

ค่าการปล่อยก๊าซเรือนกระจก (Emission Factor) รวบรวมมาจากข้อมูลหัตถยภูมิ สำหรับการประเมินคาร์บอนฟุตพริ้นท์ขององค์กร

ชื่อ		Units	EMISSION FACTORS				แหล่งอ้างอิงข้อมูล
			CO ₂	CH ₄	N ₂ O	Total	
			[kgCO ₂ /unit]	[kgCH ₄ /unit]	[kgN ₂ O/unit]	[kgCO ₂ eq/unit]	
Stationary Combustion							
1	Natural gas	scf	5.72E-02	1.02E-06	1.02E-07	0.0573	IPCC Vol.2 table 2.2, DEDE
2	Natural gas	MJ	5.61E-02	1.00E-06	1.00E-07	0.0562	IPCC Vol.2 table 2.2, DEDE
3	Lignite	kg	1.06E+00	1.05E-05	1.57E-05	1.0619	IPCC Vol.2 table 2.2, DEDE
4	Fuel oil A	litre	3.21E+00	1.24E-04	2.49E-05	3.2200	IPCC Vol.2 table 2.2, PTT
5	Fuel oil C	litre	3.24E+00	1.25E-04	2.51E-05	3.2457	IPCC Vol.2 table 2.2, PTT
6	Gas/Diesel oil	litre	2.70E+00	1.09E-04	2.19E-05	2.7078	IPCC Vol.2 table 2.2, DEDE
7	Anthracite	kg	3.09E+00	3.14E-05	4.71E-05	3.1000	IPCC Vol.2 table 2.2, DEDE
8	Sub-bituminous coal	kg	2.53E+00	2.64E-05	3.96E-05	2.5454	IPCC Vol.2 table 2.2, DEDE
9	Jet Kerosene	litre	2.47E+00	1.04E-04	2.07E-05	2.4775	IPCC Vol.2 table 2.2, DEDE
10	LPG	litre	1.68E+00	2.66E-05	2.66E-06	1.6812	IPCC Vol.2 table 2.2, DEDE
11	LPG	kg	3.11E+00	4.93E-05	4.93E-06	3.1134	IPCC Vol.2 table 2.2, DEDE LPG 1 litre = 0.54 kg
12	Motor gasoline	litre	2.18E+00	9.44E-05	1.89E-05	2.1894	IPCC Vol.2 table 2.2, DEDE
13	FUEL WOOD	kg		4.80E-04	6.40E-05	0.0304	IPCC Vol.2 table 2.2, DEDE
14	Bagasse	kg		2.26E-04	3.01E-05	0.0143	IPCC Vol.2 table 2.2, DEDE
15	Palm kernel shell	kg		5.56E-04	7.41E-05	0.0352	IPCC Vol.2 table 2.2, DEDE
16	Cob	kg		5.03E-04	6.71E-05	0.0319	IPCC Vol.2 table 2.2, DEDE
17	Biogas	m3		2.09E-05	2.09E-06	0.0011	IPCC Vol.2 table 2.2, DEDE
18	FUEL WOOD (CO2only)	kg	1.79E+00			1.7909	IPCC Vol.2 table 2.2, DEDE
19	Bagasse (CO2only)	kg	7.53E-01			0.7530	IPCC Vol.2 table 2.2, DEDE
20	Palm kernel shell (CO2only)	kg	1.85E+00			1.8530	IPCC Vol.2 table 2.2, DEDE
21	Cob (CO2only)	kg	1.68E+00			1.6780	IPCC Vol.2 table 2.2, DEDE
22	Biogas (CO2only)	m3	1.14E+00			1.1428	IPCC Vol.2 table 2.2, DEDE
Mobile Combustion (On road)							
23	Motor Gasoline - uncontrolled	litre	2.18E+00	1.04E-03	1.01E-04	2.2394	IPCC Vol.2 table 3.2.1, 3.2.2, DEDE
24	Motor Gasoline - oxydation catalyst	litre	2.18E+00	7.87E-04	2.52E-04	2.2719	IPCC Vol.2 table 3.2.1, 3.2.2, DEDE
25	Motor Gasoline - low mileage light duty vihicle vintage 1995 or later	litre	2.18E+00	1.20E-04	1.79E-04	2.2327	IPCC Vol.2 table 3.2.1, 3.2.2, DEDE
26	Gas/ Diesel Oil	litre	2.70E+00	1.42E-04	1.42E-04	2.7406	IPCC Vol.2 table 3.2.1, 3.2.2, DEDE

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			CO ₂	CH ₄	N ₂ O	Total	
			[kgCO ₂ /unit]	[kgCH ₄ /unit]	[kgN ₂ O/unit]	[kgCO ₂ eq/unit]	
27	Compressed Natural Gas	kg	2.13E+00	3.49E-03	1.14E-04	2.2609	IPCC Vol.2 table 3.2.1, 3.2.2, PTT
28	Liquified Petroleum Gas	litre	1.68E+00	1.65E-03	5.32E-06	1.7306	IPCC Vol.2 table 3.2.1, 3.2.2, DEDE
29	Liquified Petroleum Gas	kg	3.11E+00	3.06E-03	9.86E-06	3.2049	IPCC Vol.2 table 3.2.1, 3.2.2, DEDE LPG 1 litre = 0.54 kg
Mobile Combustion (Off road)							
	Diesel						
30	- Agriculture	litre	2.70E+00	1.51E-04	1.04E-03	2.9793	IPCC Vol.2 table 3.3.1, DEDE
31	- Forestry	litre	2.70E+00	1.51E-04	1.04E-03	2.9793	IPCC Vol.2 table 3.3.1, DEDE
32	- Industry	litre	2.70E+00	1.51E-04	1.04E-03	2.9793	IPCC Vol.2 table 3.3.1, DEDE
33	- Household	litre	2.70E+00	1.51E-04	1.04E-03	2.9793	IPCC Vol.2 table 3.3.1, DEDE
	Motor Gasoline - 4 stroke						
34	- Agriculture	litre	2.18E+00	2.52E-03	6.30E-05	2.2738	IPCC Vol.2 table 3.3.1, DEDE
35	- Forestry	litre	2.18E+00	0.00E+00	0.00E+00	2.1816	IPCC Vol.2 table 3.3.1, DEDE
36	- Industry	litre	2.18E+00	1.57E-03	6.30E-05	2.2455	IPCC Vol.2 table 3.3.1, DEDE
37	- Household	litre	2.18E+00	3.78E-03	6.30E-05	2.3116	IPCC Vol.2 table 3.3.1, DEDE
	Motor Gasoline - 2 stroke						
38	- Agriculture	litre	2.18E+00	4.41E-03	1.26E-05	2.3171	IPCC Vol.2 table 3.3.1, DEDE
39	- Forestry	litre	2.18E+00	5.35E-03	1.26E-05	2.3454	IPCC Vol.2 table 3.3.1, DEDE
40	- Industry	litre	2.18E+00	4.09E-03	1.26E-05	2.3077	IPCC Vol.2 table 3.3.1, DEDE
41	- Household	litre	2.18E+00	5.67E-03	1.26E-05	2.3549	IPCC Vol.2 table 3.3.1, DEDE
Electricity, grid mix (ไฟฟ้า)							
42	ไฟฟ้าแบบ grid mix ปี 2016-2018; LCIA method IPCC 2013 GWP 100a V1.03	kWh	0.4954	6.10E-05	1.04E-05	0.4999	Thai National LCI Database, TIISMTEC-NSTDA, AR5 (with TGO electricity 2016-2018)
Refrigerants (สารทำความเย็น)							
43	R-22 (HCFC-22)	kg	-	-	-	1,760.0000	IPCC 2013, AR5
44	R-32	kg	-	-	-	677.0000	IPCC 2013, AR5
45	R-125	kg	-	-	-	3,170.0000	IPCC 2013, AR5
46	R-134	kg	-	-	-	1,120.0000	IPCC 2013, AR5
47	R-134a	kg	-	-	-	1,300.0000	IPCC 2013, AR5
48	R-143	kg	-	-	-	328.0000	IPCC 2013, AR5
49	R-143a	kg	-	-	-	4,800.0000	IPCC 2013, AR5

ทั้งนี้ สำหรับ Emission Factor ใน Scope 3 สามารถค้นหาได้ที่ <http://thaicarbonlabel.tgo.or.th/index.php?lang=TH&mod=Y0hKdlpIVmpkSE5mWlxcxGMzTnBiMjQ9>