Eesti Keskkonnauuringute Keskus

Eesti elektri eriheitetegur, 2006 IPCC juhiste põhjal

Stanislav Štõkov

EKUK

2006 IPCC juhis

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Volume 2

Energy

Edited by Simon Eggleston, Leandro Buendia, Kyoko Miwa, Todd Ngara and Kiyoto Tanabe

2006 IPCC Guidelines for National Greenhouse Gas Inventories

Volume 2

Energy

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*1 : Corrected chapter(s) as of April 2007.
*2 : Corrected chapter(s) as of November 2008.
*4 : Corrected chapter(s) as of June 2010.
*6 : Corrected chapter(s) as of August 2011.
*10 : Corrected chapter(s) as of April 2018.
*11 : Corrected chapter(s) as of June 2019.

- https://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html

2006 IPCC juhis

- Tekkepõhine
- Metoodika valik
- Eriheited

EQUATION 2.1

GREENHOUSE GAS EMISSIONS FROM STATIONARY COMBUSTION

$$Emissions_{GHG,\,fuel} = Fuel\ \ Consumption_{fuel} \bullet Emission\ \ Factor_{GHG,\,fuel}$$

Where:

$Emissions_{GHG,\,fuel}$ = emissions of a given GHG by type of fuel (kg GHG)

$Fuel\ Consumption_{fuel}$ = amount of fuel combusted (TJ)

$Emission\ Factor_{GHG,fuel}$ = default emission factor of a given GHG by type of fuel (kg gas/TJ). For CO_2, it includes the carbon oxidation factor, assumed to be 1.

Eriheidetest veel

Table 3.9. Carbon emission factors, oxidation factors and net calorific values by fuels for 2019

Fuels	NCV average	Unit	CEF, tC/TJ	Oxidation factor	Source of emission factor
Liquid fuels					
LPG	45.5	GJ/t	17.73	1	CS (Estonia)
Gasoline (for non-road transport)	44	GJ/t	19.09	1	CS (Estonia)
Light fuel oil	42.5	GJ/t	20.26	1	CS (Estonia)
Shale oil (heavy fraction)	39.22	GJ/t	21.1	1	CS, MoE 2017
Shale oil (light fraction)	42.3	GJ/t	20.2	1	CS (Estonia), MoE 2017
Diesel oil	42.3	GJ/t	19.87	1	CS (Estonia)
Residual fuel oil (heavy fuel oil)	40.15	GJ/t	20.92	1	CS (Estonia)
Solid fuels					
Coal	22.00	GJ/t	25.74	1	CS (Estonia)
Coke oven coke	28.5	GJ/t	29.02	1	CS (Estonia)
Oil shale CFB (fludised bed combustion)	8.16	GJ/t	26.42 – 27.25	1	PS (Estonia)
Oil shale PC (pulverised combustion)	7.47	GJ/t	27.76 – 29.14	1	PS (Estonia)
Milled peat	9.7	GJ/t	28.9	1	D, IPCC 2006

- https://unfccc.int/ghg-inventories-annex-i-parties/2021

Kütuste tarbimine

KE0240: ENERGIABILANSS TJ | Aasta, Näitaja ning Kütuse/energia liik

	Muu bituumenkivisüsi, TJ	Koksiahju koks, TJ	Gaasitehasegaas (põlevkivigaas), TJ	Koksiahjugaas, TJ	Turvas, TJ	Turbatooted, TJ	Põlevkivi / õliliivad, TJ	Muud süsivesinikud (põlevkiviõli), TJ	Vedelgaas (propaan, butaan), TJ	Mootoribensiin (autobensiin), v.a biokütuse osa, TJ	Lennu (reakt v.a bi osa, T
2019											
Tarbitud elektri ja soojuse tootmiseks	0	0	2 922	9 712	847	0	44 622	0	0	0	
..tarbitud põhitegevusena tootvates elektrijaamades	0	0	1 749	8 156	11	0	41 236	..	0	0	
..tarbitud põhitegevusena elektrit ja soojust tootvates koostootmisjaamades	0	0	336	1 275	272	0	3 307	..	0	0	
..tarbitud oma tarbeks tootvates elektrijaamades	0	0	0	0	0	0	15	..	0	0	
..tarbitud oma tarbeks elektrit ja soojust tootvates koostootmisjaamades	0	0	697	0	0	0	64	..	0	0	
Energiasektori omatarve	0	0	0	711	118	0	0	0	0	0	
Kaod	0	0	0	0	0	0	0	..	0	0	

Statistikaameti andmebaas: https://andmed.stat.ee/et/stat

Taastuvad energiallikad

- Tuul, päike, hüdro
- Arvestada kui “kütusena”
- CO_2, CH_4 ja N_2O = 0

Arvutus

- $\sum Emissions_{CO_2,fuel} = Fuel\ Consumption_{fuel_1}(TJ) \times Emission\ Factor_{GHG,fuel_1}(tC/TJ) \times (44/12) + \ldots$
- $\sum Fuel\ Consumption_{fuel} = Fuel\ Consumption_{fuel_1} + Fuel\ Consumption_{fuel_2} + Fuel\ Consumption_{fuel_3} + \ldots$
- $Emission\ factor_{electricity,fuel} = \sum Emissions_{GHG,fuel} \div \sum Fuel\ Consumption_{fuel}$

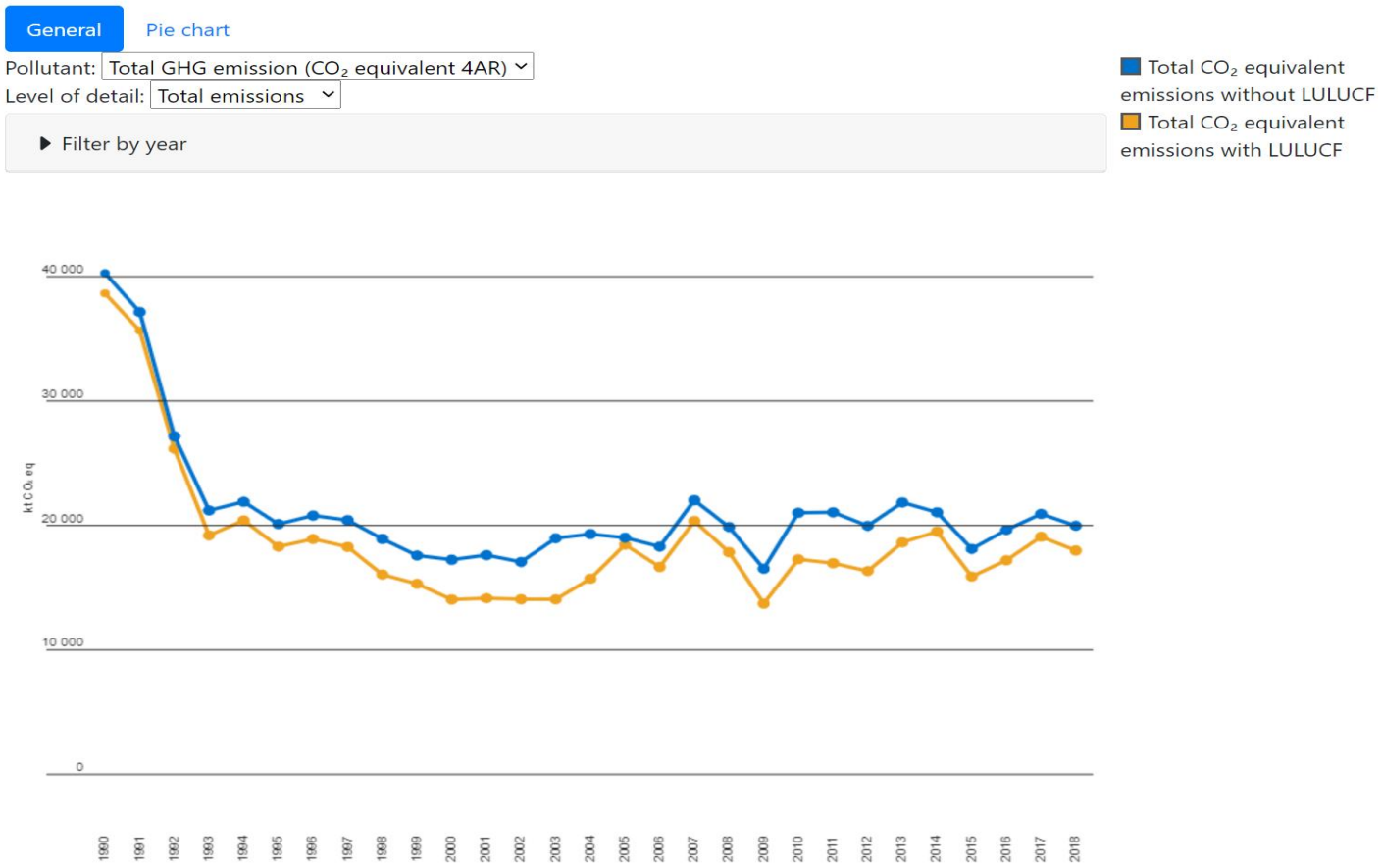
↑ Tarbitud kütuse pealt eriheide↑

- $Emission\ factor_{electricity,GWh} = \sum Emissions_{GHG,fuel} \div \sum Electricity\ Production_{bruto}$

↑ Toodangu (elektrienergia) eriheide↑

Mitte unustada CH_4 ja N_2O!

Eesti KHG inventuuri veebileht



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Tänan tähelepanu eest!

EKUK