

Emission Factor from Electricity Generation/Consumption for Greenhouse Gas Mitigation Projects and Activities

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By Carbon Credit Certification Office

Thailand Greenhouse Gas Management Organization (Public Organization)

Thailand Greenhouse Gas Management Organization (Public Organization) or TGO, as the main agency supporting the participation in greenhouse gas mitigation of all sectors the country, has developed mechanisms to regulate project-level implementation of mitigation activities under the name “Thailand Voluntary Emission Reduction Program: T-VER” and “Low Emission Support Scheme: LESS”.

Emission factor is an important parameter for the calculation of the amounts of greenhouse gas emissions from projects and activities that involve the generation and consumption of energy. TGO has thus determined the emission factors as follows shall be used to be in line with the objectives of T-VER and LESS.

1) Premium T-VER: The emission factor for electricity generation/consumption shall be considered in accordance with the guidelines for baseline determination shall be below business-as-usual (BAU) level. In this regard, the determination of the baseline shall be based on the information of power plants that use natural gas as the main fuel for generating electricity and supply it to the transmission system as shown in Table 1.

Table 1 The emission factor for electricity generation/consumption for Premium T-VER

Relevant Parameter	Unit	Emission Factor	
		B.E. 2563 (2020)	B.E. 2564 (2021)
Emission factor for electricity generation/consumption ($EF_{Elec,y}$)	tCO ₂ /MWh	0.4394	0.4401

2) Standard T-VER and LESS: The emission factor for electricity generation/consumption shall be determined with reference to emission coefficients of the transmission system for NAMA in the energy sector, as announced by the Ministry of Energy's Climate Change Coordination Working Group, and for Standard T-VER for electricity generation from fossil fuels. Details are shown in Table 2.

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Table 2 The emission factor for electricity generation/consumption for Standard T-VER and LESS

Relevant Parameter	Unit	Emission Factor			
		B.E. 2561 (2018)	B.E. 2562 (2019)	B.E. 2563 (2020)	B.E. 2564 (2021)
Supply side					
Emission factor for electricity generation from renewable energy (EF _{EG_RE,PJ,y})	tCO ₂ /MWh	0.5290	0.5221	0.5143	-
Emission factor for electricity generation from fossil fuel (EF _{EG_FF,PJ,y})	tCO ₂ /MWh	0.5290	0.5221	0.4394	0.4401
Demand side					
Emission factor for electricity consumption (EF _{EC,PJ,y})	tCO ₂ /MWh	0.4872	0.4770	0.4758	-

The emission factor from heat production is specified in the announcement re: “Emission Factor from the transmission system and from heat production for greenhouse gas mitigation projects and activities” as of 24 January B.E. 2565 (2022).