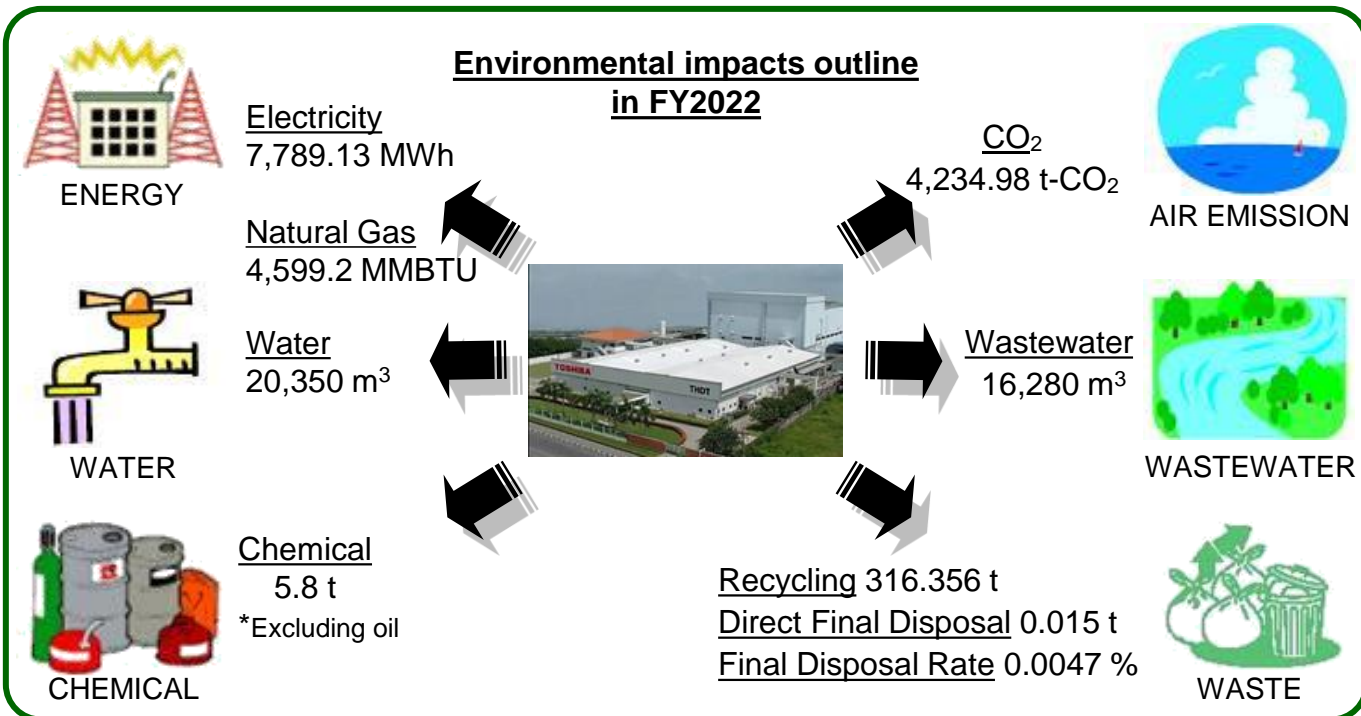
◆ Environmental Education

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.

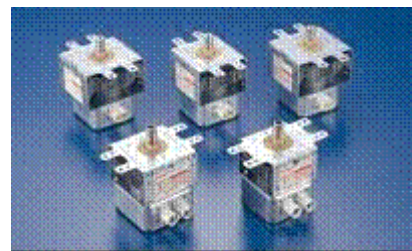


ENVIRONMENTALLY CONSCIOUS PRODUCT : New Super High Efficiency Magnetron

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.

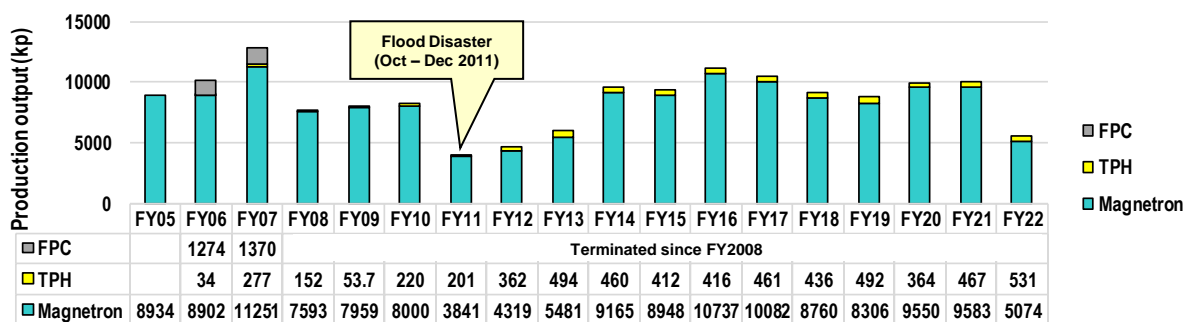
In Japan a microwave oven is specified as energy-saving product from 2008, and improvement in efficiency is urgently necessary. And 4 to 5 hundred million microwave ovens are in use all over the world. As total energy consumption for all microwave ovens would be huge, improvement of a magnetron in efficiency 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.

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

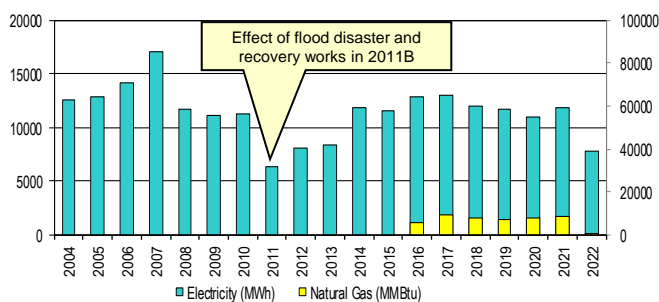


Magnetron
for Microwave Oven

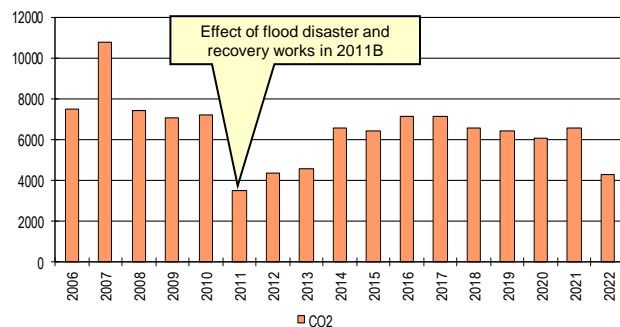
ENVIRONMENTAL LOAD DATA



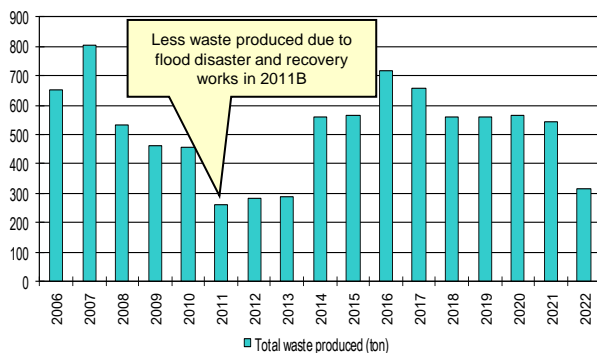
Energy usage (Electricity unit : MWh,
Natural Gas unit : MMBtu)



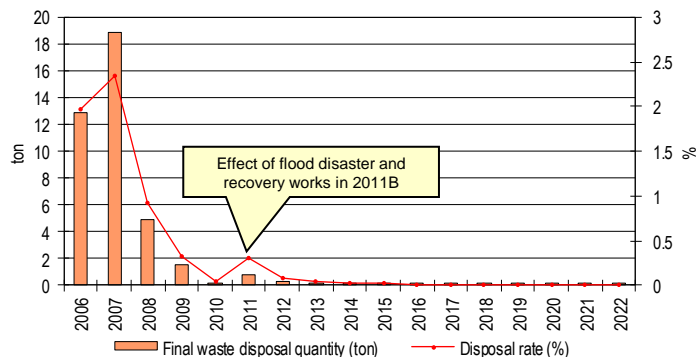
CO₂ emission (unit : ton-CO₂)



Total waste produced (unit : ton)

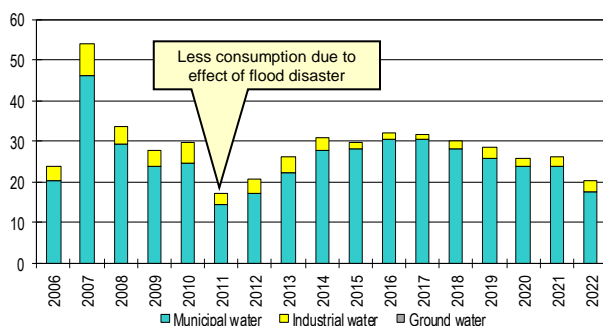


Final waste disposal quantity & disposal rate (unit : ton, %)

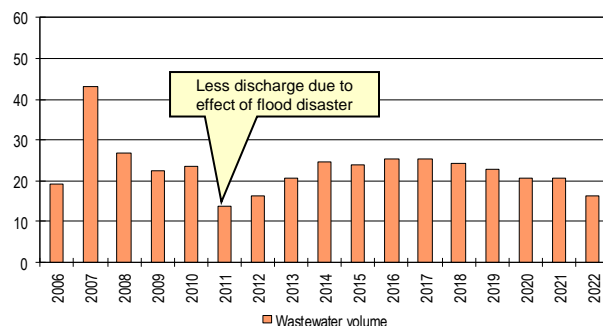


Major wastes : metal scrap, wood, plastic, paper, used oil, contaminated materials etc.

Water usage (unit : 1,000 m³)



Discharge volume (unit : 1,000 m³)



ENVIRONMENTAL TARGET & RESULTS (EAP)

◆ CO₂ emission (t-CO₂ / MB)

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Forecast	4.59	4.50	4.276	4.168	3.532	3.230	2.594	2.891	3.028	2.955	3.053	3.112	3.258	3.293	3.365
Actual	4.75	4.36	4.251	3.846	3.296	2.647	3.007	3.094	2.930	2.987	3.175	3.393	3.309	3.384	2.597

◆ Final disposal rate (%)

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Forecast	2.00	0.50	0.29	0.034	0.032	0.030	0.035	0.029	0.008	0.007	0.006	0.004	0.004	0.004	0.004
Actual	0.92	0.33	0.04	0.314	0.081	0.035	0.025	0.021	0.007	0.007	0.006	0.0046	0.0042	0.0034	0.0047

◆ Disposal amount (t / MB)

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Forecast	0.376	0.344	0.2845	0.2746	0.2689	0.2145	0.1686	0.2471	0.2614	0.2944	0.2815	0.2726	0.2952	0.3023	0.2800
Actual	0.340	0.287	0.2702	0.2827	0.2167	0.1653	0.2573	0.2721	0.2957	0.2745	0.2715	0.2971	0.3075	0.2827	0.1940

◆ Chemical handled amount (t – year)

	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022
Forecast	6.936	5.500	4.510	5.000	4.600	6.693	7.116	8.920	10.974	6.858	7.100	6.869	6.650	6.628	6.628
Actual	4.596	3.780	5.306	3.262	5.664	6.430	7.428	8.728	6.960	6.366	6.073	5.958	5.739	6.318	6.318

ENVIRONMENTAL ACCOUNTING

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

Total Cost for FY2022

	Classified	Contents	[KB]
1.business area costs	1.Pollution prevention costs	Preventing air,water soil pollution	0.00
	2.Global environmental protection costs	Global environmental protection, Ozone layer protection	1,068.67
	3.Resource circulation costs	Resource utilization, Reducing waste generated	220.32
2. upstream/downstream costs		Green products, recycle	0
3. administration cost		Environmental Education, Conference, Audit	151.80
4. R&D costs		Environmental conscious products	0
5. social activity costs		Area environment support Contribution	0
6. environmental remediation cost		Soil polluted repair	0
Total			1,440.78

Total Benefit for FY2022

	Classified	Contents	[KB]
A) Actual benefits		Environmental impacts can be clarified quantitatively and easily converted into monetary value	3,776.00
B) Assumed benefits		Environmental impacts can be clarified quantitatively and converted into monetary value based on certain assumptions	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	0
Total			3776.0

ENVIRONMENTAL ACTIVITIES

◆ Variable Speed Drive (VSD) Installation

To conserve energy, we save electricity consumption by installing Variable Speed Drive (VSD) for Air compressor A 2-4 at Powerhouse 2, Factory building 2.

The VSD saves energy by adjusting the motor speed (RPM) by means of an inverter to match air demand, providing significant energy savings.

- Period : April – September 2022
- Place : Powerhouse 2, Factory building 2
- Number of VSD : 1 unit
- Energy saving : ~ 20,759 kWh / year
- CO₂ reduction : ~ 10.65 t-CO₂ / year
- Cost saving : ~ 249 kTHB / year



◆ Tree Planting Activity for World Environment Day

We planted 11 Asoke trees to take part in environmental action for the World Environment Day June 5th. This activity took place on June 6, 2022 at yard beside Store No.10 during 9 – 10 AM. There were 19 participants from president, directors, group managers, THDT environmental committee, group's representatives and internship student.

◆ Tree Planting Activity for Memory of 20th Anniversary of THDT Foundation Day

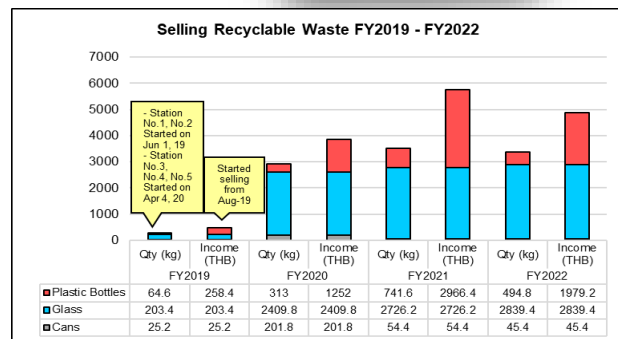
We conducted a tree planting activity for memory of 20th anniversary of THDT foundation day and promoting biodiversity conservation. This took place on February 1, 2023 in front of Factory building 1 in the morning. There were 18 participants from president, directors, group managers, Japaneses and other, planted a Black Ebony (Threatened plant).



◆ Recyclable Waste Segregation Project

THDT have provided five recycling stations to change our behavior on waste disposal so that it will become our new value and leads to the creation of "Green Culture" of the organization. The project was started in 2019. Since then it has continually improved. We collected recyclable wastes and generated revenues for supporting social contribution activities in FY2022 :

- Total quantity; 3,380 kg
- Total income; 4,864 THB



SOCIAL CONTRIBUTION ACTIVITIES

◆ Earth Hour 2023

THDT participated in the Earth Hour 2023. The annual Earth Hour lights out event, organized by WWF (World Wildlife Fund), is a global movement for the planet that involves 192 countries and territories worldwide to turn off non-essential lights for one hour as symbol of a broader commitment toward nature and our planet.

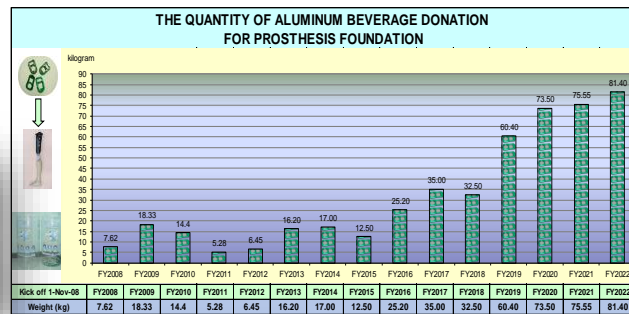
- Date : Saturday, March 25, 2023 Time : 8:30 – 9:30 p.m.
- Switched off the lights including street lights, lights around factory and company signboards total 71 lamps for 1 hour (saving ~ 3.22 kWh).
- Encouraged employees to turn off their lights and appliances at home.



◆ Aluminum Recycling for Prosthesis

THDT cooperated with Bangkok Can Manufacturing Co., Ltd. (BCM) since November 2008 which under the well collaboration and courtesy of the Prostheses Foundation of H.R.H the Princess Mother and the Pollution Control Department have initiated "The royal patronage for prosthesis project" to encourage our employees to collect and donate the aluminum parts of beverage cans for recycling and assisting the disabled people for prostheses.

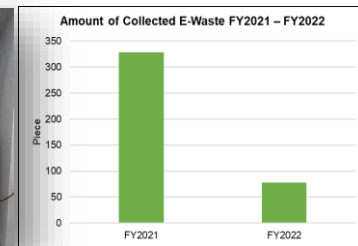
- FY2022, we delivered the donated aluminum total 81.40 kg to BCM on March 24, 2023.



◆ Thailand without E-Waste

We joined "Thailand without E-Waste" campaign since 2021 by encouraging employees to correctly sort and dispose E-Waste and sending the gathered E-Waste to recycle (Zero landfill) for taking our part in saving environment through Advanced Info Service Public Co., Ltd. (AIS).

- FY2022, there were participants 17 people and we delivered the gathered E-Waste total 78 pieces to AIS on March 31, 2023.



HUMAN RESOURCES DEVELOPMENT

◆ Education and Training

Education and training are important part of human resource development, Therefore, we have provided various program of training for all functions and levels of employees; 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 wastewater from production by neutralization.

The company installed pH meter at Factory outlet in order to check wastewater quality discharge which flow to central wastewater treatment of Bangkok Industrial Park (BIP).

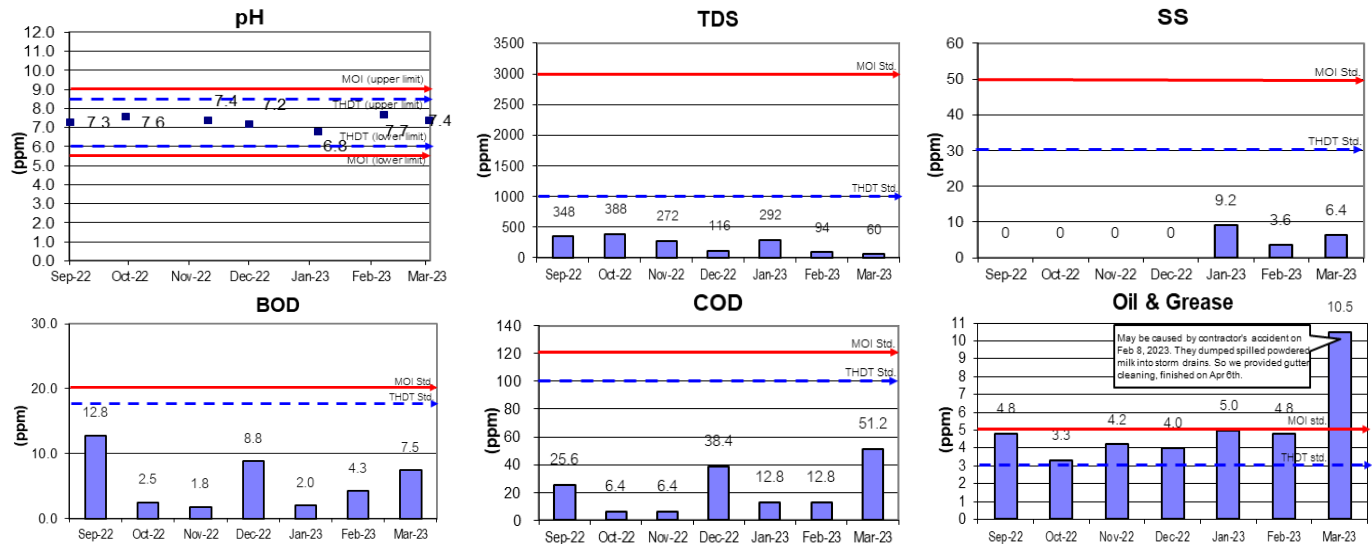


WWTP (Neutralization)



pH meter & Gate

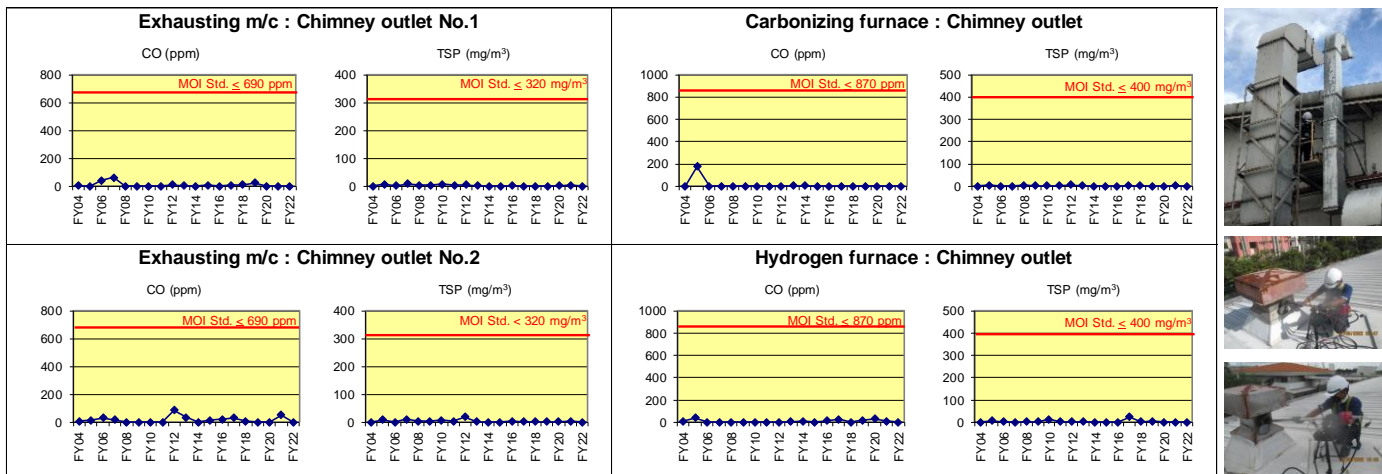
◆ Analysis result of water discharge at Effluent Point



THDT inspects water quality at discharge point "Effluent Point" as MOI regulation every month.

MOI : Ministry of Industry

◆ Analysis result of Air Emission from Factory



THDT sets plan for air emission quality analysis at chimney outlet as MOI standard once a year.



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

Environmental Management Unit

132 Moo 5, Bangkadi Industrial Park, Tivanon Road, Muang, Pathumthani 12000, Thailand

Tel : (66) 0 2501 3210-20 Fax : (66) 0 2501 3221

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

Published in October 2023

