

Reporting of used parameters and variables included in Annex 1, part 2, of the Energy Union Governance as

All parameters and variables highlighted in green are already currently requested under existing legislation (MMR, RES Directive, or Energy Efficiency Directive), see e.g.

All energy related parameters and variables highlighted in red might require to rely on complementary tools than standard energy system models

All variables highlighted in orange correspond to indicators to be computed on the basis of parameters and variables already available elsewhere in the excel file

	Unit	Statistics					Projections				Comments MS	Source statistics	Modelling output or exogenous assumption?	Comments Commission	
		2005	2010	2015	2020	2025	2030	2035	2040						
1. General parameters and variables															
1	Population	million	16,31	16,57	16,90	17,38	17,73	18,03				KEV2019/MONIT (PBL)	CBS	Assumption	
2	GDP	EUR million	550883	639187	690008	826759	961437	1119263				Projections based on KEV 2019 (PBL) , based on real prices	CBS	Assumption	
3	Sectorial gross value added	EUR million	547670	593181	620835	687685	741834	801068				KEV2019/MONIT (PBL), Including mineral extraction, water. Euro 2015 prices	CBS	Assumption	
	Agriculture	EUR million	10254	11224	11898	12093	12541	13006				KEV2019/MONIT (PBL), Agriculture, forestry and fishing. Euro 2015 prices	CBS	Assumption	
	Construction	EUR million	28407	27370	26394	33275	33279	33314				KEV2019/MONIT (PBL) Euro 2015 prices	CBS	Assumption	
	Services	EUR million	413459	456237	483452	535745	583905	637288				KEV2019/MONIT (PBL) Trade, transportation, commercial services, government.	CBS	Assumption	
	Energy Sector	EUR million	7351	7917	9321	9736	9866	10410				KEV2019/MONIT (PBL) including refinery. Euro 2015 prices	CBS	Assumption	
	Industry	EUR million	69113	69612	73029	85125	90555	95188				KEV2019/MONIT (PBL), excl Refinery sector. Euro 2015 prices	CBS	Assumption	
4	Number of households	million	7,1	7,4	7,7	8,0	8,3	8,5				KEV2019/MONIT (PBL)	CBS	Assumption	
5	Households size	inhabitants/household	2,3	2,2	2,2	2,1	2,1	2,1				KEV2019/MONIT (PBL)	CBS	Assumption	
6	Disposable income of households (yearly)	EUR													Please specify the definition applied
7	Number of passenger-kilometers	million pkm	184451	185902	188345	201363	206190	214882				KEV2019/MONIT (PBL), Includes bicycles, pedestrians, and other	CBS	modelling output	
	Public road transport	million pkm	7300	6700	5400	5593	5748	5903				KEV2019/MONIT (PBL)	CBS	modelling output	
	Private cars	million pkm	137000	136500	137500	148031	150871	157578				KEV2019/MONIT (PBL)	CBS	modelling output	
	Motorcycles	million pkm													
	Rail	million pkm	15200	17100	18500	20486	21907	23329				KEV2019/MONIT (PBL)	CBS	modelling output	
	Aviation	million pkm													
	Inland navigation	million pkm													
8	Freight transport tonnes-kilometres	million tkm	109756	108860	114006	119389	124168	132649				KEV2019/MONIT (PBL)	CBS	modelling output	
	Trucks	million tkm	60776	58343	58926	62755	65059	68966				KEV2019/MONIT (PBL)	CBS	modelling output	
	Rail	million tkm	5914	5925	6545	6807	7472	8525				KEV2019/MONIT (PBL)	CBS	modelling output	
	Inland navigation	million tkm	43066	46592	48535	49827	51637	55158				KEV2019/MONIT (PBL)	CBS	modelling output	
9	International Fuel prices	EUR/GJ or EUR/toe													Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Oil	EUR 2018/barrel	56,00	68,00	50,00	53,00	81,00	88,00				Projections source: KEV 2019 (PBL) / Brent Crude futures (2020) / IEA WEO (2025,2030)	CBS	assumption	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Gas (NCV)	EUR 2018/m3		0,21	0,22	0,19	0,23	0,25				For 2005 no statistics available. Projections source: KEV 2019 (PBL) / TTF futures (2020) / IEA WEO (2025,2030)	CBS	assumption	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Coal	EUR 2018/ton	68,00	78,00	62,00	66,00	72,00	75,00				KEV 2019 (PBL) / Rotterdam coal futures (ARA) (2020) / IEA WEO (2025,2030)	CBS	assumption	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
10	Carbon price ETS sectors	EUR 2018/ton CO2		16,00	8,00	22,00	33,00	47,00				KEV 2019 (PBL) / CO2 futures (2020) / PBL (2025,2030)	CBS	assumption	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
11	Exchange rate to EUR and to US dollar	USD/Euro	1,24	1,33	1,11	1,20	1,18	1,18				KEV2019 (PBL)	CBS	assumption	
12	Heating degree days				2686	2710	2661	2612				2014 2030 scenario KNMI (Royal Netherlands Meteorological Institute)	KNMI	Assumption	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
13	Cooling degree days				95	119	126	133				2015 2030 scenario KNMI (Royal Netherlands Meteorological Institute)	KNMI	Assumption	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
14	Technology cost assumptions (see specific excel file circulated with technology cost assumptions as used in EU Reference Scenario 2016 for suggestions on what could be relevant to report														Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
2. energy balances and indicators															
2.1 energy supply															
1	Production (incl. recovery of products)	ktoe	62459	71124	47935	35414	27212	24901				Primary production all products	Eurostat	modelling output	
	Solids	ktoe	0	0	0	0	0	0				Primary production solid fossil fuels	Eurostat	modelling output	
	Oil	ktoe	2546	1636	2038	1024	1624	1367				Primary production oil and petroleum products	Eurostat	modelling output	
	Natural gas	ktoe	56177	64718	39447	25173	13380	9449				Primary production natural gas	Eurostat	modelling output	
	Nuclear	ktoe	1031	917	937	1049	1049	1017				Primary production nuclear	Eurostat	modelling output	
	Renewable energy sources	ktoe	1987	3129	4866	7377	10347	12254				Primary production renewables and biofuels	Eurostat	modelling output	
	Other	ktoe	718	725	647	791	811	814				Primary production non - renewable waste	Eurostat	modelling output	
2	Net Imports (ktoe)	ktoe	37527	28282	42671	51729	58424	57421				Import - Export all products	Eurostat	modelling output	
	Solids	ktoe	8197	7645	10535	6755	6633	3091				Import - Export solid fossil fuel	Eurostat	modelling output	
	Oil	ktoe	48403	44483	42847	42270	41722	41632				Import - Export oil and petroleum products	Eurostat	modelling output	
	Natural gas	ktoe	-20940	-24209	-10494	1064	11001	13451				Import - Export natural gas	Eurostat	modelling output	
	Electricity	ktoe	1573	239	752	1349	-1238	-1052				Import - Export electricity	Eurostat	modelling output	
	Other	ktoe	295	125	-969	292	306	299				Import - Export renewables and non renewable waste	Eurostat	modelling output	
3	Import Dependency	%	38%	28%	49%	60%	69%	70%				Net energy imports divided by gross inland energy consumption plus fuel supplied to international maritime		calculation	
4	Main import sources for energy carriers														
	Main country (please specify here) of origin of Electricity Purchases	% of total imports													
	1st main country (please specify here) of origin of Gas Purchases	% of total imports													
	2nd main country (please specify here) of origin of Gas Purchases	% of total imports													
	3rd main country (please specify here) of origin of Gas Purchases	% of total imports													If more countries to be reported please add rows
5	Gross Inland Consumption	ktoe	83696	86090	76015	75785	73935	70655				gross inland consumption all products (Europe 2020-2030 definition)	Eurostat	modelling output	
	Solids	ktoe	8094	7541	10915	6755	6633	3091				gross inland consumption - solid fossil fuels	Eurostat	modelling output	
	Oil	ktoe	34690	33351	30360	32343	32106	31951				gross inland consumption - oil and petroleum products	Eurostat	modelling output	
	Natural gas	ktoe	35325	40066	28629	26154	24275	22770				gross inland consumption - natural gas	Eurostat	modelling output	
	Nuclear	ktoe	1031	917	937	1049	1049	1017				gross inland consumption - nuclear heat	Eurostat	modelling output	
	Electricity	ktoe	1573	239	752	1349	-1238	-1052				gross inland consumption - electricity	Eurostat	modelling output	
	Renewable energy forms	ktoe	2265	3250	3625	7345	10299	12065				gross inland consumption - renewables, including biowaste and biofuels	Eurostat	modelling output	
	Other	ktoe	718	725	797	791	811	814				gross inland consumption - non-renewable waste	Eurostat	modelling output	
2.2. Electricity and heat															
1	Gross electricity generation	GWhe	99661	119115	110230	105225	136382	138265					Eurostat	modelling output	
2	By fuel														
	Nuclear energy	GWhe	3997	3969	4077	4196	4193	4065					Eurostat	modelling output	
	Solids	GWhe	23500	22588	39375	20583	19726	0					Eurostat	modelling output	
	Oil (including refinery gas)	GWhe	2262	1253	1330	1563	1517	1513				oil and petroleum products	Eurostat	modelling output	
	Gas (including derived gases)	GWhe	61027	78545	50129	38878	36486	36861				manufactured gases and natural gas	Eurostat	modelling output	
	Biomass-waste	GWhe	1266	1763	1997	2062	2025	1829				renewable municipal waste	Eurostat	modelling output	
	Hydro (pumping excluded)	GWhe	88	105	93	111	112	112					Eurostat	modelling output	
	Wind	GWhe	2067	3993	7550	19301	47238	66793					Eurostat	modelling output	
	Solar	GWhe	35	56	1109	8440	18194	24642					Eurostat	modelling output	

	non-dairy cattle	1000 heads	1209	1250	1169	1241	1241	1241				CBS	assumption	
	pigs	1000 heads	6749	7131	7005	6756	6412	6412		Excl. piglets		CBS	assumption	
	sheep	1000 heads	952	923	934	845	845	845		Other livestock		CBS	assumption	
	poultry	1000 heads	95190	103371	108558	100990	100990	100990				CBS	assumption	
b	Nitrogen input from application of synthetic fertilizers	kt nitrogen	280	222	268	259	254	250				CBS	assumption	
c	Nitrogen input from application of manure	kt nitrogen	292	297	311	320	324	324		Manure from stable and stock		CBS	assumption	
d	Nitrogen fixed by N-fixing crops	kt nitrogen												
e	Nitrogen in crop residues returned to soils	kt nitrogen			45,9	47,6	46,9	46,1				CBS	assumption	
f	Area of cultivated organic soils	hectares			338467	333562	327662	321762				CBS	assumption	
g	Municipal solid waste (MSW) generation	t			9499256	8000000	7500000	7000000				CBS	assumption	
h	Municipal solid waste (MSW) going to landfills	t			86420	70000	65000	60000				CBS	assumption	
i	Share of CH4 recovery in total CH4 generation from landfills	%			13,4	13,0	13,0	12,0				CBS	assumption	