

Toshiba Carrier (Thailand) Co., Ltd. Site Report Information

Address: 144/9 Moo 5 Bangkadi Industrial Park, Tivanon Rd., Muang, Pathumthai 12000

Lot area: 56,514 m², Building area: 39,012 m², Green ratio: 24.3%

Establishment: January 9, 1989, Employees: 1,396 (as of May 2018)

Major products: Air conditioners

ISO 14001 certified: May 1998, Latest update: January 28, 2017 (new version 2015)
(ISO Certificate number: EMS 653446)



Message from Environmental Preservation Chief

Since its establishment in 1989, Toshiba Carrier Thailand (TCTC) has believed Corporate Social Responsibility (CSR) is a management matter of the utmost importance, and recognized protection of environment is one of key areas of CSR. As a developer and manufacturer of air-conditioning system, TCTC continues to make its best efforts for low carbon environment through promoting environmental management, providing environmentally conscious products, reducing environmental impact through business activities, implementing to sustainable and continual improvement.



Environmental Preservation Chief
Mr. Toshiaki Wazawa

Major Environmental activities in 2017

Waste reduction project



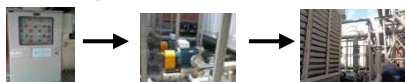
Return wooden pallet (unsellable) to a supplier for reuse

Total waste reduction: 44.8 ton/year

Energy saving projects

Variable Speed Driver (VSD) installed for controlling speed pump motors at a cooling tower and exhaust fan.

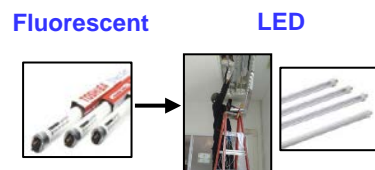
Cooling tower



Exhaust fan



Replacing fluorescent with LED



The energy saving projects consisted of installing a VSD for motor pumps, and replacing fluorescent with LED,

Total energy savings: 253,268 kWh/year

Total CO₂ reduction: 148.72 t-CO₂

Development of products and environmental technologies from Environmental consideration point

New Featured Fireplace




Model
RAS-25PKVPG-ND
RAS-35PKVPG-ND



The indoor-unit's fan keeps blowing continuously during switch compressor off, to circulate heat from other sources over the room

This feature will save electrical fee from heat pump, because the heat pump can utilize heat from other sources effectively, and reduce time of compressor operation.

Fireplace 1: 

- The indoor unit's fan will continue to run by the same speed, previously selected by end-user.

Fireplace 2: 

- The indoor unit's fan will continue to run at super-low speed, programmed from factory.

TCTC Environmental Policy

Toshiba Carrier Thailand (TCTC) recognizes Corporate Social Responsibility (CSR) is a management matter of the utmost importance. TCTC also recognizes a protection of environment is one of key areas of CSR, and aims to be the world's foremost eco-company based on integrity. As a developer and manufacturer of air-conditioning system, TCTC continues to make its best efforts for low carbon environment through promoting environmental management, providing environmentally conscious products, reducing environmental impact through business activities, implementing to sustainable and continual improvement.

Promoting Environmental Management

1. TCTC considers environmental stewardship to be one of management's responsibilities and promotes environmental activities in harmony with economic activities.
2. TCTC assesses the impacts of its business activities, products and services on the environment, including with regard to biodiversity, and specifies objectives and targets with respect to the reduction of environmental impacts and prevention of pollution.
3. TCTC strives to continuously improve environmental management through internal audits and reviews of activities.
4. TCTC complies with all law, regulation, industry guidelines it has endorsed, compliance obligations and its own standards concerning the environment.
5. TCTC strives to enhance the awareness of all its employees with respect to the environment and requires that they make a practical contribution to the environment through their work including respecting, considering and responding to stakeholder's interest in an environment.
6. TCTC operates globally, and accordingly, promotes environmental activities as a member of Toshiba Group

Providing Environmentally Conscious Products and Reducing Their Environmental Impact through Business Activities

1. TCTC recognizes that natural resources are finite and implements vigorous environmental measures to promote their effective and practical use in terms of both products and business process.
2. TCTC develops and provides environmentally conscious products and services which contribute to the reduction of environmental impacts throughout their life cycles.
3. TCTC strives to reduce the environmental impacts of all business process, encompassing design, manufacturing, logistics, sale, and disposal, with a particular focus on the prevention of global warming, efficient utilization of resources and control of chemical substances.

As a Corporate Citizen of Planet Earth

1. TCTC contributes to society through its environmental activities, which include the development and provision of excellent, environmentally conscious technologies and products and cooperation with society at large and with local communities.
2. TCTC is committed to maximizing disclosure and transparency in communication with stakeholders and society at large in order to facilitate mutual understanding.

Effective Date : April 2nd, 2018



Mr. Naoki Katayama

(General Manager, Chairman of

Environmental and Energy Management Committee)



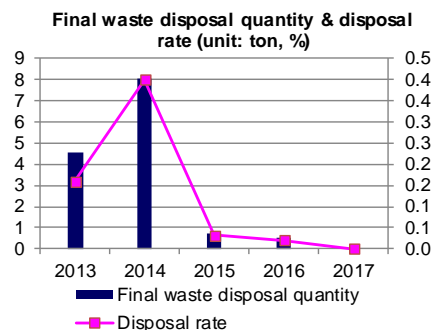
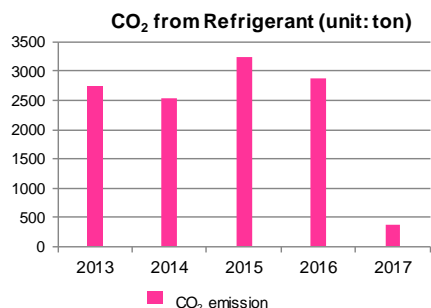
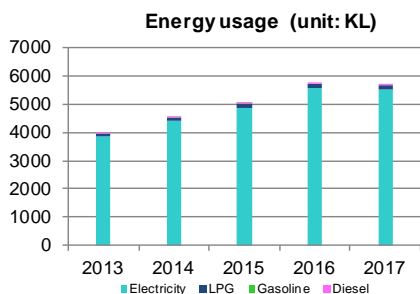
Mr. Toshiaki Wazawa

(Managing Director)

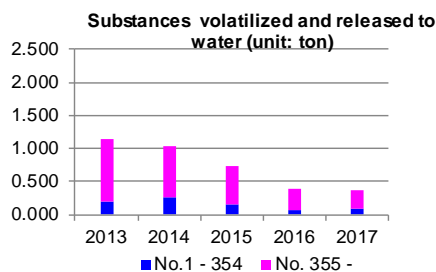
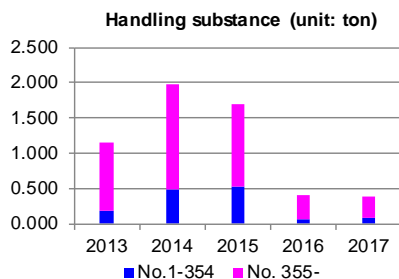
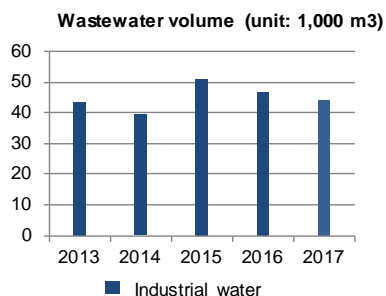
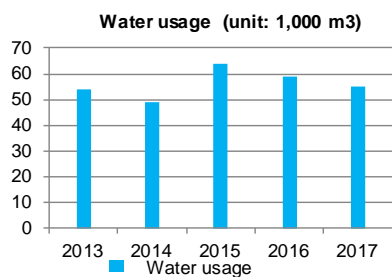
Mid-term plan 2018-2020

Items	2018	2019	2020
1. CO ₂ emission by energy consumption (ton-CO ₂)	17,641	20,940	24,033
2. Green House Gas (ton-CO ₂)	609	720	828
3. Total waste (kg)	3,691,858	4,370,926	5,029,793
4. Water volume (m ³)	76,091	84,492	71,773
5. Chemical handled (ton)	0.73	0.86	0.99
6. Chemical emission (ton)	0.59	0.7	0.9

Environmental load data



Major wastes: Wood scrap, coated steel scrap and aluminum flake and foil



Major chemical substances: Toluene, Xylene and Ethylene glycol monobutyl ether

Compliance management
Stack measurement results (brazing process: LPG gas)

Monitoring date: 18-21 Apr and 27-30 Dec 2017

	Regulation value	Self-control value	Actual measurement	Measurement frequency
NOx (ppm)	≤ 200	≤ 190	1.3	Once a year
SOx (Nm3/h)	None	None	None	Once a year
TSP (mg/Nm3)	≤ 320	≤ 304	1.54	Once a year

Final wastewater measurement results (major results)

Monitoring date: Apr 2017– Mar 2018

(TCTC does not has a treatment facility. TCTC wastewater is treated at Bangkadi Central Wastewater Treatment)

	Regulation value	Self-control value	Actual measurement	Measurement frequency
Hydrogen ion concentration (pH)	5-9	5.5-8.5	7.3	Once/month
BOD (mg/l)	≤ 500	475	118.6	Once/month
COD (mg/l)	≤ 750	712	241.1	Once/month
TSS (mg/l)	≤ 200	190	83.1	Once/month
TDS (mg/l)	≤ 3000	≤ 2850	424.8	Once/month
Temperature (°C)	≤ 40	38	31.8	Once/month

Ambient noise & vibration measurement results

Monitoring date: 18-19 Apr 2017

	Location: Time	Regulation value	Self-control value	Actual measurement	Measurement frequency
Noise (dB)	Lot boundary	70	67	63.7	Once a year
Vibration (dB)	Lot boundary: Day	None	None	None	None

Other measurement results (Sewage Water Law: Major results)

	Regulation value	Self-control value	Actual measurement	Measurement frequency
Hydrogen ion concentration (pH)	None	N/A	N/A	N/A
BOD (mg/l)	None	N/A	N/A	N/A
SS (mg/l)	None	N/A	N/A	N/A

Environmental accidents, administrative advices and complaints

	State
Environmental accident	None
Environmental problem around the factory and in the local area	None
Administrative advice or direction	None
Complaint from neighboring residents	None

Environmental communication

Environmental activities in Chonburi

Arranged CSR activities for employees at Sea Turtle Conservation Centre, The Royal Thai Navy in Chonburi and did activities such as cleaning of baby turtle pond, planting of coral and keeping of garbage on the beach.

- Period of time : Dec 2, 2017
- Number of participants: 108 employees



School tour on global warming education



School tour for educating students on global warming

Date:

- June 14, 2017, Wat Bang Ku Dee Thong school
- June 28, 2017, Wat Ratsathatham school
- July 12, 2017, Sukalakkana school
- July 26, 2017, Wat Bualuang school
- Aug 9, 2017, Bang Toey Nok school

Number of students: 500 persons

EH&S awareness activities for employees

- Arranged EH&S awareness activities for employee on reason of segregating waste and environmental aspect evaluation.

- Date: Sep 29, 2017
- Number of contenders: 200 employees



Conservation of Biodiversity

Tree distribution to employees



Arranged the activity for distributing tree to employees for planting at employees' houses (5 species)

- Date: December 18, 2017
- Number of participants: 500 persons

Tree growth record



Magnolia Sirindhorniae



Shorea

Monitor tree growth record of trunk size every 6 months