

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

All parameters and variables highlighted in green are already currently requested under existing legislation (MMR, RES Directive, or Energy Efficiency Directive), see e.g.
http://cdr.cinet.europa.eu/help/mmr/MMR_projections_templates_2018.zip

All energy related parameters and variables highlighted in red might

All variables highlighted in orange correspond to indicators to be computed on the basis of

	Unit	2005*	2010*	2015*	2020	2025	2030	2035	2040	2045	2050	Comments MS
1. General parameters and variables												
1 Population	million	5,4	5,5	5,7	5,8	5,9	6,0	6,1	6,2	6,3	6,3	
2 GDP	EUR million (2016)	240475	257200	258857	295300	329900	340900	367300	376900	399600	426200	
3 Gross value added	EUR million (2016)	296492	223500	223264	254800	283300	296400	310600	328900	346800	368800	
Agriculture	EUR million (2016)	2775	3300	2856	3500	2800	3100	3500	3800	4100	4400	
Construction	EUR million (2016)	10553	10104	11561	13100	16600	17100	17800	18500	19800	21000	
Services	EUR million (2016)	132007	150403	149758	167350	186100	194700	204700	216900	230300	248000	
Energy Sector	EUR million (2016)	10400	10400	10400	10400	10400	10400	10400	10400	10400	10400	
Transport	EUR million (2016)	27145	30100	30504	42200	47500	50700	54500	57700	63000	69300	
4 Number of households	million	N/A										
5 Households size	Inhabitants/household	N/A										
6 Disposable income of households (yearly)	EUR	89695	116900	122034	153800	190100	223500	261800	308700	364100	431600	Current prices
7 Number of passenger-kilometers	million pkm	75879	77425	81277	N/A	For modeling, vehicle-km is used. Pkm and tkm only in historic years.						
Public road transport	million pkm	7169	6837	6802	N/A							
Private cars	million pkm	500	607	63000	N/A							
Motorcycles	million pkm	30,10	26,20	30,00	N/A							
Rail	million pkm	6136	6577	6808	N/A							
Aviation	million pkm	316	470	377	N/A							
Inland navigation	million pkm	236	194	272	N/A							
8 Freight transport tonnes-kilometres		11601	12689	14443	N/A							
Rail	million ton	11000	10573	12307	N/A							
Rail	million tkm	452	457	503	N/A							
Inland navigation	million ton	1949	1938	N/A								
9 International Fuel prices	EUR/GJ or EUR/tce											
Oil	EUR/GJ or EUR/tce	9	11	8	4	14	9	10	10	11	11	2016-EUR/GJ
Gas (NCV)	EUR/GJ or EUR/tce	6	6	7	6	13	11	11	12	12	12	2016-EUR/GJ
Coal	EUR/GJ or EUR/tce	2	3	2	2	5	3	3	5	5	5	2016-EUR/tce
10 Carbon price EU sectors	EUR /t CO2	22	24	21	27	94	114	142	181	238	311	2016-EURton
11 Exchange rate to EUR	EUR/DKK	7	7	7	7	7	7	7	7	7	7	
12 Heating degree days		3098	3742	2921	N/A							
13 Cooling degree days		N/A										
Important note: Assumptions base specific except the circled with technology cost assumptions as used in EU Reference Scenario 2016 for suggestions on what could be relevant to report												
2. energy balances and indicators												
2.1 energy supply												
1 Production (incl. recovery of products)	ktoe	31336	23375	16218	9500	14412	18827	17388	15996			
Solids	ktoe	0	0	0	0	0	0	0	0	0	0	
Oil	ktoe	19305	12486	7989	3615	4533	5387	3909	2709			
Natural gas	ktoe	9480	7340	4100	1170	3196	2911	1879	1242			
Nuclear	ktoe	0	0	0	0	0	0	0	0	0	0	
Renewable energy sources	ktoe	2522	3136	3851	4312	6485	10189	11474	11900			Including Ambient heat for heat pumps
Waste (Non-renewable fraction)	ktoe	406	410	374	362	238	130	126	113			
2 Net imports (ktoe)	ktoe	-10119	-3671	3528	7419	7987	6124	5155	4076			
Solids	ktoe	3712	2430	2990	547	246	51	38	38			
Oil	ktoe	-3934	-3842	454	3527	2331	572	1249	1507			
Natural gas	ktoe	-4024	-3503	1141	294	2543	2547	1424	838			
Electricity	ktoe	115	98	508	692	380	1161	1211	820			
District heating	ktoe	4	4	4	3	3	3	3	3			
Renewable energy sources	ktoe	389	875	1357	1895	2791	1638	1059	755			
Waste (Non-renewable fraction)	ktoe	0	0	52	65	173	153	45	16			
3 Imports dependency	%	-32%	-16%	22%	78%	95%	33%	30%	25%			Energy dependence = (imports - exports) / gross
4 Main imports source for energy carriers	%											
1st main country (Sweden) of origin of Electricity Purchases	% of total imports	N/A	N/A	N/A	47%	48%	28%	29%	29%			
2nd main country (Norway) of origin of Electricity Purchases	% of total imports	N/A	N/A	N/A	29%	34%	30%	32%	27%			
Main country (please specify here) of origin of Biomass Purchases	% of total imports	N/A										
1st main country (please specify here) of origin of Gas Purchases	% of total imports	N/A										
2nd main country (please specify here) of origin of Gas Purchases	% of total imports	N/A										
3rd main country (please specify here) of origin of Gas Purchases	% of total imports	N/A										
5 Gross Island Consumption	ktoe	20918	19197	17891	34694	29813	28907	27898	27233			Includes international aviation
Solids	ktoe	3953	3519	2646	912	246	51	38	38			
Oil	ktoe	8116	7180	26268	14891	(213)	11843	11847				
Natural gas	ktoe	4023	4217	3174	3640	3295	2913	1629	1247			
Nuclear	ktoe	N/A										
Solid biomass	ktoe	1628	2358	2811	2993	3884	2460	2097	1795			
Other biomass (incl. biogas and biofuels)	ktoe	636	676	902	2031	3338	4505	4409	4517			
Other renewable energy forms (incl. wind and solar energy)	ktoe	676	829	1505	1585	2777	5807	7017	7270			
Other (Non-renewable fraction)	ktoe	4	5	4	2	1	1	1	1			
Other	ktoe	0	0	0	0	14	210	285	453	453	453	Includes hydrogen consumption
2.2. Electricity and heat												
1 Gross electricity generation	GWhe	33828	36843	27279	N/A	42965	72246	84718	87244			
2 By fuel												
Nuclear energy	GWhe	N/A										
Solids	GWhe	N/A	N/A	N/A	N/A	663	5	5	0	0	0	
Oil	GWhe	N/A	N/A	N/A	N/A	79	54	51	49			
Oil (including refinery gas)	GWhe	N/A	N/A	N/A	N/A	162	462	462	462			
Gas (including derived gases)	GWhe	N/A	N/A	N/A	N/A	110	N/A	N/A	N/A			
Biomass	GWhe	N/A	N/A	N/A	N/A	1,000	N/A	N/A	N/A			
Hydro (pumping excluded)	GWhe	N/A	N/A	N/A	N/A	16	16	16	16			
Wind	GWhe	N/A	N/A	N/A	N/A	24314	50511	50532	47869			
Solar	GWhe	N/A	N/A	N/A	N/A	7160	16300	25894	35923			
Geothermal and other renewables	GWhe	N/A	N/A	N/A	N/A	852	571	278	176			
Other fuels (hydrogen, methane)	GWhe	N/A	N/A	N/A	N/A	1,000	N/A	N/A	N/A			
3 Share of power generation from combined heat and power generation in total electricity generation, including the generation in pumped storage power stations	%	81,6%	79,6%	49,0%	41,3%	26,4%	7,5%	4,4%	3,9%			
4 Share of heat generation from combined heat and power generation in total heat generation (CHP heat generation divided by the total heat for district heating)	%	82,5%	77,2%	66,7%	75,8%	63,4%	39,2%	31,6%	33,0%			
4 Capacity electricity generation including retirements and new investments [note: split between retirements and new investments may not be straightforward to obtain with standard models. Complementary assumptions may need to be made]	GW											
Nuclear energy	GW	N/A	N/A	12,8	14,5	18,3	30,9	36,4	42,2			
Gas	GW	N/A	N/A	0,00	N/A	N/A	N/A	N/A	N/A			
Cooling	GW	N/A	N/A	3,00	N/A	N/A	N/A	N/A	N/A			
Oil	GW	N/A	N/A	1,10	N/A	N/A	N/A	N/A	N/A			
Gas (including derived gases)	GW	N/A	N/A	2,00	N/A	N/A	N/A	N/A	N/A			
Biomass-waste	GW	N/A	N/A	1,00	N/A	N/A	N/A	N/A	N/A			
Hydro (pumping excluded)	GW	N/A	N/A	0,00	0,0	0,0	0,0	0,0	0,0			
Wind	GW	N/A	N/A	4,00	5,2	7,2	14,0	16,0	17,0			
Solar	GW	N/A	N/A	0,00	1,1	5,4	11,7	18,3	25,4			
Geothermal and other renewables	GW	N/A	N/A	0,00	N/A	N/A	N/A	N/A	N/A			
Other fuels (hydrogen, methane)	GW	N/A	N/A	0,00	N/A	N/A	N/A	N/A	N/A			
5 Heat generation from thermal power generation	GWhe	29405	32234	23740	N/A	928	19724	14016	12588			
6 Heat generation from combined heat and power plants, including industrial waste heat	GWhe	30237	29233	24618	N/A	26037	16413	13314	12012			
Cross-border interconnection capacities for electricity (the level of electricity interconnection in line with Article 4(1) of the relevant annex of the Energy Union Governance regulation) and their projected usage rates (note that each instance might not be available in standard energy system models; complementary tools or assumptions might be needed)												
7 Transformation sector												
1 Fuel inputs to Thermal Power Generation	ktoe	6936	7461	4039	N/A	4363	2472	1932	1627			
Solids	ktoe	3441	3705	1708	N/A	510	246	126	113			
Gas	ktoe	307	170	32	N/A	25	9	9	6			
Gasoline	ktoe	1726	1660	356	N/A	252	94	95	96			
Biomass	ktoe	577	1021	1052	N/A	2942	1629	1247	998			
Oil	ktoe	854	854	854	N/A	451	451	451	451			
Gasoline	ktoe	102	137	118								

* Data er fra tidligere indleverne NIECP (2019), som kan have ændret sig i småle. Dette kan blive korrigeret i den endelige version af opdateringen af den Nationale Energi- og Klimaplan, der indleveres i 2024.