



## Climate Change Framework

### Challenge and Business Opportunity

A continued rise in the average global temperature is having a severe impact on the world's climate and causing many climate change-induced events such as flooding and droughts. At the 21st UN Climate Change Conference (COP21) in Paris, France, participating countries agreed to limit the rise in global average temperature to below 2 degrees Celsius compared to pre-industrial levels, ideally aiming for 1.5 degrees Celsius. Thailand is part of this effort and has committed to achieving carbon neutrality by 2050, ultimately reaching net zero greenhouse gas emissions by 2065. This commitment is accelerating the efforts from both public and private sectors in Thailand to manage greenhouse gas emissions more effectively. The ongoing efforts to achieve such goal come with both risks and business opportunities such as the increase in energy costs, the increase in demand for eco-friendly products, and several impacts on climate-related issues in all ESG dimensions.

### Governance and Strategy

Home Product Center Public Company Limited (the "Company") established a statement of position to take action on climate change. Our goal aligns with the Paris Agreement to achieve net zero emissions by 2050, which has been announced as public policy on the Company's climate tackle commitment. To achieve this, the Board of Directors will oversee all company operations that could impact the global climate directly and indirectly (both risks and opportunities).

The Board of Directors endorsed the Strategy and Sustainable Development Committee to work in line with the Paris Agreement goal as well as its pledges on sustainable use of natural resources and energy with the additions of initiatives. The business shall be operated in compliance with the strategy that strives to optimize the use of natural resources and adopt circular economy principles to help reduce greenhouse gas emissions. The Strategy and Sustainable Development Committee are bound to meet on quarterly basis to discuss and adjust the Company's climate change strategy according to the current situations. In addition, the Company prioritizes supporting trade associations whose policies align with the Paris Agreement, as well as supporting climate-related lobbying activities that share the same goals. To ensure alignment, the Company has established a framework to assess climate-related risks, opportunities, action plans, and consideration of trade association membership. The framework covers all jurisdictions across the company's operations in Thailand.

## **Climate Change Management Framework**

The Company has qualitatively and quantitatively considered and established a framework for managing climate change throughout supply chains. The Company also determined policies and set up goals for maximum efficiency in energy usage, renewable energy usage, waste management and reduction of plastic packaging usage. Climate-related risks and climate-related opportunities are evaluated together with scenario analysis, which is conducted in accordance with the guidance of the Task Force on Climate-related Financial Disclosure (TCFD). In addition, the Company makes both current and future work plans that involve different risks, e.g. acute and chronic climate pattern of physical risk, policy, regulation and legal risks, technology risk, market risk, and reputation risk. In addition, performance regarding management and remedy for climate change impacts is communicated with stakeholders via various channels, e.g. sustainability development reporting.

## **Climate Change Management System and Governance Framework**

The Company has a comprehensive management system for climate-related issues. This system ensures that our efforts achieve the desired goals. The Company utilizes various tools such as risk mapping, risk prioritization, and Key Risk Indicators (KRIs) to review risks, root causes, potential impacts, and mitigation plans. Additionally, the Company has a review and monitoring process to evaluate potential trade associations and direct lobbying activities. This process assesses their alignment with the Company's policies and commitment to the Paris Agreement. In case of misalignment, the Company has a clear framework to address the misalignment between a trade association's climate change policy positions and the Company's direction by requesting adjustments and corrective actions through a warning system. This may include distancing the Company from such associations or potentially terminating any contributions.

The Company takes a structured approach to climate action, with a governance framework that aligns with international sustainability standards. This framework consists of several key functions including the Board of Directors, a dedicated climate committee, executives, and management working group. The governance structure is placed to engage and drive the Company's climate actions and activities according to the climate strategy and framework.

The chart below details the specific accountabilities and responsibilities assigned to each group within this framework:



### Accountabilities and Responsibilities

#### Board of Directors

The Board of Directors is responsible for overseeing the policies, strategies, action plans, climate-related risks and opportunities of the Company as proposed by executives. The Board of Directors ensure that the business operation is in line with the Company's commitment and goal. The Board of Directors also ensure that the action of trade associations is in line with the Company.

#### Strategy and Sustainable Development Committee

The Strategy and Sustainable Development Committee hold the following accountabilities and responsibilities:

1. Determine and revise policies, strategies, operational plans and sustainable development goals.
2. Monitor, supervise, provide counseling, support, promote and revise the implementation of sustainable development policies.
3. Create balance among business conduct, environmental safeguards and improvement of the well-being of people in society/community.
4. Monitor and report the performance of corporate sustainability to stakeholders

For climate-related accountabilities and responsibilities, the Strategy and Sustainable Development Committee prioritizes the importance of reducing the greenhouse gas emission as well as climate-related risks and opportunities. Therefore, the Committee has placed a framework and collaborate with executives, the energy conservation committee and the renewable energy committee in a concerted effort to cut greenhouse gas emissions. The Strategy and Sustainable Development Committee is also acknowledging and supporting the Company's executives to connect with the trade of associations to clarify the alignment and position between each other regularly.

## Executives

Managing Director, Executive Vice Presidents, Senior Vice Presidents, and other executives are accountable and responsible for assessing and managing climate-related risks and opportunities, ensuring the company reach the targets, and driving the company towards Net Zero emissions. Additionally, all executives will act as representatives when engaging with trade associations.

## Energy Conservation Committee and Renewable Energy Committee

The Energy Conservation Committee and Renewable Energy Committee was established by assembling the representatives from each related department to conduct the climate-related activities. Their accountabilities and responsibilities are shown as follow:

1. Determine objectives, goals and operational plans regarding greenhouse gas emissions control.
2. Study and seek cutting-edge technology to assist in slashing greenhouse gas emissions.
3. Monitor the latest climate change situation that adversely affects sustainability, both at the national and international levels (e.g. new laws and regulations).
4. Assess risks and potential impacts of climate change on financial reports and business practices, in line with recommendations from the global Task Force on Climate-related Financial Disclosure (TCFD).
5. Devise a draft strategy using information obtained from monitoring of local and global climate change and its effects on corporate sustainability. Identify risks and opportunities. The strategy will focus on two areas:
  - Mitigation Action Plan: to provide practical guidance for minimizing the impacts of higher temperatures.
  - Adaption Action Plan: to provide practical guidance for tackling the climate change issues.
6. Follow up and revise operational performance conducted in correspondence with the Company's draft strategy and operation plans. Report the performance results to internal and external stakeholders.

## **Risk Management and Opportunities**

The Company uses a variety of tools to assess climate-related risks and opportunities, to help understand the potential challenges and benefits the company faces. The Company analyzes the data both qualitatively and quantitatively to identify climate-related risks and opportunities across three timeframes: short-term (1-3 years), medium-term (3-10 years), and long-term (10-20 years). This comprehensive approach ensures the Company can prepare action plans to minimize any negative impacts on financial reports and business practices. The Company's risk assessment process follows the recommendations of the Task Force on Climate-related Financial Disclosure (TCFD).

The Task Force divided climate-related risks into two major categories:

1. Transition Risks: Risks related to the transition to a lower-carbon economy
2. Physical Risks: Risks related to the physical impacts of climate change.

### Climate-related Risk Assessment

Category	Climate-Related Risk	Potential Financial Impact
Transition Risk	<b>Policy and Legal</b> <b>Medium-term (3-10 years)</b> <ul style="list-style-type: none"> <li>- Changes in government policy and law (e.g. Climate Change Act). Imposition of carbon tax.</li> <li>- Higher product standards. More eco-friendly services.</li> </ul>	<ul style="list-style-type: none"> <li>- Increased production and service costs.</li> <li>- Increased operating costs (e.g. GHG audit costs).</li> <li>- Amortization and impairment charges not in line with state policies.</li> </ul>
	<b>Technology</b> <b>Medium-term (3-10 years)</b> <ul style="list-style-type: none"> <li>- Unsuccessful investment in increasing efficient use of energy. High costs.</li> <li>- Conduct R&amp;D to produce goods and provide services using clean technology.</li> </ul>	<ul style="list-style-type: none"> <li>- The increase in R&amp;D investment cost in new technology</li> <li>- The return on investment in projects has been reduced due to the changes in emerging technologies.</li> <li>- Rising cost of raw materials which impact profit margins and the changeable source of income</li> </ul>
	<b>Market</b> <b>Medium-term (3-10 years)</b> <ul style="list-style-type: none"> <li>- The change in consumers behavior trend e.g., Environmentally friendly products preference or those products certified with low levels of greenhouse gas emissions may assert more difficulty on merchandising and availability of the sustainable raw materials.</li> <li>- The decrease in fossil fuel demand and climate change concern might affect future operation such as transportation operation.</li> </ul>	<ul style="list-style-type: none"> <li>- Negative impact on the Company's sales if no adaptation on products to be more environmentally friendly</li> <li>- Falling market share if no adaptation to the change in consumer behavior</li> </ul>
	<b>Reputation</b> <b>Short-term to long-term (1-20 years)</b> <ul style="list-style-type: none"> <li>- The company operates with no regards to environmental concern, which will negatively affect the company's image.</li> </ul>	<ul style="list-style-type: none"> <li>- The decline in product and service demand impacts on the sales, resulting from negative customers' perception toward the Company.</li> <li>- Stakeholder perception may enable the Company to access the capital and business opportunities.</li> </ul>

Category	Climate-Related Risk		Potential Financial Impact
Physical Risk	Acute Short-term to long-term (1-20 years)	<ul style="list-style-type: none"> <li>- Increased intensity of floods, storms, hailstorm, and drought might affect the Company's supply chain</li> </ul>	<ul style="list-style-type: none"> <li>- Operating costs increase on natural disaster-related business disruptions.</li> </ul>
	Chronic Short-term to long-term (1-20 years)	<ul style="list-style-type: none"> <li>- Abnormal seasonal changes such as longer rainy or summer seasons, etc.</li> <li>- Rising sea levels might affect the logistic of the Company in the location near coastal area</li> <li>- Rising mean temperatures might increase the use of air conditioner.</li> </ul>	<ul style="list-style-type: none"> <li>- Renovation costs for damaged branches.</li> <li>- Renovating cost for new store construction increase to compensate the impact.</li> <li>- Costs of insurance rises while premiums may be limited in high-risk areas.</li> </ul>

#### Physical Risk Management and Action Plan

Category	Climate-Related Risks	Action Plan	Time Horizon		
			Short-term (1-3 years)	Medium-term (3-10 years)	Long-term (10-20 years)
Acute	Floods	<ul style="list-style-type: none"> <li>- Sewage cleaning to remove any object that prevents the flow of water as well as constructed flood barrier surrounding the Distribution Center</li> <li>- Location for new stores shall be plan to construct with 2-m height above road level.</li> </ul>	✓	✓	✓
	Storms	<ul style="list-style-type: none"> <li>- Evaluate stores' structure integrity to prevent any leakage or damages</li> </ul>	✓	✓	✓
	Hailstorms				
	Drought	<ul style="list-style-type: none"> <li>- Evaluate stores' location-specific risk on drought to provide mitigation plan, while the drought level shall be considered in new store construction plan.</li> </ul>	✓	✓	✓
Chronic	Abnormal seasonal changes such as longer rainy or summer seasons, etc.	<ul style="list-style-type: none"> <li>- Check and maintain the functionality of power generators, cleanliness and readiness of reserve water tanks / containers</li> </ul>	✓	✓	✓
	Rising sea levels	<ul style="list-style-type: none"> <li>- Maintain contacts with the local and national authorities while monitoring the sea levels on regular basis</li> </ul>	✓	✓	✓
	Rising mean temperatures	<ul style="list-style-type: none"> <li>- Increase employees' readiness and medical knowledge in case of heatstroke or any related symptom</li> </ul>	✓	✓	✓

## Climate-Related Opportunity

Category	Climate-Related Opportunity	Potential Financial Impact
Resource Efficiency	<ul style="list-style-type: none"> <li>- Reduce the use of resources that impact on environment.</li> <li>- Reduce waste and upcycle waste for circular product that enhance material-use efficiency and innovation to cope with disposal.</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce the cost of material revisions that have an environmental impact, such as recycled materials. or reducing chemicals usage</li> <li>- Revenue increase from sustainable products</li> </ul>
Energy Source	<ul style="list-style-type: none"> <li>- Use renewable energy to reduce energy usage that impact on environment.</li> <li>- Improve energy efficiency used in transportation to reduce the environmental impact.</li> <li>- Take part in reducing greenhouse gas emissions into the atmosphere.</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce utility costs by utilizing renewable energy sources such as solar energy</li> <li>- Reduce transportation costs by transferring to electric vehicles instead of fuel vehicles.</li> </ul>
Product & Service	<ul style="list-style-type: none"> <li>- Develop innovative products and services to serve the demand from environmentally conscious customers.</li> </ul>	<ul style="list-style-type: none"> <li>- Revenue increase from environmentally friendly products, new services, and increasing probability of repurchasing</li> <li>- Increase positive brand image awareness</li> <li>- Increase and maintain market shares from sustainable products and services</li> </ul>
Markets	<ul style="list-style-type: none"> <li>- Create competitive advantages in business related to environmentally friendly.</li> </ul>	<ul style="list-style-type: none"> <li>- Increase sales from existing or new customers who are interested in environmentally friendly products.</li> </ul>
Resilience	<ul style="list-style-type: none"> <li>- Join with various organization for environmental cooperation purpose.</li> <li>- Increase opportunities to explore procedures, processes, or innovation that have positive impacts on the environment.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve the company's sustainability and credibility.</li> <li>- Apply knowledges to increase the ability in the supply chain management</li> <li>- Increase funding opportunities from sustainable- focused investors.</li> </ul>

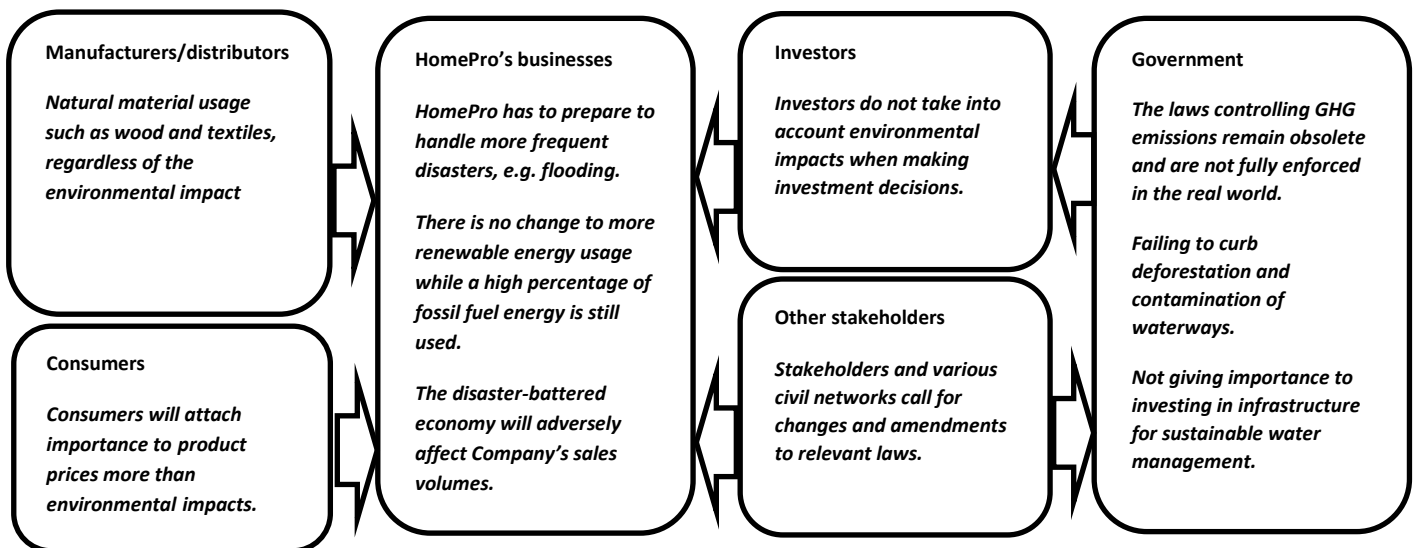
## Scenario Analysis

The Company has developed an action plan to achieve Net Zero Emissions by 2050, which analyzes data from the Company's operations (Climate-related Scenario Analysis) and the report summaries of The Intergovernmental Panel on Climate Change (IPCC), Fifth Assessment Report and The International Energy Agency (IEA) World Energy Outlook (WEO). This practice ensures that the Company is prepared to deal with the impacts of climate change, by considering both the qualitative and quantitative aspects for further business strategy and risk management of the Company. The results of the scenario analysis are as follows.

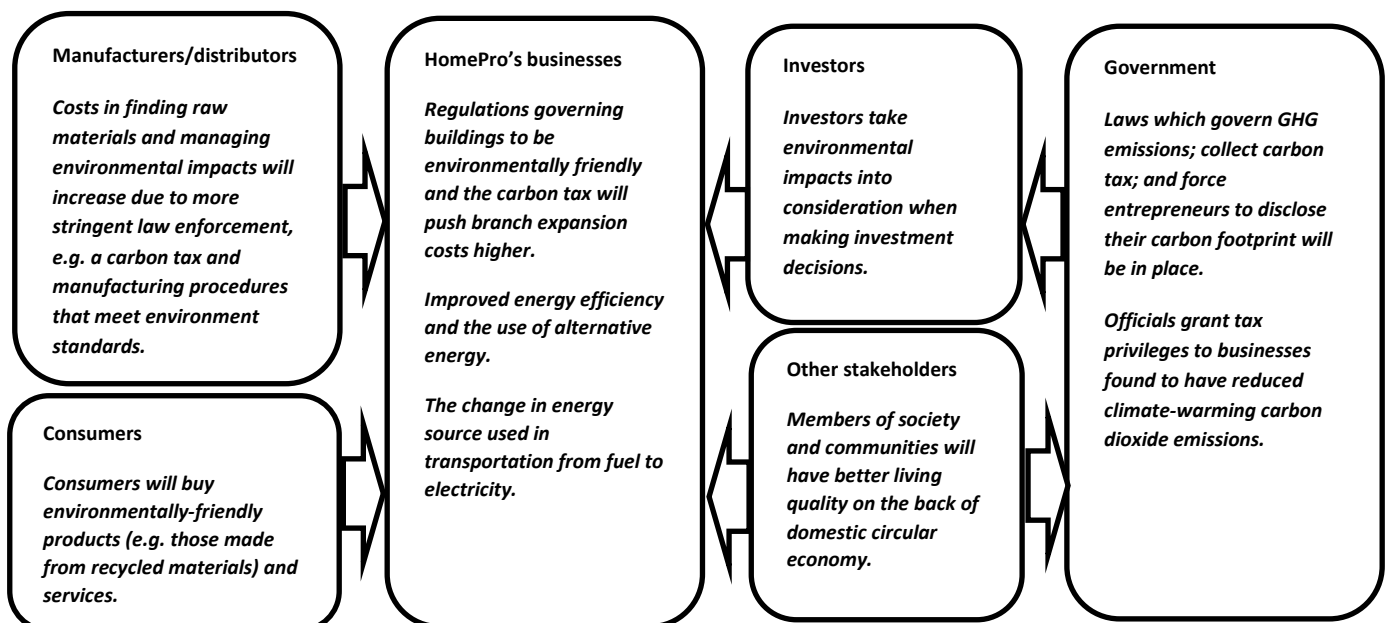
	4°C Scenario	1.5°C Scenario
<b>Transition risk</b>  IEA WEO scenarios	<b>IEA STEPS (Stated Policies Scenario)</b>  Governments in many countries enforce climate-related policy and impose a higher carbon tax rate to improve energy efficiency while maintaining energy security.	<b>IEA NZE 2050</b>  Due to the phase-out of coal and oil power plants, 50 percent of truck transportation is electric, and 70 percent of global electricity generation is from solar PV and wind.
<b>Physical risk</b>  IPCC AR5 Scenarios	<b>RCP 8.5</b>  Because of the failure to reduce carbon emissions, the Earth's temperature has risen above 2 degrees Celsius. As a result, the global temperature is rapidly and violently rising. Natural disasters are becoming increasingly severe and prevalent.	<b>RCP 2.6</b>  Net zero emissions by 2050, with an increase in global temperature of no more than 1.5 degrees Celsius by 2100.



**Scenario 1 (4°C Scenario)** This scenario predicts environmental changes when the rise in global temperature exceeds 4 degrees Celsius, above pre-industrial levels. It is the situation that all sectors do not collaborate to solve global warming problems, which cause Natural disasters and frequent weather violence resulting from the failure of all industry groups cooperation in reducing greenhouse gas emissions. Furthermore, there are no comprehensive climate change laws, and greenhouse gas emissions are high. All possible stakeholders' responses to Scenario #1 are listed below.



**Scenario 2 (1.5°C Scenario)** This scenario envisions environmental changes when the global temperature rise is kept below 1.5 degrees Celsius above pre-industrial levels. All sectors work together to tackle the global warming issues. The laws limiting GHG emissions are strictly enforced and a carbon tax is implemented more on an international scale. The global community will exert more efforts to scale up the development of clean energy. Below are possible responses to Scenario #2 from all stakeholders.



After analyzing both Scenario #1 and #2 and the potential effects of the climate change on the Company, it was concluded that there may be a risk to the Company's financial stability in the future. The Company has realized such a risk and has made a contingency plan to ensure that business operations proceed as normal. The potential adverse effects on the Company's finance are shown in the table below.

Potential financial impacts as a result of a world temperature rise of 4 degrees Celsius above pre-industrial levels, in case of no contingency plan for physical risks.	
Costs incurred from relocation of branches hit by natural disaster events	Branch relocation costs are estimated at around 700-800 million baht/branch (e.g. a branch impacted by rising sea levels).
Potential financial impacts as a result of a world temperature rise of 1.5 degrees Celsius above pre-industrial levels, in case of no contingency plan for transition risks.	
Expenses related to carbon tax collection	Costs arising from all branches unable to use solar power are projected at a combined 36.5 million baht, based on a carbon pricing of about 165 bath/ton.

## Metrics and targets

### KPIs (Key Performance Indicators)

#### KPIs for high-level executives

- An increase in sales mix of Eco Products and utilization of renewable energy.

#### KPIs for board of directors and employees (including unit managers)

- Lessen the use of natural resources (e.g. paper, water, electricity) and increase sales mix of products made with renewable materials (e.g. artificial wood, synthetic fiber)

### Targets

1. To maintain the amount of electricity production from Solar Renewable Energy project at the minimum of 30,000,000 kWh/year.
2. Reduce 50% of greenhouse gas emissions per store, from the base year level, by 2030. (Scope 1 and Scope 2).
3. Use renewable energy 100% in store buildings owned by the Company by 2030.
4. To raise the sales mix of Eco Product to 50% of sales revenue by 2025.
5. The Company's goal is to achieve net zero greenhouse gas emissions by 2050.

## Scope of GHG emissions

The Company has pursued 'carbon footprint' projects since 2015 by keeping track of its total GHG emissions, absorption and storage for three scopes under the Greenhouse Gas Protocol. Scope 1 emissions are defined as direct company emissions. Scope 2 covers indirect emissions derived from energy sources. Scope 3 includes all other indirect emissions that occur in a company's value chain.

Scope 1: For example, the Company's delivery of customer services at branches such as the use of refrigerants R407A and R-134A. Fuel combustion resulted from staff travelling to and from project sites. Shipment of goods (diesel and NGV).

Scope 2: The Company's delivery of customer services at branches such as electricity use.

Scope 3: The Company's distribution of goods such as transporting goods from Distribution Center to branches. Water and LPG consumption in the staff cafeteria.

## Carbon-cutting projects and measures

### 1. Solar renewable energy project

The Company installed solar panels on the roofs of HomePro, Mega Home and Market Village branches to generate solar electricity replacing power from traditional transmission lines. In 2023, the rooftop solar panel installation was made at a total of 80 branches, reducing carbon emissions by up to 38,503 tCO<sub>2</sub>e/year

### 2. Power-saving technology

The Company installed the Building Control Monitoring System for Energy (BCMS) at many branches to better manage and control main systems within buildings such as electricity, air conditioning, and ventilation systems. The BCMS helped cut CO<sub>2</sub> emissions by up to 2,021 tCO<sub>2</sub>e/year in 2023.

### 3. Anti-plastic campaign

The Company launched the 'No Bag, Eco-Friendly Shopping' campaign to promote packaging reduction. In 2019, the Company announced that it stopped giving plastic bags and encouraged shoppers to use cloth bags. Customers wanting to receive a plastic bag had to donate 1 baht per piece to an educational foundation for the underprivileged. In 2023, the campaign helped reduce the use of plastic bags by 17.3 million pieces, equivalent to a carbon reduction of 501 tCO<sub>2</sub>e/year.

### 4. EV transportation project in logistics operations

The Company is transitioning its transportation operations from fossil fuels to electric vehicles (EV) to reduce greenhouse gas emissions from fuel combustion. In 2023, the Company began piloting three electric trucks to transport goods from distribution center (DC) to the Company's branches, and introduced 10 electric trucks for Home Service deliveries. These initiatives have successfully reduced greenhouse gas emissions by 162 tCO<sub>2</sub>e.

## 5. Other green measures

The Company adopted a variety of measures aimed at cutting electricity use at every branch of HomePro, Mega Home, Market Village and Distribution Center. The measures included 1) Reduce the size of office area (to accommodate smaller air conditioners) 2) Replace AHU/CDU air conditioners with small FCU/CDU air conditioners and install room divider 3) Replace fluorescence light bulbs with LED light bulbs and reduce the spacing between bulbs. 4) Adjust the air conditioning on/off schedule 5) Reduce the operation time of the parking lots lighting and the Company's buildings 6) Reduce the frequency (Hz) of cold pumps operation 7) Improve efficiency of fan motors, coolant pumps, aerators, and other machinery. These green measures slashed electricity use by 14.26 GWh/year in 2023, equivalent to a carbon decrease of 7,130 tCO<sub>2</sub>e/year.