

Climate Change Management, Alternating for Renewable Energy

KEY PERFORMANCE IN 2019



Reduce GHG emissions by **25,967** tonnes carbon dioxide equivalent



Increase renewable energy by **4,280,110** kilowatt – hour



Reduce plastic usage by **3,329** tonnes



Supporting the SDGs



SDG7 Affordable and Clean Energy
 7.2 Increased proportion of renewable energy used
 7.3 Increase efficiency of energy consumption



SDG12 Responsible Consumption and Production
 12.2 By 2030 achieve sustainable management and efficient use of natural resource
 12.5 By 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse



SDG13 Climate Action
 13.1 Strengthen resilience and adaptive capacity to climate-related hazards

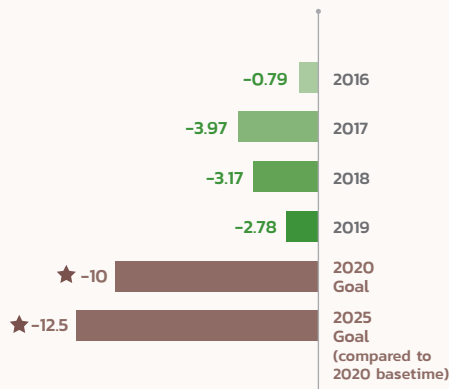
2020 GOAL



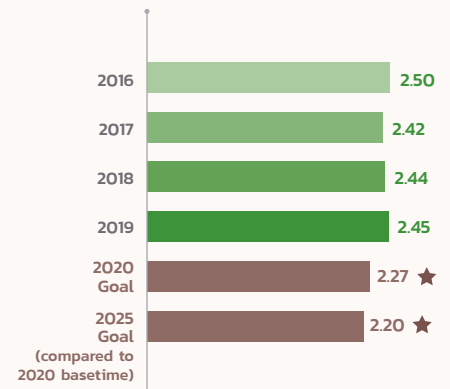
Reduce GHG Emissions intensity by **10%** by 2020, compared to the 2015 baseline

PERFORMANCE AGAINST GOAL

Percentage of Reduction of GHG Emissions Intensity (%)



GHG Emissions Intensity (tonnes CO₂e per million baht of revenue)



FOR MORE INFORMATION CAN BE FOUND AT QR CODE OR <https://www.youtube.com/watch?v=5xg5YyrDrIE>

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

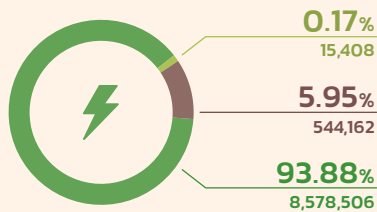


Follow and disclosure GHG emissions through the Carbon Disclosure Project (CDP) in scope 1, 2 and 3

CLIMATE CHANGE MANAGEMENT DASHBOARD

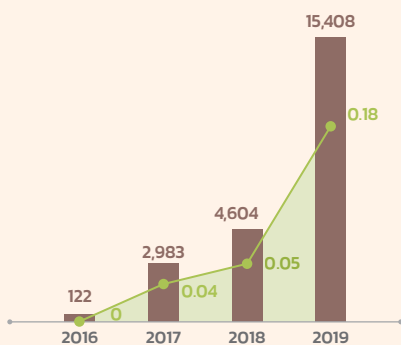
Energy Consumption

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

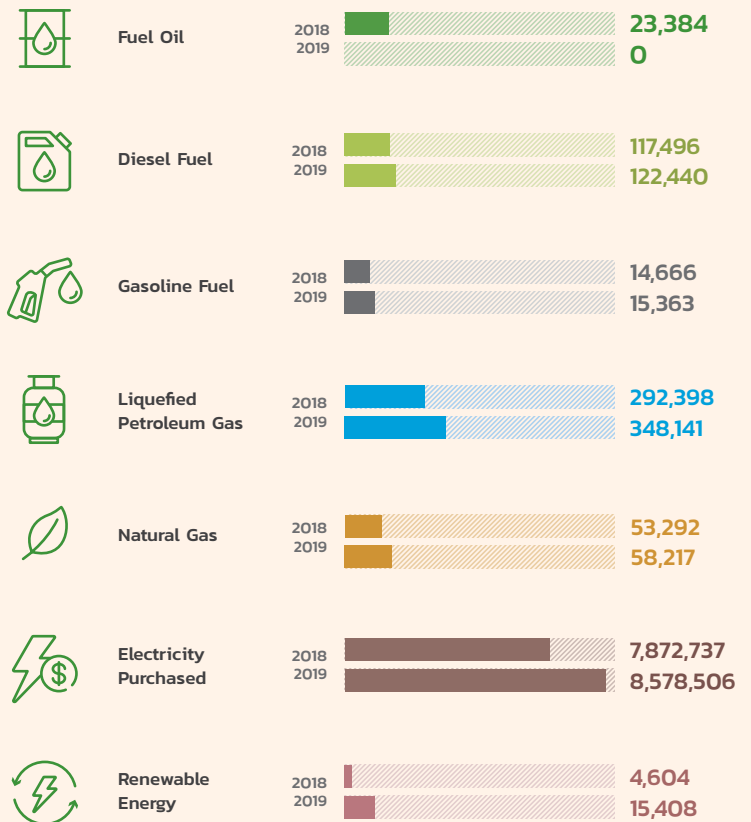


Renewable Energy Consumption

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



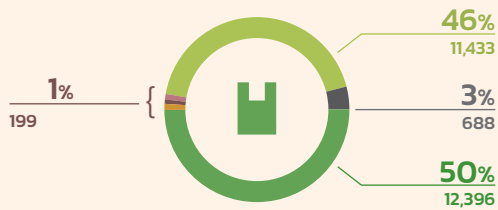
Energy Consumption by Source (GJ)



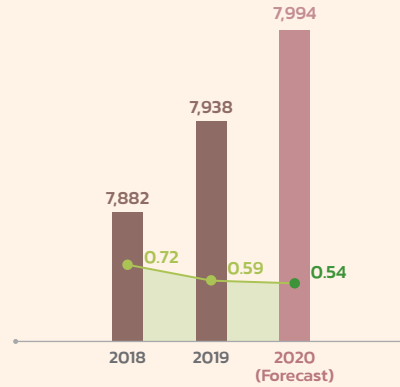
Plastic Consumption

Percentage of Plastic Consumption (Plastic Packaging / Plastic Bags / Single use Plastic)

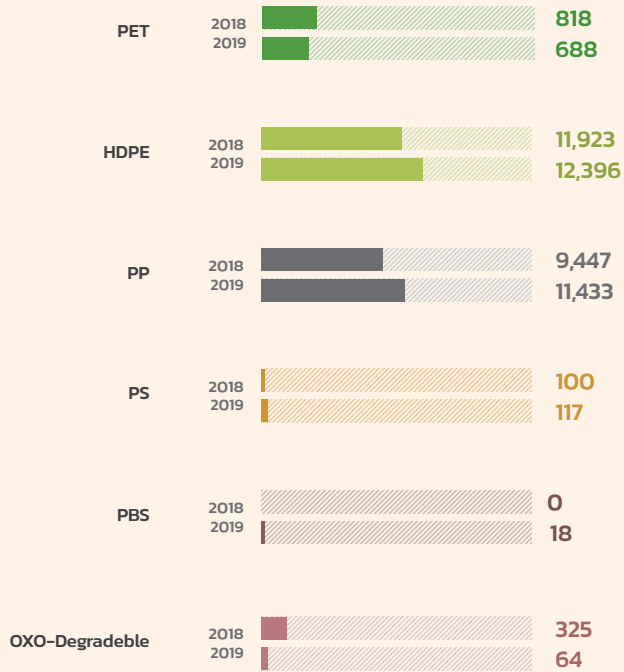
- PET
- HDPE
- PP
- PS
- PBS
- Oxo-Degradable



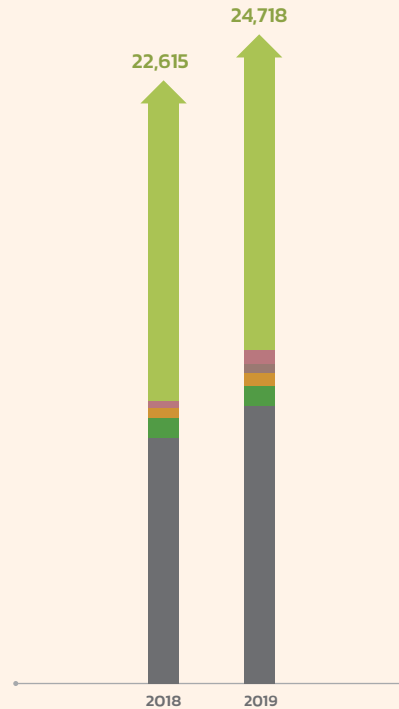
- Total plastic consumed (million pieces)
- Total plastic consumed per stores (million pieces per stores)



Percentage of Plastic Consumption by type (tonnes)



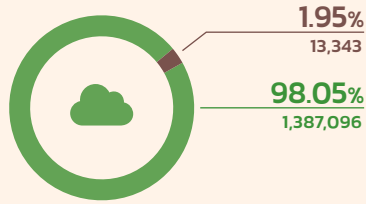
Total Plastic Consumed (tonnes)



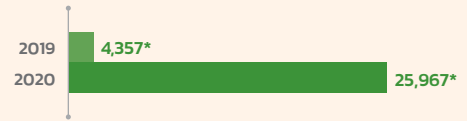
Note: Scope of plastic consumption data (Plastic Packaging / Plastic Bags / Single use Plastic) provided from CP ALL Plc. only

GHG Emissions

- Direct (Scope 1) GHG Emissions (tonnes CO₂e)
- Energy Indirect (Scope 2) GHG Emissions (tonnes CO₂e)

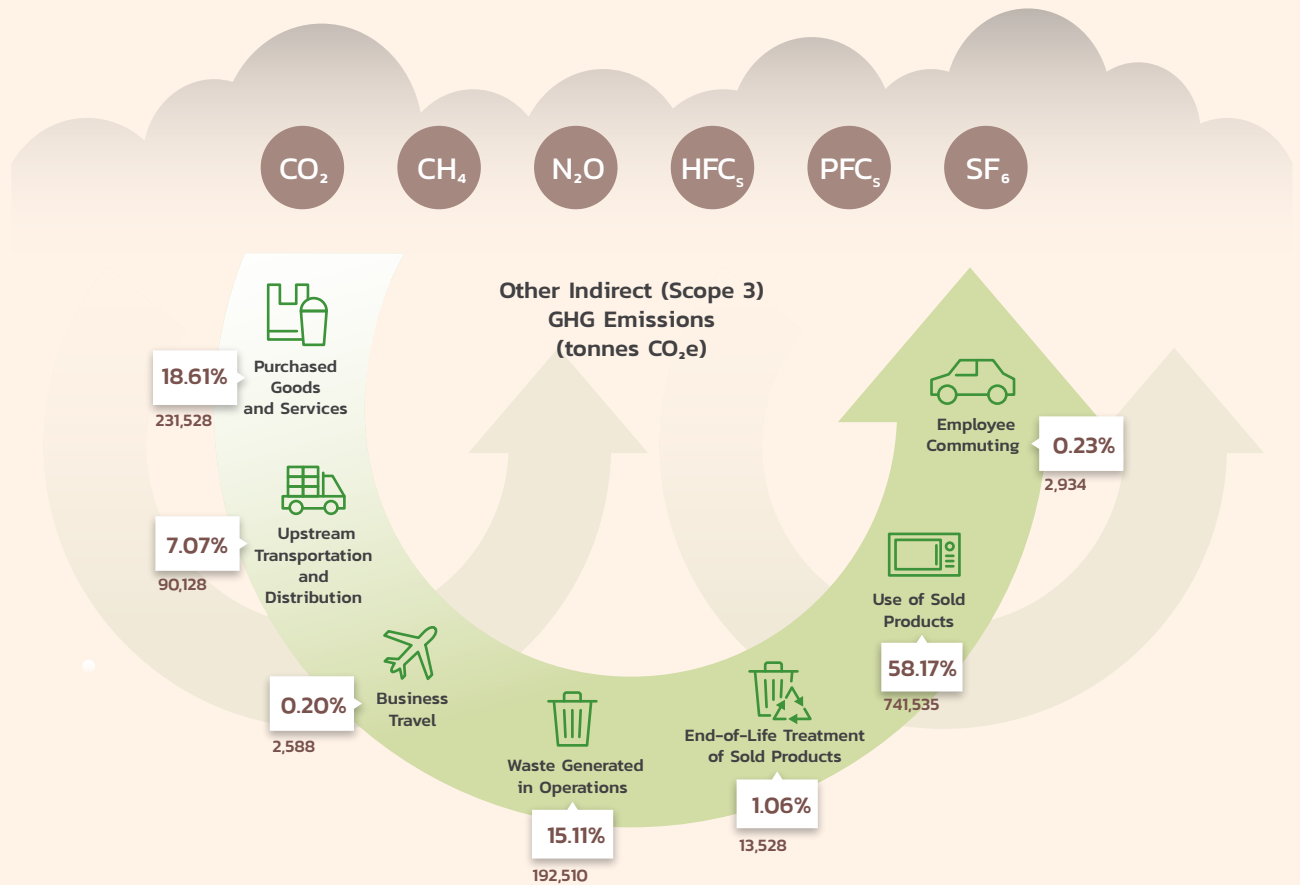
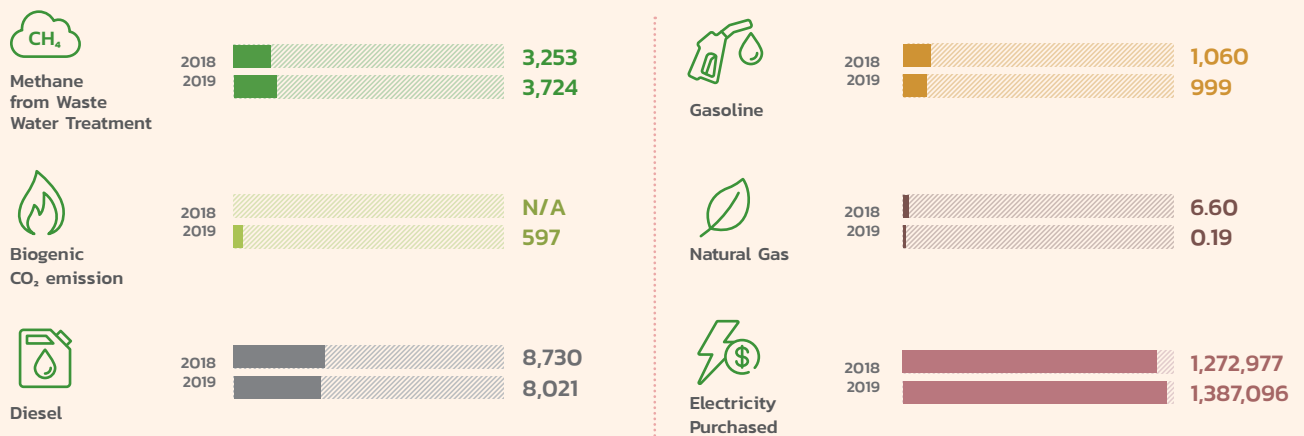


Carbon Offset (tonnes CO₂e)



*Carbon offset calculated from reduced plastic consumption project and renewable energy consumption

GHG Emissions by Source (tonnes CO₂e)



Management Approach

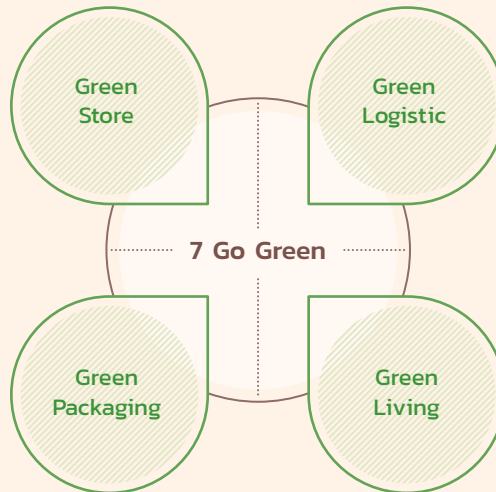
The Company established climate change management approach in tandem with responsible business approach. Measures were developed to enhance energy efficiency and energy conservation. There are also measures to increase renewable energy consumption, and plastic packaging management in line with the Government’s

plastic waste management plan. The Company supports and collaborates with other sectors to mitigate impacts from business operations, and to reinforce the public’s awareness and recognition on how significant environmental issues are.

Climate Change Management Framework



7 Go Green Strategy



Furthermore, the Company continuously communicates performance to stakeholder to demonstrate transparency and traceability through CDP’s Climate Change Disclosure system, sustainable reports, and the Communication on Progress (COP) to the UN Global Compact (UNGC).

Climate Change Risk and Opportunity Assessment

The Company assesses climate change risks and opportunities through enterprise risk assessment from bottom-up, in which each business unit specifies risk factors relevant in their operation through Risk Champion. Top-down assessment refers to an assessment through corporate strategy board, which includes current and emerging risks according to Task Force on Climate-related Financial Disclosures (TCFD). Multiple factors will be considered and assessed, as follows.

Factors for Risk Assessment

	Risks	Impacts to Business
Physical Risk	Acute and chronic physical risks may occur from climate change, such as floods and drought, unpredictable climate change, increased temperature	<ul style="list-style-type: none"> • Damage to factories, branch stores, infrastructure and equipment • Product management, such as management plan, storage and logistics • Production and quality of products • Agricultural produces – the Company’s key products • Energy performance and respective expense
Policy and Legal	Current and emerging policy and legal risks may have impacts to business and regulations on climate; there maybe changes from the global stage, government and forecast of climate change scenario	<ul style="list-style-type: none"> • Legal and regulatory compliance regarding energy-saving building design • Change of refrigerant due to the phased out of former refrigerant following to the governance’s announcement • Cost, management, alternative material sourcing, and operations required for single-use plastic management
Technology	Technological risks may affect business, requiring adaptability towards different technological changes	<ul style="list-style-type: none"> • Expense for technological change, such as infrastructure or equipment to facilitate technology, as well as training for employees and experts
Reputation	Reputational risks from stakeholders’ increased expectation, which affects the brand’s reputation, value, products, services and business operations	<ul style="list-style-type: none"> • Negative reputation regarding the environment and climate, if there is no apparent performance as a largest retail business in Thailand

Factors for Risk Assessment

	Opportunities	Impacts to Business
Resource Efficiency	Opportunity to increase efficiency of energy consumption and other resource, as well as increasing the proportion of renewable energy used, via advanced and diverse technology available	<ul style="list-style-type: none"> • Reduced cost due to effective energy consumption • Reputation for effective energy consumption • Reduced cost of resource and waste management
Energy Source	Opportunity to select an energy source which is stable and diverse	<ul style="list-style-type: none"> • Opportunity to select solar panels with increased efficiency and affordability, which allows reduction of energy expense and serve as reserve electricity generator in case the main electricity network malfunctions
Produces and Services	Opportunity to increase the proportion of certain products and services, which enhances reduction of GHG emissions and are environmentally friendly.	<ul style="list-style-type: none"> • Enhance innovation of products and services and increased of products and service's income • Increasing of good reputation from product and services which reduced of GHS emissions
Market	Opportunity to increase competitive capacity and market edge over competitors in aspects related to climate change	<ul style="list-style-type: none"> • Revenue from environmentally friendly products • Add the channels of products and services, including with rapidly accessing of customer

Note : The management process remains in the consideration and planning process



1. Green Store

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

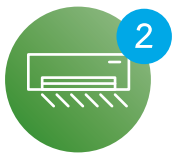
- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Efficiency Improvement of Cooling Coils for Large Cooling Vaults Project 2 Inverter Air Conditioner Project in 7-Eleven 3 LED Lightbulb Project 4 In-Store Exploration and Climate Monitoring Project | <ul style="list-style-type: none"> 5 Solar Energy Project 6 Improvement of Screenless Product Display Shelves Cooling System Project 7 Knockdown Store Project 8 Electric Vehicle Charging Station |
|--|--|





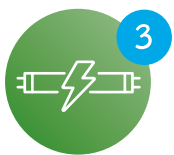
Efficiency improvement of cooling coils for large cooling vaults project

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.



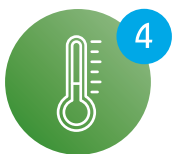
Invert Air Conditioner Project in 7-Eleven

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 CO₂e 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 Mittr 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

energy consumption
per month at
163.78
kWh per stores
on average



It will be able
to reduce
GHG emissions by
7,924
tonnes CO₂e per store.



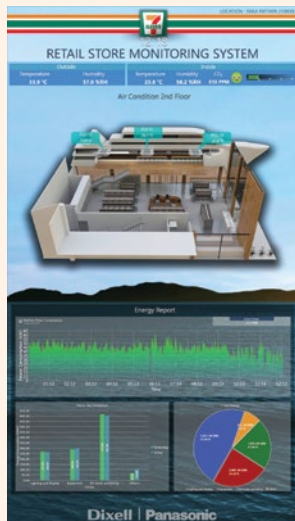
This resulted in reduced
energy consumption
per month at
864
kWh per store
on average



There is now
a total of
3,983
stores



To reduced energy
consumption by
482.65
kWh per store
per month.



Solar Energy Project

5.1 7-Eleven Stores



In 2019,
10
stores were
installed
the Solar Cell



Total generation
electricity of
196,680
kWh per year



Reduced GHG
emissions by
114.49
tonnes CO₂e.

5.2 Siam Makro



In 2019,
20
stores were
installed
the Solar Cell



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



Reduced GHG
emissions by
1,632.16
tonnes CO₂e.

5.3 CPRAM



In 2019,
1
stores were
installed the
Solar Thermal



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



Reduced GHG
emissions by
446.17
tonnes CO₂e.



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 CO₂e. 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



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



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 CO₂e.

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.

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 CO₂e. 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.

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.

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 CO₂e of GHG emissions.

3. Green Packaging


The Company aims to continuously “Decrease and Discontinue” plastic bag usage. Policy and guideline on packaging have been established, along the goal to reduce amount of waste landfilled to minimum. The Company planned out a Roadmap consistent with the Government’s plastic waste management plan, which aims for 100% reuse of plastic by 2027. The plan is to reduce waste generated at source. However, there remains exceptions for plastic usage in products requiring it, such as ready-to-eat meals. The plan is substantiated with promotion of environmentally-friendly packaging to reinforce awareness of entrepreneurs and consumers alike, encouraging them to opt for environmentally-friendly packaging. This consists of several projects, which can be categorize according to the primary measures, as follows.



The 1st Measure
To decrease and discontinue plastic at-source, through development of eco-friendly packaging



The 2nd Measure
To decrease and discontinue plastic consumption by driving for a decrease and a discontinuation of single use plastics



The 3rd Measure
To manage post-consumption plastic waste through support and promotion of plastic waste reuse and recycling (circular economy)

Note: The 3rd Measure will be mention in Chapter “Protecting the Ecosystem and Committing to Being Green”

Thai Government sets the goal to Phased out for 7 types of single-use plastics

Products to be phased out by 2022 comprises

- 1 Water bottles’ Cap seal
- 2 Products with ingredients containing OXO
- 3 Microbeads

Products to be phased out by 2025 comprises

- 4 Plastic bags whose thickness is less than 36 microns
- 5 Food-containing foam packages
- 6 Single-use plastic cups
- 7 Plastic straws

Note: Thai Government determine that the Modern Trade business have to phased out shopping bags whose thickness is less than 36 microns since January 1, 2020. However, it has temporality allow to grant of usage with 4 categories of products. For CP ALL Plc., warm food products and fruits has arrange to this exceptional category

1 7 Go Green 24/7

7 Go Green 24/7 is a project focuses in improving packaging used in 7-Eleven stores, opting for those made of natural and bio-degradable materials. This can be achieved through multiple of initiatives, such as “Green Cups,” which are biodegradable, to be used with a drinks from dispensers, and 7 Select and All Café beverages. Furthermore, there are the projects to switch materials used for wrapped straws to papers. Nowadays, over 300 branches have started using packaging made from natural materials. These are locations in hospitals, universities, and tourist attraction along the coasts. The implementation has been expanded to over 300 branches, within hospitals, universities and islands that are important natural attractions store branches.



2 PVC Phase Out Project



Furthermore, for National Brand products, the Company has also requested for Critical Tier 1 suppliers’ collaboration to discontinue PVC. 16 from 51 Suppliers (31%) had collaborated in 2019.

3 Plastic Consumption Reduction to be Achieved through Packaging Design

3.1 In 2018, the Company has improved the production process of cooked rice containers, changing from injection to thermoform instead. Later in 2019, the Company continues to move forward in developing ready-to-eat meals' packaging to be more environmentally friendly. There are new designs, as follows.

Cooked Rice

Changing stickers on the lid to a printing on the side to reduce the need for plastic. Reducing material preparation process for recycling. Reducing non-recyclable waste by **24** tonnes in 2019, from **5** million containers used per month.

The diagram illustrates the evolution of rice container packaging. It shows three stages: 1) An injection-molded clear plastic container with a white lid and a sticker on the lid. 2) A thermoformed clear plastic container with a white lid and a sticker on the lid. 3) A thermoformed clear plastic container with a white lid and the product information printed directly on the side of the container. Red arrows point from the top row to the bottom row, indicating the transition from the old design to the new one.

3.2 Adjust, modify, resizing the size and thickness of plastic bags for warm food products. Meal bags are used to replace L-size plastic bags, making it more function appropriate. There are 70 million Meal bags used in 2019. This means the efforts reduce as much as 133 tonnes of plastic usage per year.

70 million Meal bags used in 2019

133 tons of plastic usage per year

3.3 Change a 1-hole rice tray in square shape by adjusting the plastic lid become a top seal

1-hole rice tray with square shape (Crab and shrimp fried rice)

From having a closable lid and a sticker on top, the design was shifted to having a top plastic seal to reduce the amount of plastic require, the sticker and other non-recyclable waste by **34** tonnes in 2019. The post-consumption can be as much as **1.1** million containers per month.

The diagram compares two rice tray designs. On the left is a traditional 1-hole rice tray with a separate lid and a sticker on top. On the right is a new square-shaped rice tray with a top seal, eliminating the need for a separate lid and sticker. The new design is shown as a single, integrated unit.

4 Foam Phase-Out at 7-Eleven Stores

The Company is committed to phase out polystyrene foam in 7-Eleven stores, in alignment with the campaign from Department of Health. The aim is to raise awareness to entrepreneurs and consumers in opting for environmentally friendly packaging instead of foam packaging. The latter can be damaging to health, and is difficult to naturally degrade. Furthermore, the Company also promotes 'decrease and discontinue' of single-use foam packaging, aspiring to become a 100% zero-foam packaging organization. In conjunction, Siam Makro Co. Ltd., a subsidiary under CP ALL Plc. has also announced

the intention to stop distribution of food packaging made from foam. The project is called "Say Hi to Bio, Say No to Foam", inviting you to use environmentally friendly packaging." A total of 12 Siam Makro branch stores has piloted the project. Participating branches comprises Phuket, Krabi, Thalang, Samui, Rawai, Lamai, Pha-Ngan, Patong, Koh Chang, Ao-Nang, Karon and Ban Phe. The Company promotes entrepreneurs to opt for more eco-friendly products, which is one of the approaches to minimize environmental impacts.

5 Paper Gram Reduction in Cups

A Phase II Paper Gram Reduction in Cups Project has collaboration with suppliers whose producing paper cups for the Company, comprises of KMP Company Limited and CPPC Company Limited. The goal is set to reduce paper consumption and standardization the paper grams of the cups to be consistent. Forecasting, this project will be deploy throughout the country and reduce paper usage by 145 tonnes by 2020.

7 Utilize Raw Materials from Sustainable Replacement Forests



Examples of verified PEFC packaging

6 Reduce Plastic Consumption and Enhance Recycling

Changing film packaging of hot sandwiches, from multi-layer film to one-layer film. The latter is mono materials and monolayer, therefore ensuring greater ease in waste management. The project was executed in collaboration with NSL Company Limited (supplier) and TAK Company Limited (packaging dealers). This project remains in development process.

Beyond aforementioned program, as derived from packaging policy, the Company is also committed in utilizing resources from sustainable sources. The approach is put in collaborative efforts of packaging development with a supplier, Tri Sam Company Limited to ensure that the papers sourcing from sustainably managed, regulated forests and certified with PEFC. In 2020, the company has developed the hot sandwiches’ box with PEFC labeling as much as 985 tonnes of product. Moreover the Company was executed in collaboration in straw wrapped paper development with a supplier, B&B Strawpack Company Limited, there are the projects to switch materials used for wrapped straws to papers. These are locations in islands, universities, hospitals and parks. These have been certified for FSC. As of 2019, consumption was at 32 tonnes by the year.

4. Green Living

CP ALL Plc. Is committed to operate according to plastic reduction campaign. Raising awareness and understanding to youths, community, employees and customers, is part of the efforts to reduce plastic bags. This demonstrates the Company’s commitment to instill environmental considerations. An example would be the program ‘Reducing a bag a Day, You can do it.’ The program re-adjusts consumers’ behaviors to refuse plastic bags, and has been deployed continuously. In 2019, each plastic bag rejection equates to 0.2 Baht, which will be donated to 77 local hospitals for their medical equipment purchase. Similarly, it is also the efforts in environmental conservation – facilitating towards more sustainable society. The project has public relations campaign through advertisement, under the concept, ‘The best promise is actionable one.’ The concept were expressed by Khun Toon Artiwara and BNK 48. In 2019, the Company was able to reduce plastic consumption by 1,152 million bags

in accumulation. It was able to reduce GHG emissions by 23,476 tonnes CO₂e, and donated a total of 134 million baht to siriraj hospital and 77 local hospitals. Similarly, in response to the Government’s policy driving for plastic bag ban; the company has organized a press conference, ‘Thais Assemble, Refusing Plastic Bags’ in 2020. The goal is to conserve the environment. It has been announced that from 1st January 2020 onwards, all 7-Eleven stores across Thailand encouraged customers to refuse and bring their own cloth bags, or opt for other packaging with eco-friendly materials.



Simultaneously, CPRAM Co. Ltd, a subsidiary under CP ALL Plc. is committed to campaign for reduction of plastic bag consumption. Their efforts culminate in “CPRAM Green Life Project,” through raising of public awareness for efficient resource consumption, and encouraging behavioral change to decrease and discontinue usage of non-eco-friendly products. CPRAM has organized knowledge-sharing activities for employees, ‘Zero Waste Station’ activity, which enhance employees’ understanding on waste sorting and its benefits. There are also, ‘Energy-Saving’ activity, which shares how energy can to use energy effectively. Such activity reinforce employees’ consideration when it comes to resource usage. There are also ‘Cloth-Bag Painting’ activity, which let employees to create their own patterns and use their self-designed bags instead of plastic bags. Participation fees is at 20 Baht, and is donated to buy lunches for underprivileged children. There are also, ‘Eat Good No Food Waste’ activity which shares knowledge on how to reduce food waste, one of the most prevent challenges at present. Employees also learn how to grow organic vegetables from farmers themselves. Similarly, CPRAM also gives out cloth bag to employees to encourage phase-out of plastic bags in 7 corporate branches. The branches are, Lad Lum Kaew, Lad Krabang, Bo-Ngern, Chonburi, Khon Kaen, Lumpoon, and Surathani. In 2019, the reduction accumulates to 176,000 plastic bags (from October 2018 – September 2019) with total GHG emissions reduction by 4.14 tonnes CO₂e.

Low Carbon City

CP ALL Plc. in collaboration with Thailand Greenhouse Gas Management Organization (TGO), United Nations Development Plan of Thailand (UNDP Thailand) have signed an agreement to work together and realize sustainable development goals. This comprises campaigning for reduced plastic bag consumption, and promotion of energy efficiency through sustainable management system. This was pilot in 5 provinces, consisting of Chiang Mai, Khon Kaen, Nakhon Ratchasima, Phuket and Koh Samui, Surathani. The collaboration focuses in addressing plastic waste management, and promotes development of urban environment to community, society, as well as Thailand. In tandem, the goal is to reduce greenhouse gas emission, the key factor behind global warming, and to drive the city towards sustainability – before expanding to across the country.



Carbon Label Participation

The Company has received Carbon Footprint assessment for its products, registered and labelled Carbon Footprint label on their products. The labels enable consumers to be part of GHG emissions reduction efforts. The Company currently proceed to register the Carbon Footprint Labelling by Thailand Greenhouse Gas management organization (TGO) with 5 products comprising “Rice topped with stir-fried pork and basil”, “Rice topped with stir-fried shrimp and basil”, “Crab Dumpling”, “Big Minced Pork Bun” and “Big Minced Pork with Salty Egg Bun”. These products are certified of Carbon Footprint for

Products (CFP). Two products namely, “Big Minced Pork Bun” and “Big Minced Pork with Salty Egg Bun” were certified the Carbon Footprint Reduction (CFR), and the Carbon Footprint for Organization (CFO) in 1 organization.



Carbon Footprint for Products Label

5 Products Certified



Carbon Footprint for Organization Label

1 Organizations Certified

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 ₂ e	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 ₂ e	8,115.53	9,008.51	13,051.12	13,343.50
	• Methane from waste water treatment	Tonnes CO ₂ e	1,115.46	914.04	3,253.40	3,724.42
	• Mobile combustion	Tonnes CO ₂ e	7,000.07	8,094.47	9,797.72	9,021.92
305-1 (c)	Biogenic CO ₂ emission	Tonnes CO ₂ e	N/A	N/A	N/A	597.15

GRI Standard	Requested Data	Unit	2016	2017	2018	2019
305-2 (a)	Energy Indirect (Scope 2) GHG emissions	Tonnes CO₂e	1,123,536.20	1,175,060.15	1,272,977.98	1,387,096.90
	• Electricity purchased	Tonnes CO ₂ e	1,123,536.20	1,175,060.15	1,272,977.98	1,387,096.90
	• Energy Reduction	Tonnes CO ₂ e	N/A	N/A	4,357.98	25,967.91
305-3 (a)	Other Indirect (Scope 3) GHG emissions	Tonnes CO₂e	N/A	N/A	N/A	1,274,754.60
	• Purchased goods and services	Tonnes CO ₂ e	N/A	N/A	N/A	231,528.50
	• Upstream transportation and distribution	Tonnes CO ₂ e	N/A	N/A	N/A	90,128.25
	• Waste generated in operations	Tonnes CO ₂ e	N/A	N/A	N/A	192,510.20
	• Business travel	Tonnes CO ₂ e	N/A	N/A	N/A	2,588.75
	• Employee commuting	Tonnes CO ₂ e	N/A	N/A	N/A	2,934.80
	• Processing of sold products	Tonnes CO ₂ e	N/A	N/A	N/A	741,535.40
	• End-of-life treatment of sold products	Tonnes CO ₂ e	N/A	N/A	N/A	13,528.70
305-4 (a)	GHG Emissions Intensity	Tonnes CO₂e per million THB of revenue	2.50	2.42	2.44	2.45
	Total Waste Generated	Tonnes	21,720.63	28,153.96	114,047.21	735,710.89
306-2 (a)	Hazardous Waste	Tonnes	21.34	29.02	30.93	21,448.74
	• Recycling	Tonnes	0.04	2.25	1.94	16,943.75
	• Recovery, including energy recovery	Tonnes	N/A	N/A	N/A	457.00
	• Incineration (mass burn)	Tonnes	18.01	23.76	26.54	2,680.54
	• Landfill	Tonnes	3.29	3.01	2.45	1,367.45
306-2 (b)	Non - Hazardous Waste	Tonnes	21,699.29	28,124.94	114,016.28	714,262.15
	• Recycling	Tonnes	31.16	32.76	81,394.03	561,302.84
	• Composting	Tonnes	2,021.71	5,115.01	6,103.60	9,757.64
	• Incineration (mass burn)	Tonnes	1,193.51	1,651.77	1,955.43	1,778.93
	• Landfill	Tonnes	18,452.91	21,325.40	24,563.22	141,422.74
	Total waste that has been utilized	Tonnes	2,052.91	5,150.02	87,449.57	588,461.23
	Total waste disposal	Tonnes	19,667.72	23,003.94	26,547.64	147,249.66
	The ratio of waste that has been utilized per total waste generated		0.09	0.18	0.77	0.80

Note

- N/A = Not Available
- Sustainability performance reporting is made in accordance to the reporting framework of the GRI Standard, version 2016 (2018 revision)
- Energy consumption (Gigajoules) is the multiple of fuel volume and the conversion factor of each fuel type (referencing the Department of Alternative Energy Development and Efficiency : DEDE)
- Total energy consumption within the organization is the sum of all consumed of non-renewable energy, renewable energy and electricity purchased externally
- Energy intensity is total energy consumption per million THB of revenue
- Total water withdrawal is the sum of all usage of municipal water supply (referencing average prices of the Metropolitan Water Authority and Provincial Waterworks Authority of each locations) and groundwater (referencing Department of Groundwater Resources)
- Total water withdrawal from water stress areas covers municipal water supply and groundwater, and has been assessed with the Aqueduct Water Risk Atlas of the Water Resources Institute (WRI)
- Water intensity covers municipal water supply and groundwater volumes per million THB of revenue
- Greenhouse gas emission is the multiple of information on activities that release greenhouse gases ("Activity Data") and the Emission Factor (referencing the Thailand Greenhouse Gas Emission Management Organization, and is reported as Global Warming Potential (GWP) following guidelines of the Intergovernmental Panel on Climate Change (IPCC)
- Direct greenhouse gas emissions (Scope 1) covers all greenhouse gas emission volumes from methane from waste water treatment, mobile combustion, and biogenic carbon dioxide emission
- Energy indirect greenhouse gas emissions (Scope 2) covers all greenhouse gas emission volumes from energy consumption of electricity purchased externally to the organization
- Other indirect greenhouse gas emissions (Scope 3) includes other greenhouse gas emission volumes that operations outside of the organization's management
- Greenhouse gas emissions reduction volume covers renewable energy consumption and reduction of plastic bag usage
- Greenhouse gas emissions intensity covers all direct and energy indirect greenhouse gas emission volumes per million THB of revenue
- Total waste generated volume is the sum of hazardous waste and non-hazardous waste. In 2019, the data collection scope expanded to include other product of distribution centers, including oil-contaminated containers and cargo crates, and was improved to increase data accuracy