

Electricity Grid Emission Factor and Upstream Fugitive Methane Emission Factor, 2005 - 2019

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Electricity Grid Emission Factors															
Average Operating Margin (OM) (kg CO ₂ / kWh)	0.5255	0.5300	0.5046	0.4965	0.4973	0.5083	0.5085	0.4778	0.4388	0.4277	0.4224	0.4237	0.4210	0.4206	0.4085
Build Margin (BM) (kg CO ₂ / kWh)	0.4205	0.4225	0.4352	0.4264	0.4208	0.4319	0.4578	0.4164	0.4137	0.4086	0.3941	0.3977	0.4018	0.4031	0.4013
Upstream Fugitive Methane Emission Factor (kg CH ₄ / kWh)	0.00216	0.00218	0.00225	0.00221	0.00222	0.00222	0.00228	0.00218	0.00218	0.00220	0.00217	0.00216	0.00198	0.00213	0.00212

Source: Energy Market Authority (EMA)

Notes:

- a. The Grid Emission Factor (GEF) measures the average CO₂ emission emitted per MWh of electricity. It can be calculated using the Average Operating Margin (OM) or the Build Margin (BM) method. The OM measures the system-wide emissions factor while the BM measures the emissions factor of newer facilities. More details on the GEF could be found in the "Technical Notes" section of the Singapore Energy Statistics (SES) publication.
- b. 2017 and 2018 GEF have been revised to include fossil fuel-based carbon emissions from the incineration of non-plastics such as textile, rubber and leather.

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