

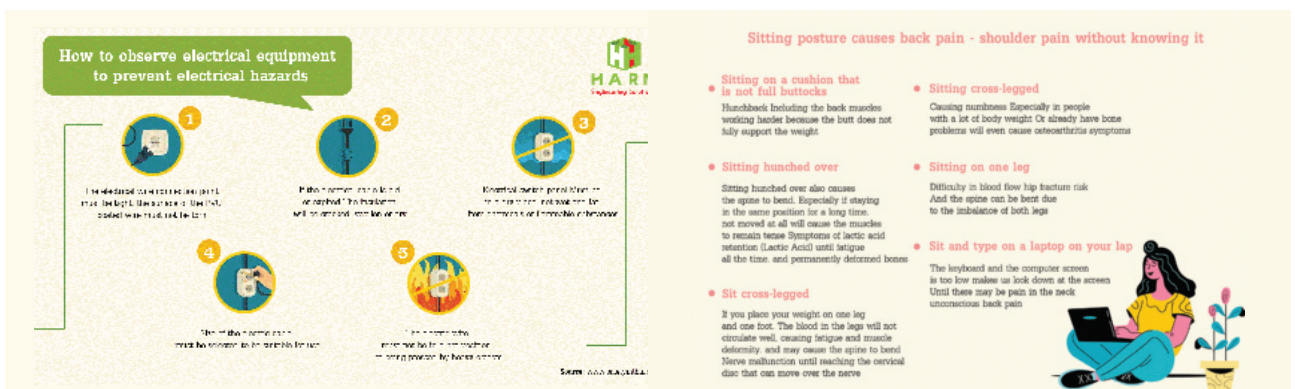
# Environmental Sustainability Management (SMART Environment)

## Environmental Policy and Practice

HARN emphasizes on protecting the environment along the demand chains, from the process of products selection which does not harm the natural resources and is environmental friendly, strictly following the laws and regulations instructed by governing bodies, reducing the wastes and leftovers from the operation, save energy in the work place by regulating the use of air conditions, lights and computers by considering the maximum usage in order to lower the costs and raise the awareness of sustainable energy saving for the good of the community and in response to the energy saving policy of the Government. HARN has developed an environmental management system by establishing a policy on the environment, occupational health and safety at work to be a framework for operation as well as building a systematic environmental database to control and reduce impacts and maintain a good environment along with sustainable business growth

## Environmental Performance

In 2022, had revised the training manual used on safety/work environment and environment. The training for 34 new employees. The test results after the training show 88% of success and campaign for all employees to know how to observe electrical equipment to realize protection against electrical hazards via communication channels in HARN such as email, Line Official and Digital signage.



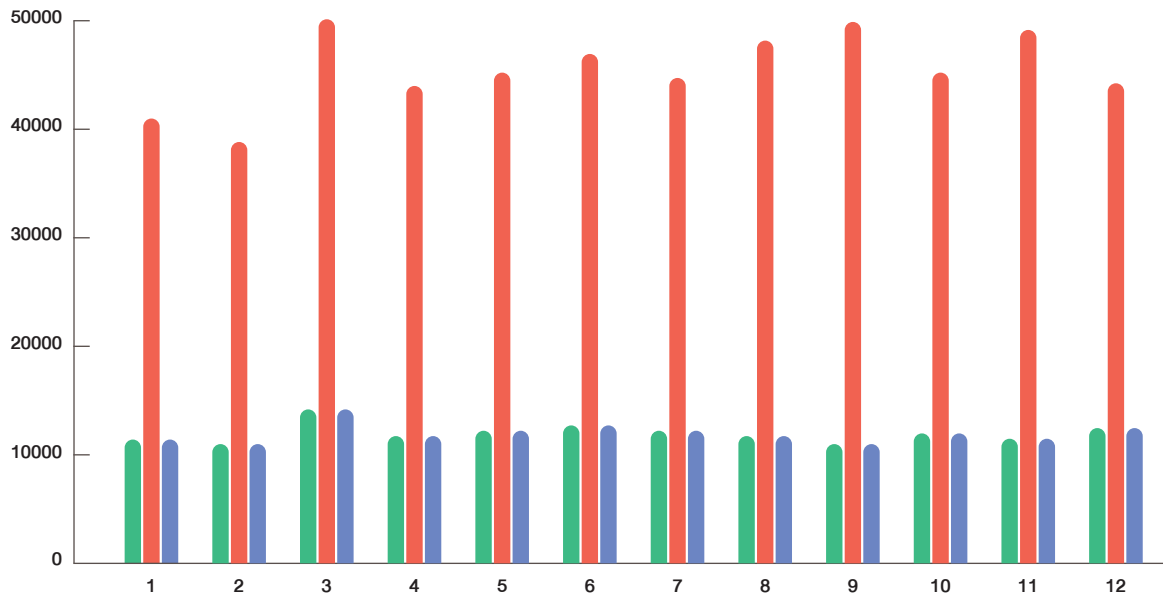
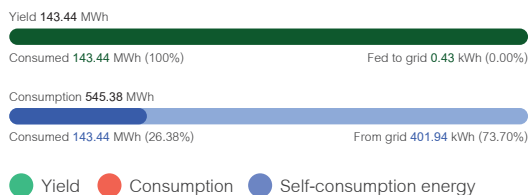
## Climate Change Action

### Energy Management

HARN adheres to the importance of efficient energy management. There is a system for data collection of energy consumption to analyze and plan on energy consumption control, while promoting indirect energy savings. The target to reduce energy consumption is 170 kWh per year or 30% of total energy use compared to the year 2021 with the installation of 330 solar panels (size of 0.127 megawatts) and the smart PoE Lighting system to control the lighting system from the lights inside the building by using internet lines instead of electric wires. The system automatically dims the light from the lamp when there is enough sunlight from outside. This can save electric energy and expenses, including the reduction of environmental impacts.

Also, HARN chose to learn and establish a building and energy management system by its internal team, together with Aiyaraham Co., Ltd. (Subsidiary) with Internet of Things (IoT) know-how, we aim for energy to be less than 120kWh per square meter per year, which is considered very low for a building in Thailand.

In 2022, HARN had electricity consumption in HARN's head office building of 401.943 kWh or 60.9 kWh/m<sup>2</sup>, which was 50% lower than the design target. It was a building with very low energy per square meter. After the installation of solar panels, it was found that the amount of electricity generated in 2022 was 143,438 kWh or 26.3% of the total electricity consumption per year. Therefore, compared in 2021 (January-December), decrease of 15.07% thus, HARN not achieve its goal and still need to plan for efficient energy management.



**The Amount of Solar Power Generation (Blue) and Total Electricity Consumed (Orange)**  
**The difference is the electricity that must be purchased from MEA.**

The data obtained from the Building Management System developed by HARN and Aiyaraharn Company Limited (“Subsidiary”), it found the proportion of energy consumption in the HARN office during the second half of 2022 is as follows:

System	Power Proportion (%)
Chiller	44.14
Cooling and Air-Conditioning	23.92
Information, communication and outlet	21.70
Light	7.95
Data Center	0.71
Elevator	1.58

It can be seen that chillers and AHU & A/C are the systems that consume energy accounting for 68.02% of the total energy consumption, so modification of the two systems is required to reduce energy consumption. HARN aims to optimize the maintenance these two systems for maximum efficiency.

For the lighting system, typical buildings consume 25% of the total energy consumption. It can be seen that HARN's office building has only 7.95% of the energy consumption because HARN uses a PoE lighting system that dims or turns off the lamps according to the intensity of the light and only when they are used.

What HARN has built in this office building will become a corporate culture of energy-saving consciousness, and no matter where employees are located, they will always have a sense of reducing energy loss.

## Water Resources Management




Water resources are very important for consumption. Currently, climate change has started to have an impact on the amount of water available, especially in various business groups. Thus, it is necessary to increase water management efficiency.

HARN's business operations use water resources for consumption from tap water. It sets a target of 5% reduction in water consumption for head office buildings when compared to the base year of 2021 in a bid to raise the level of water management according to the principles of circular economy by using water economically. The wastewater is used for watering plants to reduce costs on water and lower the amount of wastewater. In 2022, HARN maintained 9,440 cubic meters of water consumption or an increase of 10.27 % when compared in 2021 (January-December). Thus, HARN not achieve its goal and still need to plan for efficient water resource management.

## Waste and/or Pollution Reduction Management

HARN has managed its waste separation according to the type of waste as required by law. There is a management system for hazardous wastes and separation of waste in each type. This includes the establishment of an internal management system with proper collection and delivery for disposal by authorized individuals from the Department of Industrial Works, Ministry of Industry, which can be verified and traced back. The hazardous wastes, e.g. solvents and contaminated containers, are disposed of by legally authorized companies through landfills. Meanwhile, the non-hazardous and general wastes, such as plastic, paper, glass, and metal, are delivered to other service providers for proper separation and recycling.

The goal is to reduce the proportion of waste for disposal by 5% when compared to the base year of 2021, with measures and practices of 3R, i.e., Reduce, Reuse, and Recycle. In 2022, all activities were 100% complete, with the proportion of waste for disposal of 59.34 tones, or an decrease of 2.21 % When compared in 2021 (January-December). Thus, HARN could achieve its goal for efficient planning of a continual waste management project each year as follows:

		
Reduce	Reuse	Recycle
<ol style="list-style-type: none"> <li>1. Us email to send document eg. Gmail/Outlook</li> <li>2. Store data via Data Center</li> <li>3. Use e-meeti</li> <li>4. Change paper-based surveys to Google Form</li> <li>5. Reduce giving out handouts of seminars to soft copy via email</li> <li>6. Implement "One Quality Project" to reduce paper by adjusting the working method, develop using digital systems</li> </ol>	<p>Print on one side printed paper</p>	<p>Placement of separate bins eg. General waste, used paper, bottles &amp; plastics and sell reusable waste from paper, bottles &amp; plastics.</p>

## Greenhouse gas emission management from business operations

Currently, climate change is a very serious problem. Many countries worldwide have paid attention to reduce greenhouse gas emissions due to the environmental impacts. It is crucial to determine the direction for implementation in accordance with the framework of the United Nations Convention on Climate Change and the Paris Agreement. Thailand has committed to fully raising the level of problem solving with an announcement to become carbon neutral by 2050 and achieve net zero emission by 2065.

Therefore, HARN adheres to the direction of Thailand by setting its own goal of being carbon neutral by 2040 and emission Net Zero by 2050. It also assesses the risks and creates a plan to review the target value of greenhouse gas emission control, in line with the installation of a solar power generation system in the car park area, as well as the forestation and use of electric vehicles to reduce impacts on the environment and greenhouse gas emissions in the value chain with a tangible way, including the follow-up on the operating performance systematically.

In a bid to support the reduction of greenhouse gas emissions, HARN has established the Carbon Footprint Management Working Group in 2022 to review and set clear goals for a control of greenhouse gas emissions, in line with a project to install an additional 0.177 megawatts of solar panels in the parking building area to increase the capacity of power generation equal to the energy consumption rate at the head office. The project has been approved by the Board of Directors and will be installed in 2023. In the meantime, HARN also supports the Care the Wild Project to restore the forestation at Ban Aoy Community Forest, Village No. 11 and Ban Boon Rueng, Village No. 4, Ban Wiang Subdistrict, Rong Kwang District, Phrae Province, in an area of 1 rai (1,600 sqm), with the Association of Listed Companies on the Market for Alternative Investment (MAI) by setting a goal to reduce greenhouse gas emissions by 5% per year.

In 2022, HARN emitted direct and indirect greenhouse gas emissions equal to 1,060.41 tons of carbon dioxide equivalent ( $\text{tCO}_2\text{e}$ ). The greenhouse gas emissions of HARN has been calculated by using data of 2022 as the base year (November 2021 - October 2022), which is currently in progress, in accordance with the principles and formulas as reference from the Greenhouse Gas Management Organization (Public Organization), or TGO. However, it has not yet been verified by experts from the TGO. In 2022, HARN complied with the standards and specified laws, with no fines or environmental penalties paid. With clear goal, HARN received the Green Building Award, DGNB Standard Gold Certificate, organized by the German-Thai Chamber of Commerce and DGNB GmbH.