



Energy Management Programs

EA's has implemented Energy Management Programs according to The Energy Conservation Promotion Act B.E. 2535, Ministerial Regulation Prescribing Standard, Criteria, and Energy Management Procedures In Designated Factories and Buildings B.E. 2552 and operated it by aiming to achieve targets beyond Thailand's aspiration, such as Carbon Neutrality by 2040 and Net Zero Emissions by 2050. In 2024, EA has strengthened its system to reduce energy consumption through several programs as listed below:

Energy audits

Energy audits	Description
EA Energy Audit	<p>EA has continually conducted energy audit on a regular basis at least annually energy management. This includes in-depth analysis of our fuel consumption, unveiling various opportunities for improvement. By tracking and evaluating our energy usage, these audits have been instrumental in formulating initiatives that have lowered our dependency on LPG and coal.</p> <p>In 2024, EA has implemented energy audit to the following facilities;</p> <p>Energy absolute public company limited (Kabinburi branch)</p>
Outcomes	<p>-The energy audit allows EA to improve and save energy around 2,713.65 MWh per year</p>



Energy management project implementation in 2024

In 2024, EA group has implemented energy projects including:

Energy Projects	Description
<u>The project to reduce coal consumption</u>	The project to reduce coal consumption from cleaning the steel walls in contact with water using chemicals for a 16-ton boiler, which resulted in a reduction of coal usage by 131,220.21 kilograms per year, or 131.22 tons per year.
<u>The project to Replace Cooling Tower Fan Blades</u>	The project to Replace Cooling Tower Fan Blades by changing the material from aluminum to FRP (Fiberglass Reinforced Plastic) material of the cooling tower fan blades, electricity consumption has been reduced by 126,327.96 kWh.
<u>Solar Panel Installation Project on Rooftops Solar panels</u>	Solar Panel Installation Project on Rooftops Solar panels have been installed on the rooftops of office buildings, parking lots, and warehouse facilities within the company Nakhon Sawan, Phitsanulok, Chaiyaphum, Lampang and Nakorn Si Thammarat. This initiative aims to reduce external electricity consumption to 382,158.10 kWh.
<u>Floating Solar Panel Project Floating solar panels</u>	Floating Solar Panel Project Floating solar panels have been installed on the solar power plant Lopburi province water reservoir, contributing to the reduction of external electricity consumption to 34,256.80 kWh.
<u>Solar Panel Installation Project on Rooftops Solar panels (Amita)</u>	Solar Panel Installation Project on Rooftops Solar panels have been installed on the rooftops. A total of 2.849 MW of solar panels have been installed on the roof of the production building within the company. These are used in the production process and the energy storage system (ESS) of the factory, which can reduce the use of external electrical energy by a total of 1,570,676.30 kilowatt-hours (kWh).



Energy Projects	Description
<u>LiBr Absorption Cooling System Installation Project</u>	The LiBr absorption cooling system (Absorption chiller LiBr) with a capacity of 500 tons of cooling has been installed to utilize the excess steam generated from the boiler's steam production as energy to drive the absorption cooling system. This reduces the electricity consumption of the cooling system (Chiller), which supplies cooling to the air conditioning system in the main production building and the utility production building. As a result, electricity consumption has been reduced from 7,959,285.12 kilowatt-hours (kWh) to 7,359,050.58 kilowatt-hours (kWh), resulting in an overall energy savings of 600,234.54 kilowatt-hours (kWh) or 7.54%
<u>Phase Change Material</u>	EA has conducted research and development on the high value-added using the crude palm oil as a primary material. Such a method is a know-how of production developed from biodiesel production which is known as the Phase Change Materials (PCM). PCM are on demand currently in many countries that aiming to reduce energy consumption or use resources efficiency. By the way for taking crude palm oil also helping to support the palm agriculturists and create price stability of crude palm to get higher. By registered capital 400,100,000 baht.
<u>EA Waste Management Phuket</u>	EA has joined in submitting a joint proposal to carry out the municipal waste management of Phuket City Municipality, Phuket Province, for the purpose of producing and distributing electricity from organic waste, in order to take care of the environment and create energy security for the country. With a registered capital of 500,000,000 baht.



Awareness training

Awareness Training has proven to be a pivotal component of our holistic energy management approach. EA promotes training programs as well as shares best practices on the importance of energy conservation to our workforce. Our enhanced training programs in 2024 includes;

Training Programs	Description
<p><u>Energy Conservation Awareness Activities in the Organization</u></p>	<p>-Training objectives:</p> <ol style="list-style-type: none"> 1. To promote energy conservation awareness among employees within the organization. 2. To encourage and motivate employees to actively engage in energy-saving practices. <p>-Number of Participants: 10 people</p> <p>-Participant target group: Working Group / Department Representative</p> <p>-Quantitative results: The test results passed 100%</p>
<p><u>Promoting Energy Conservation Awareness and Energy-Saving Techniques (in accordance with Energy Conservation Laws for Designated Factories)</u></p>	<p>-Training objectives:</p> <ol style="list-style-type: none"> 1. To improve methods and techniques for efficient energy consumption. 2. To empower employees to implement energy-saving practices within the organization. <p>-Number of Participants: 1 people</p> <p>-Participant target group: Engineer (Energy Officer)</p> <p>-Quantitative results: The test results passed 100%</p>



Training Programs	Description
<u>Energy Conservation</u>	<p>-Training objectives:</p> <p>To raise awareness among personnel about the environmental impacts caused by resource consumption and pollutant emissions, as well as to promote awareness of energy conservation.</p> <p>-Number of Participants: 184 people</p> <p>-Participant target group: Operator - Officer</p> <p>-Quantitative results: The test results passed 100%</p>
<u>Internal Audit of the Energy Management System</u>	<p>-Training objectives:</p> <ol style="list-style-type: none">1. Understand the principles and requirements of the Energy Management System.2. Have knowledge of the roles and processes involved in internal audits.3. Be able to plan, conduct, and prepare reports for internal audits.4. Prepare for external certification audits. <p>-Number of Participants: 29 people</p> <p>-Participant target group: Officer</p> <p>-Quantitative results: The test results passed 100%</p>



Training Programs	Description
<u>The person responsible for senior energy (Electricity)</u>	<p>-Training objectives:</p> <p>To ensure understanding of roles and responsibilities under the Energy Conservation Promotion Act B.E. 2535 and to comply effectively.</p> <p>To gain knowledge about energy conservation regarding electricity in the factory and to be able to analyze the potential for energy savings.</p> <p>-Number of Participants: 2 people</p> <p>-Participant target group: Engineer</p> <p>-Quantitative results: The test results passed 100%</p>
<u>ISO 9001:2015 & ISO 14001:2015 Requirement and internal audit</u>	<p>-Training objectives: To ensure that employees have the knowledge and understanding of environmental management system requirements, and to apply this knowledge in organizational operations to reduce environmental problems and pollution, there is a systematic internal management in place that adheres to international standards.</p> <p>-Number of participants: 299 people</p> <p>-Participant target group: Employees at all levels</p> <p>-Quantitative results: The test results passed 100%</p>
<u>Introduction to ISO/IEC 17029 : 2019, ISO 14065 : 2020 and Internal Auditor</u>	<p>-Training objectives: To understand the requirements for environmental data verification and internal monitoring.</p> <p>-Number of participants: 25 people</p>



Training Programs	Description
	<ul style="list-style-type: none">-Participant target group: Responsible Person-Quantitative results: The test results passed 100%
<u>Basic knowledge of environmental and energy management systems, and the requirements of the ISO 14001:2015 environmental standard.</u>	<ul style="list-style-type: none">-Training objectives: To provide new employees with knowledge and understanding of the Environmental Management System (ISO 14001) and energy management.-Number of participants: 485 people-Participant target group: Employees at all levels-Quantitative results: The test results passed 100%
<u>Basic knowledge of energy usage in factories and energy conservation.</u>	<ul style="list-style-type: none">-Training objectives: To provide employees with basic knowledge and understanding of energy usage in the factory and energy conservation.-Number of Participants: 104 people-Participant target group: Employees at all levels-Quantitative results: The test results passed 100%