

Global climate change is getting worse due to an increase in greenhouse gases, which has a wide impact on people's lives and environment. Electricity Generating Authority of Thailand (EGAT) is a leading organization in power business that generates, acquires, and supplies electrical power with environmental management and social responsibility. Playing a part in emitting greenhouse gases and realizing their impacts, EGAT joins the global community to reduce greenhouse gas emissions. EGAT Greenhouse Gas Management started in 2006. The focus is on efficiency improvement in the power generation and transmission processes as well as the use of renewable energy for power generation, apart from CDM implementation as the starting point. Up until now, it has been a decade that EGAT has continually driven greenhouse gas management as follows:

1. Policy and Planning

According to Thailand's Nationally Appropriate Mitigation Action (NAMA), Greenhouse Gas Management was included in EGAT strategic plan to enhance the sustainable growth of the organization. EGAT's implement 5-year Greenhouse Gas Management Master Plan (2016-2020). As the country proposed in post-2020 greenhouse gas reduction and climate actions or Thailand's Nationally Determined Contributions (NDC), EGAT's GHG Management Roadmap (2018-2030) is being written in order to develop action plans in compliance with the greenhouse gas reduction target at 20-25% or 111-139 tCO₂e in 2030,

Moreover, EGAT has cooperated with Thailand Greenhouse Gas Management Organization (Public Organization) to develop a direction to assess the reduction of greenhouse gases under Thailand Power Development Plan (PDP 2015). After having assessed its potential, EGAT has targeted to reduce greenhouse gases 4 MtCO₂e in 2020 under NAMA by using EGAT's greenhouse gas reduction mitigation as follows:

- Renewable Energy Power Plants
- Clean Technology Power Plant
- Efficiency Improvement of Existing Power Plants
- Energy Conservation : NO 5 LABEL

2. Assessment of Greenhous Gas Emissions

EGAT has assessed and reported the amount of greenhouse gas emissions by following an assessment guideline that is acceptable and adheres to international standard namely the assessment guideline of Intergovernmental Panel on Climate Change (IPCC). the assessment results of greenhouse gas emissions in each year under IPCC assessment standard have also been collected to and report in EGAT’s annual Report.

Moreover, EGAT’s also certified greenhouse gas emissions based on ISO 14064-1 standard in 2016. Eleven units of EGAT, comprising North Bangkok Power Plant, South Bangkok Power Plant, Mae Moh Power Plant, Wang Noi Power Plant, Chana Power Plant, Krabi Power Plant, Nam Phong Power Plant, EGAT Headquarters, Mae Moh Mine, and Center of Workshop and Spare Parts at Nong Chok Office were assessed. This will lead to the development of greenhouse gas reduction plans of each unit and a path to low carbon society.

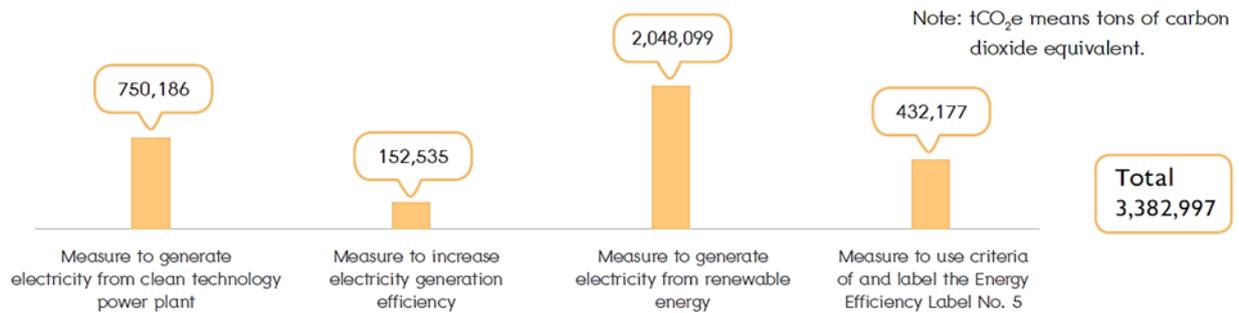
3. Reduction of Greenhouse Gases

3.1 Reduction of Greenhouse Gases under NAMA

EGAT has verified and reported the results of GHG reduction in accordance with NAMA to the Ministry of Energy. The assessment results of EGAT greenhouse gas reduction of the year 2013-2015 show that EGAT reduce greenhouse gases by 422,551 tCO₂e, 3,229,064 tCO₂e, and 3,382,997 tCO₂e respectively.

Measures	The Amount of Reduced Greenhouse Gases (tCO ₂ e)		
	2013	2014	2015
Efficiency Improvement of Existing Power Plants	422,551	288,223	152,535
Renewable Energy Power Plants	-	2,940,841	2,048,099
Clean Technology Power Plant	-	-	750,186
Energy Efficiency LABEL NO 5	-	-	432,177
Total	422,551	3,229,064	3,382,997

Results of Greenhouse Gas Reduction under EGAT Greenhouse Gas Reduction Measures in 2015



3.2 Reduction of Greenhouse Gases by Project Development

EGAT has implemented project to reduce GHG since 2006. And EGAT has developed and implemented these projects according to the greenhouse gas reduction mechanisms both international and national as follows:

1) Clean Development Mechanism or CDM from projects of power generation from renewable energy and efficiency improvement of power generation. Currently, there are 9 projects registered in the United Nations with verified carbon credits of 1,153,532 tCO₂e.

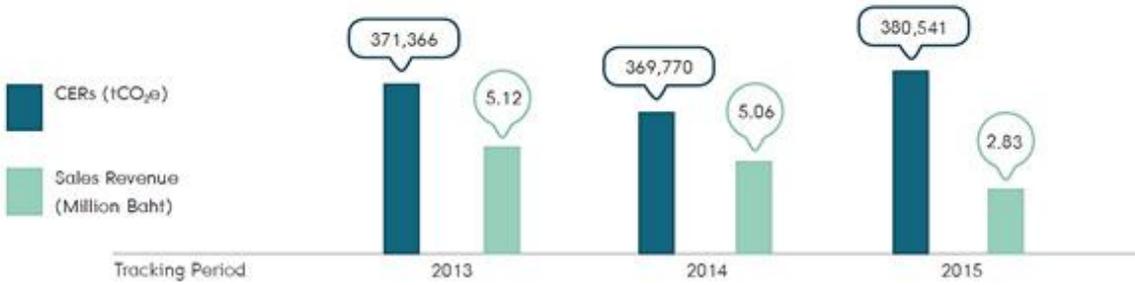
2) Thailand Voluntary Emission Reduction Program or T-VER from projects of power generation from renewable energy. Currently, there are 5 projects registered as a T-VER with verified carbon credits of 39,292 tCO₂e. Moreover, other 2 projects are being developed, which are the Kwai Noi Bamrung Dan Hydropower Plant Project and the Khun Dan Prakan Chon Hydropower Plant Project. The total reduced greenhouse gas is around 67,400 tCO₂e.

3) Low Emission Support Scheme or LESS is a project to support greenhouse gas reduction in small organizations such as communities, temples, and schools. In 2016, EGAT encouraged 135 schools to participate in LESS which helped reduce greenhouse gases around 1,893 tCO₂e.

The reduced greenhouse gases, also called “carbon credit”, certified from the CDM and T-VER projects can be sold to support greenhouse gas reduction through carbon market mechanisms. From 2013 to 2016 EGAT has sold carbon credits from the CDM project (Mae Moh Power Plant Units 10-11) which has created revenue for EGAT around 3-5 million baht per year.

Furthermore, EGAT has sold carbon credits of 4,865 tCO₂e from T-VER projects totaling 780,880 baht.

Sales of Carbon Credits Obtained from Clean Development Mechanism Program (CDM)



Note : ¹ Reference exchange rate from BOT as at 2 December 2016

3.3 Carbon Dioxide Absorption by EGAT's Reforestation Project

EGAT has been implementing reforestation project from 1994, to 2011. The total amount of absorbed carbon dioxide is around 8.4 MtCO₂e (0.5MtCO₂ per year), while the total amount of oxygen released into the atmosphere is 6.1 MtCO₂

4. Cooperation

EGAT prioritizes cooperation with government agencies such as the Office of Natural Resources and Environmental Policy and Planning (ONEP) and the Ministry of Energy, to determine policies, objectives, and plans for reducing the country's greenhouse gases. In 2016, EGAT organized an exhibition booth at the United Nations Framework Convention on Climate Change, the 22nd session of the Conference of the Parties (COP22) in Marrakech, Morocco. This demonstrates that EGAT is a leading organization of Thailand's greenhouse gases reduction. We strive to become an organization of innovating power solutions for a better life.



