Challenges

CP ALL Plc. and subsidiaries ("the Company") is aware of climate change's significance, consider it is a current global concern. Anthropogenic activities are the primary factor causing the changes in climate and global temperature. The Company's effort is in line with the 13th goal of Sustainable Development Goals (SDGs), which was approved by 193 member countries of the United Nations, and Paris Agreement, which discusses climate change management, too. The Company recognizes the opportunity to actively contribute to the overall global efforts – committing to reduce greenhouse gas (GHG) emissions, while operating businesses sustainably.

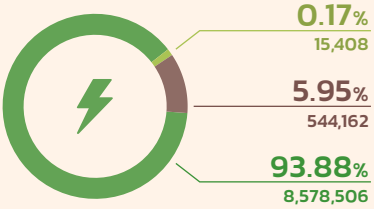
PROGRESS IN 2019

- Expanded solar-based electricity generation projects to encompass distribution centers of CP ALL Plc., Siam Makro Co. Ltd., and CPRAM Co. Ltd
- Deployed a project to elevate packaging used in 7-Eleven stores, opting for natural and biodegradable materials and reduce the use of plastic packaging
- Created collaboration between the public sector and international organizations under the project, Low Carbon City
- Follow and disclosure GHG emissions through the Carbon Disclosure Project (CDP) in scope 1, 2 and 3

CLIMATE CHANGE MANAGEMENT DASHBOARD

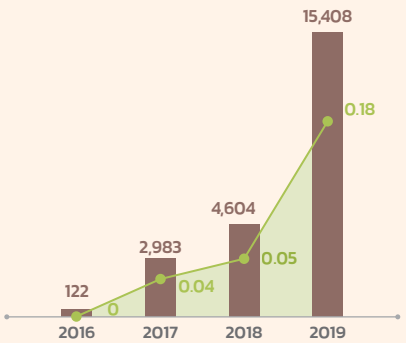
Energy Consumption

- Renewable Energy (GJ)
- Electricity Purchased (GJ)
- Non-renewable Energy (GJ)



Renewable Energy Consumption

- Renewable Energy Consumption (GJ)
- Percentage of Renewable Energy per Total Energy Consumed (%)



Energy Consumption by Source (GJ)

	2018	2019
Fuel Oil	23,384	0
Diesel Fuel	117,496	122,440
Gasoline Fuel	14,666	15,363
Liquefied Petroleum Gas	292,398	348,141
Natural Gas	53,292	58,217
Electricity Purchased	7,872,737	8,578,506
Renewable Energy	4,604	15,408

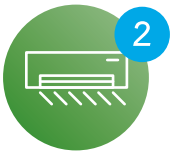
1. Green Store

The Company continuously improved multiple electrical system and equipment in 7-Elevent stores under the sub-strategy 'Green Store' through several projects, as follows.

1. **Efficiency Improvement of Cooling Coils for Large Cooling Vaults Project**
2. **Inverter Air Conditioner Project in 7-Eleven**
3. **LED Lightbulb Project**
4. **In-Store Exploration and Climate Monitoring Project**
5. **Solar Energy Project**
6. **Improvement of Screenless Product Display Shelves Cooling System Project**
7. **Knockdown Store Project**
8. **Electric Vehicle Charging Station**

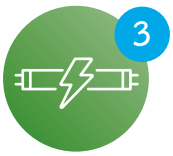
Efficiency improvement of cooling coils for large cooling vaults project

There are 1,341 stores whose cooling coils' efficiency have been improved. This resulted in reduced energy consumption per month at 163.78 kWh per store on average. There is a plan for further installation of 200 stores per year, starting from 2020 onwards.



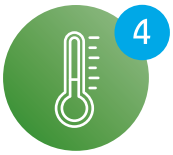
Inverert Air Conditioner Project in 7-Eleven

In 2019, there have pilot stores where original air conditioners have been replaced with an inverter air condition. This resulted in reduced energy consumption per month at 864 kWh per store on average. In this project, the Company changed refrigerants to R-32 which is more efficient as a cooling agent. R-32 even has a lower Global Warming Potential (GWP) than the previously used R-22 and R-410A. As of now, replacement has completed in 807 stores, especially for new store and improved equipment store. It will be able to reduce GHG emissions by 7.924 tonnes CO_2e per store.



LED Lightbulb Project

There is now a total of 3,983 stores where lighting systems have increased luminescence efficiency, such as light signs, product shelves, and lights above the doors. This upgrade reduces energy consumption by 482.65 kWh per store per month. The Company plans to implement this project to all new store.



In-Store Exploration and Climate Monitoring Project

Since 2018, the Company has been working and developing Internet of Things (IoT) to collect and analyze performance data of various equipment in the store. This comprises coolers and air conditioners. The system monitors temperature, as well as calculate and notify for maintenance when there are abnormalities, prior to actual malfunction. This project enhances effectiveness in communication, reduce time and maintenance cost. Additionally, the project reduced electronic waste and food waste that may occur if an equipment malfunctions. In 2019, the Company trialed run with 3 of 7-Eleven stores, which are Samyan Mitrtown branch, Prasarn Mitr branch, and Silom 19 branch. Upon investigating equipment, such as packaged food coolers, chillers and coolers for beverage, shown in the figure. There is a plan for futher installation of 200 stores per year, starting from 2020 onwards.

There are
1,341
stores
which decreased

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on average

It will be able
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This resulted in reduced
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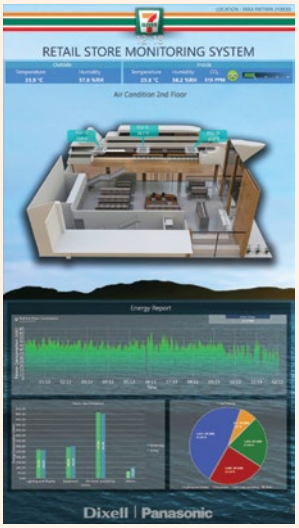

5 Solar Energy Project

5.1 7-Eleven Stores

In 2019,
10
stores ware
installed
the Solar Cell

Total generation
electricity of
196,680
kWh per year

Reduced GHG
emissions by
114.49
tonnes CO_2e.

5.2 Siam Makro

In 2019,
20
stores ware
installed
the Solar Cell

Total generation
electricity of
2,803,922
kWh per year

Reduced GHG
emissions by
1,632.16
tonnes CO_2e.

5.3 CPRAM

In 2019,
1
stores ware
installed the
Solar Thermal

The solar thermal
can replaced the
electricity of
766,500
kWh per year

Reduced GHG
emissions by
446.17
tonnes CO_2e.

6

Improvement of Screenless Product Display Shelves Cooling System Project

There is now a total of 412 stores where improved the screenless product display shelves cooling system project. This upgrade reduces energy consumption by 242.7 kWh per store per month. It will be able to reduce GHG emissions by 698 tonnes CO_2e. The Company aims to expand its improvement by 200 stores per year from 2020 onwards.

Reduced energy consumption by **242.7** kWh per store per month

7

Knockdown Store Project, Reuses materials from building's exterior

In 2019, there are a total of 64 stores in this project From 2020 onwards, the Company aims to increase the installation to 200 stores per year.

In 2018, **64** stores were installed the Knockdown Store project.

Company has a further expansion plan to **200▲** stores by 2020

8

Electric Vehicle Charging Station

It was the Company's aspiration to facilitate Electric Vehicle (EV) Plan of Energy Policy and Planning Office, Ministry of Energy. The Plan aims for the country to have 1.2 million plug-in hybrid and battery hybrid cars on the road by 2026. The Company collaborates with Metropolitan Electricity Authority (MEA) to install normal-charge EV charging stations upon agreed conditions and responsibilities. A number of 4 stations have been installed at 2 of 7-Eleven stores, which are Ban Suan Lasarn (Sri Nakarind) and Charan Sanitwong 11. In 2019, additional installations were further implemented across 17 stores. The Company expects to take embrace an active role in distributing EV charging stations in branches meeting criteria. To name a few, the criteria requires a parking space to have more than 8 cars, parking is in straight line as opposed to diagonal, and has no slope.

2. Green Logistic

The Company continuously operates logistics and distributions while remaining considerate to the environment. The operation focuses in enhancing effectiveness of product logistics and distribution, in reducing fuel required and greenhouse gas consumption. The Company made the changes possible through resizing of vehicles, transport time management. Furthermore, there is collaboration with transporting companies in collecting greenhouse gas data under the Green Logistic Strategy. Additionally, the Company adopts criteria of Leadership in Energy & Environmental Design (LEED) for development and designs of distribution centers across the country. As of 2019, there are a total of 2 distributions centers certified for Green Building and one distribution center has certified for Thai's Rating of Energy and Environmental Sustainability (TREES). In addition, there vehicles of distributions centers have been resized, this efforts reduce transportation fuel by 3,522,189 liters per year, reduce GHG emissions by 9,670 tonnes CO_2e.

1 Solar Cell Installation in Distribution Centers Project

A total of 14 distribution centers had installed Solar Cell to generate electricity for the Temperature-controlled distribution center (CDC) areas. There are 3 CDC areas which are CDC Khonkaen, CDC Bang Bua Thong and CDC Lamphun could generated 192,780 kWh of electricity.

2 Daily Runner Project

It's a pilot project by CP Retailink Co. Ltd.'s. Solar cells are installed on the roof of all-day transportation vehicles to provide electricity for in-vehicle cooling equipment. Presently, there is a total of 28 vehicles with solar cells, comprising of 15 transportation vehicles, 3 coffee shop vehicles and 10 maintenance service vehicles.

3 Solar Thermal Project

The solar thermal project increases the proportion of renewable energy consumption. It utilizes underground hot water from 400-500 meters depth, which has the temperature of 50 Celsius on average, for cleaning of production equipment. This helps replace the water-heating in production process. Originally, water is heated using electric power. In 2019, as much as 309,370 kWh of energy consumption has been reduced. Simultaneously, the project enables reduction of GHG emissions by 180 tonnes CO_2e. The solar thermal project is one of the projects demonstrating the Company's commitment to use renewable energy and enhance sustainability to business, society and the environment.

4 Solar Tube Project

This project aim to reduce electricity consumption in production process by using the solar energy, such as in water boiling and water heating process. In 2019, the project reduces natural gas consumption by 27,703 kilograms per year, or an equivalent to 11.78 tonnes CO_2e of GHG emissions.

Sustainability Performance Data 2019 : Environment

GRI Standard	Requested Data	Unit	2016	2017	2018	2019
302-1 (e)	Total Energy Consumption within the Organization	GJ	7,180,106.92	7,543,731.28	8,378,582.01	9,138,078.10
302-1 (a)	**Total Non – Renewable Energy**	**GJ**	**231,481.88**	**273,582.89**	**501,239.88**	**544,162.84**
	Stationary Combustion	**GJ**	**231,481.88**	**273,582.89**	**370,720.89**	**414,339.03**
	• Fuel Oil	GJ	143,934.00	161,001.74	23,384.76	0
	• Diesel	GJ	4,083.00	4,086.98	1,644.70	7,980.44
	• Liquefied Petroleum Gas	GJ	66,951.12	69,182.62	292,398.72	348,141.34
	• Natural Gas	GJ	16,513.76	39,311.55	53,292.70	58,217.25
	Mobile Combustion	**GJ**	**N/A**	**N/A**	**130,519.00**	**129,823.81**
	• Diesel	GJ	N/A	N/A	115,852.21	114,460.19
	• Gasoline	GJ	N/A	N/A	14,666.67	15,363.62
	• Natural Gas Vehicles	GJ	N/A	N/A	0.12	0.0032
302-1 (b)	**Total Renewable Energy**	**GJ**	**112.15**	**2,983.28**	**4,604.26**	**15,408.41**
	• Solar Cell	GJ	122.15	223.88	693.18	11,496.18
	• Solar thermal	GJ	0	2,759.40	2,759.40	2,798.50
	• Geothermal	GJ	0	N/A	1,151.68	1,113.73
302-1 (c)	**Total Electricity Purchased**	**GJ**	**6,948,512.89**	**7,267,165.11**	**7,872,737.87**	**8,578,506.85**
302-3 (a)	**Energy Intensity**	**GJ per million THB of revenue**	**15.89**	**15.41**	**15.87**	**16.00**
303-3 (a) (2018)	Total Water Withdrawal	Million m^3	8.01	9.06	8.67	9.35
	• Groundwater	Million m^3	0.93	1.04	1.27	1.35
	• Municipal water supply	Million m^3	7.08	8.02	7.40	8.00
	• Reused and recycled water	Million m^3	0.17	0.19	0.93	0.51
303-3 (b) (2018)	**Total Water Withdrawal from Water Stress Areas**	**Million m^3**	**N/A**	**N/A**	**N/A**	**3.67**
	• Groundwater	Million m^3	N/A	N/A	N/A	1.29
	• Municipal water supply	Million m^3	N/A	N/A	N/A	2.38
303-3 (b) (2018)	**A Breakdown of Total Water Withdrawal**	**Million m^3**	**N/A**	**N/A**	**N/A**	**9.35**
	• Freshwater (≤1,000 mg/L Total Dissolved Solids)	Million m^3	N/A	N/A	N/A	9.35
	Water Withdrawal Intensity	Million m^3 per million THB of revenue	17.75	18.52	16.43	16.38
305-2 (a)	Total GHG Emissions (Scope 1 and Scope 2)	Tonnes CO_2e	1,131,651.73	1,184,068.66	1,286,029.10	1,400,440.40
305-1 (a)	**Direct (Scope 1) GHG emissions**	**Tonnes CO_2e**	**8,115.53**	**9,008.51**	**13,051.12**	**13,343.50**
	• Methane form waste water treatment	Tonnes CO_2e	1,115.46	914.04	3,253.40	3,724.42
	• Mobile combustion	Tonnes CO_2e	7,000.07	8,094.47	9,797.72	9,021.92
305-1 (c)	**Biogenic CO_2 emission**	**Tonnes CO_2e**	**N/A**	**N/A**	**N/A**	**597.15**