

Guidance for the template on reporting of used parameters and variables included in Annex 1, part 2, of the Energy Union Governance

The aim of this excel file is to facilitate reporting of the quantitative parameters and variables under Annex I Part 2 in the indicated format

- 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.eionet.europa.eu/help/mmr/MMR_projections_templates_2018.zip
- All energy related parameters and variables highlighted in red might require to rely on complementary tools than standard energy system models covering also new requirements in the revised legislation
- 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
- The request for historical data relates to data if and when used in modelling
- All monetary Euro values shall be expressed in constant 2023 prices using ESTAT HICP deflator.
- Elements in red font are meant to provide further precision to what is currently indicated in the template in the provisionally agreed Governance Regulation. They aim to provide additional guidance or specifications and should facilitate the better understanding of modelling results by the Commission. While they remain optional, their use is much encouraged.
- Please report the used values for the years 2005 to 2040 in five yearly steps, and if possible yearly for 2021 to 2030 (the latter indicated in the red font as not required in the template in the Governance regulation).
- Column T can be used for comments that MS wish to provide (e.g. explanation of different methodology, caveats or sources of projections)

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

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

All energy related parameters and variables highlighted in red might require to rely on complementary tools than standard energy system models, covering new requirements from the revised legislation

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

		Historic								Modelled									
Unit		2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	Comments MS	Comments Commission
1. General parameters and variables																			
1	Population	million					4,924	4,962	5,002	5,042	5,083	5,124	5,165	5,207	5,249	5,465	5,690		
2	GDP	EUR million						320.082	320.738	330.516	340.530	350.795	361.337	372.152	383.282	524.523	719.360		
3	Sectorial gross value added	EUR million																	
	Agriculture	EUR million						7,304	7,477	7,733	7,995	8,262	8,535	8,814	9,101	12,554	17,330		
	Construction	EUR million						8,500	8,438	8,673	8,916	9,169	9,431	9,703	9,986	13,822	19,285		
	Services	EUR million						200.781	199.507	205.568	211.773	218.138	224.679	231.392	238.301	325.730	446.495		
	Energy Sector	EUR million						4,858	4,973	5,135	5,302	5,474	5,647	5,826	6,010	8,228	11,300		
	Industry	EUR million						68.071	69.265	71.477	73.748	76.081	78.479	80.944	83.481	114.650	158.382		
4	Number of households	million					1,833	1,859	1,884	1,910	1,943	1,975	2,009	2,045	2,081	2,224	2,365		
5	Households size	inhabitants/household					2,7	2,7	2,7	2,6	2,6	2,6	2,6	2,5	2,5	2,5	2,4		
6	Disposable income of households (yearly)	EUR																	Please specify the definition applied
7	Number of passenger-kilometers	million pkm																	
	Public road transport	million pkm																	
	Private cars	million pkm						46.053	46.794	47.535	48.277	49.018	49.759	50.500	51.242	51.242	51.242		
	Motorcycles	million pkm																	
	Rail	million pkm																	
	Aviation	million pkm																	
	Inland navigation	million pkm																	
8	Freight transport tonnes-kilometres	million tkm																	
	Trucks	million tkm						12.794	13.205	13.615	14.026	14.436	14.847	15.257	15.668	16.467	17.307		
	Rail	million tkm																	
	Inland navigation	million tkm																	
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/GJ or EUR/toe					11,28	15,84	12,30	13,10	13,89	14,69	15,49	16,28	17,08	17,88	18,91	22,91	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Gas (NCV)	EUR/GJ or EUR/toe					13,96	34,63	10,81	11,15	11,48	11,82	12,15	12,48	12,82	13,15	13,15	13,73	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Coal	EUR/GJ or EUR/toe					3,74	7,44	4,05	3,67	3,56	3,57	3,58	3,59	3,60	3,61	3,86	4,25	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
10	Carbon price ETS sectors	EUR/ ton CO2					66,35	95,45	95,45	95,45	95,45	95,45	95,45	95,45	95,45	101,42	190,90		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	EUR/currency and/or USD/currency																	
12	Heating degree days																		Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
13	Cooling degree days																		Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
14	Technology cost assumptions (see https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2040-climate-target_en for technology cost assumptions as used in 2040 Climate Target Plan 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	1702	1855	1963	3564	3043	3153											
	Solids	ktoe	845	1020	838	196	274	276	128	128	127	125	121	117	112	106	64	35	All coal is imported, so solids production is equal to peat and non-renewable waste
	Oil	ktoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Natural gas	ktoe	488	237	113	1654	1258	1165	1.073	981	889	797	706	614	522	430	0	0	
	Nuclear	ktoe	0	0	0	0			0	0	0	0	0	0	0	0	0	0	
	Renewable energy sources	ktoe	370	597	1013	1635	1514	1712	1.850	2.245	2.432	2.667	2.886	3.112	3.378	3.862	5.365	6.373	
	Biogases	ktoe	34	58	55	50	52	53	50	46	46	46	46	46	46	46	46	46	please, indicate what is the projection to produce biogas (primary production), regardless on its end-use
	- out of which, injected in the natural gas grid	bcm							0	0	0	0	0	0	0	0	0	0	indicate quantity of biomethane injected in grid as in Energy Balances [TI_BNG_E] Transformation input - for blending with natural gas - energy use; 1 ktoe = 1.15 million m3
2	Net Imports (ktoe)	ktoe	14764	13269	12645	9901	11133	11717											
	Solids	ktoe	1887	948	1502	244	967	918	568	481	332	192	186	180	173	164	110	68	
	Oil	ktoe	9686	7712	7331	6589	6773	7308	8.077	8.114	8.151	8.175	8.168	8.167	8.129	8.067	7.303	6.594	
	Natural gas	ktoe	3016	4487	3629	2910	3126	3306	3.003	3.320	3.451	3.702	3.345	3.112	3.162	2.960	3.260	2.929	
	Electricity	ktoe	176	40	58	-13	137	22	240	210	260	208	433	585	547	441	0	0	
3	Import Dependency	%	89,9%	87,3%	88,5%	72,0%	77,5%	79,6%	79%	78%	78%	77%	77%	76%	75%	73%	66%	60%	
4	Main import sources for energy carriers																		
	UK & Northern Ireland share of Electricity Purchases	% of total imports	100%	100%	100%	100%	100%	100%	100%	100%	100%	11%	45%	43%	54%	0%	0%		
	France share of Electricity Purchases	% of total imports							0%	0%	0%	0%	89%	55%	57%	46%	100%	100%	
	UK & Northern Ireland share of Gas Purchases	% of total imports	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
5	Gross Inland Consumption	ktoe	15857	14731	13919	13363	13821	14366	15.296	16.098	16.309	16.533	16.529	16.589	16.742	16.774	16.728	16.690	Includes peat,coal and non-renewable wastes
	Solids	ktoe	2673	2006	2301	1012	1319	1098	695	609	460	316	307	296	285	270	173	103	
	Oil	ktoe	9134	7294	6653	5999	6334	6912	8.077	8.114	8.151	8.175	8.168	8.167	8.129	8.067	7.303	6.594	
	Natural gas	ktoe	3503	4712	3769	4564	4384	4471	4.076	4.301	4.340	4.499	4.050	3.726	3.683	3.390	3.260	2.929	
	Nuclear	ktoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Electricity	ktoe	176	40	58	-13	137	22	240	210	260	208	433	585	547	441	0	0	
	Renewable energy forms	ktoe	370	678	1137	1800	1648	1863	2.055	2.710	2.942	3.175	3.408	3.648	3.928	4.430	5.799	6.851	
	Other	ktoe	0	0	0	0	0	0	153	154	157	160	164	167	171	175	193	213	
2.2. Electricity and heat																			
1	Gross electricity generation	GWhe	25626	28177	28101	31976	31575	33611	31.057	35.965	37.173	39.571	38.530	38.213	40.263	43.215	56.789	64.363	

		Unit	2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	Comments MS	Comments Commission
	Diesel oil	euro/ktoe																		
	Industry	euro/ktoe							1.488.659	1.588.063	1.687.576	1.787.106	1.886.963	1.987.170	2.087.734	2.188.619	2.207.629	2.351.905		
	Households	euro/ktoe							1.495.045	1.598.063	1.701.796	1.806.250	1.911.930	2.018.850	2.127.824	2.237.942	2.332.354	2.458.519		
	Transport private	euro/ktoe																		
	Transport public	euro/ktoe																		
	Gasoline	euro/ktoe																		
	Transport private	euro/ktoe																		
	Transport public	euro/ktoe																		
	Natural gas	euro/ktoe																		
	Industry	euro/ktoe		389.682	428.204	352.559	599.706	763.247	596.252	609.141	623.531	638.488	653.217	670.336	687.998	704.973	756.739	833.601		
	Households	euro/ktoe		613.800	851.955	822.766	922.585	989.385	1.303.753	1.326.343	1.354.181	1.380.638	1.408.627	1.442.848	1.478.561	1.513.005	1.606.302	1.626.640		
2.6. Investments																				
	Energy-related investment costs for overall economy	% of GDP																		If possible a further disaggregated overview . The following categories could be used: energy generation, energy conversion, energy storage, energy transmission and distribution, energy use, energy efficiency, CCS/CCU. Additional to the desired NECPR Annex XIII' Progress towards financing' template.
	Energy related investments costs for Industry	% of value added																		
2.7. Renewables																				
1	Gross final consumption of energy from renewable sources and share of renewable energy in gross final energy consumption and by sector (electricity, heating and cooling, transport) and by technology																			
	RES in Gross Final Energy Consumption	%	2,8%	5,8%	9,1%	16,2%	12,4%	13,1%	15,2%	18,5%	20,1%	21,9%	23,6%	25,2%	27,3%	30,9%	41,9%	49,6%		In line with RED recast
	RES-H&C share	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%	10,1%	12,2%	13,1%	14,3%	15,9%	17,6%	19,5%	21,7%	33,6%	43,4%		In line with RED recast
	RES-E share	%	7,2%	15,6%	25,7%	39,1%	36,4%	36,8%	39,5%	44,1%	46,4%	50,5%	53,7%	56,3%	60,3%	68,9%	82,3%	87,0%		In line with RED recast
	RES-T share	%	0,1%	2,5%	5,9%	10,2%	4,4%	5,5%	7,5%	8,5%	9,3%	10,1%	10,9%	12,1%	13,8%	16,3%	29,6%	45,3%		In line with RED recast (as per Art 25 (1))
	final consumption of renewable energy in transport as contribution to overall target	%	0,5%	13,4%	12,4%	9,6%	12,9%	15,0%												In line with RED recast (as per Art 7 (4))
	Contribution of biofuels and biogas produced from feedstock listed in part A of Annex IX and consumed in transport	%			0,0%	0,6%	0,0%	1,2%												In line with RED recast
	Contribution of biofuels and biogas produced from feedstock listed in part B of Annex IX and consumed in transport	%			9,4%	8,3%	11,0%	11,9%												In line with RED recast
	Contribution from biofuels, bioliquids and biomass fuels consumed in transport, produced from food or feed crops	%			2,9%	0,5%	0,6%	0,3%												In line with RED recast
	Contribution of other biofuels and consumed in transport	%			0,0%	0,0%	0,9%	1,2%												In line with RED recast
	Contribution of renewable fuels of non-biological origin	%	n/a	n/a	n/a	n/a	n/a	n/a												
	Gross final consumption of RES for heating and cooling	ktoe	187	218	273	307	234	278	454	555	595	650	724	805	888	980	1.398	1.744		
	Gross final consumption of electricity from RES	ktoe	170	385	636	1067	1033	1064	1.150	1.456	1.603	1.624	2.013	2.180	2.418	2.865	3.955	4.652		
	Gross final consumption of energy from RES in transport	ktoe	2	93	128	177	187	238	282	336	391	391	389	387	383	378	323	254		
	Total Gross final consumption of RES	ktoe	360	696	1037	1852	1453	1579	1.886	2.347	2.590	2.864	3.127	3.371	3.689	4.223	5.675	6.650		
	Gross final consumption of waste heat and cold for heating and cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												If applicable for H&C obligation
	Waste heat and cold share in gross final consumption for heating and cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												If applicable for H&C obligation
	Gross final consumption of RES from district heating and cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
	RES share from district heating and cooling in gross final consumption for heating and cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
	Gross final consumption of waste heat and cold from district heating and cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
	Waste heat and cold share from district heating and cooling in gross final consumption for heating and cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
	Total final energy consumption (not gross final) in buildings	ktoe	4660	5074	4389	4801	4839	4575											this is just from buildings in the residential and services sector	As per RED Article 15a
	Total Renewables final energy consumption (not gross final) in buildings	ktoe	24	66	94	128	144	165											this is just from buildings in the residential and services sector	As per RED Article 15a
	Total waste heat final energy consumption (not gross final) in buildings (N.B. waste heat cannot be part of Total final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 15a
	Renewables-share in buildings including waste heat	%	0,5%	1,3%	2,1%	2,7%	3,0%	3,6%												As per RED Article 15a
	Renewables-share in buildings excluding waste heat	%	0,5%	1,3%	2,1%	2,7%	3,0%	3,6%												As per RED Article 15a
	Total gross final energy consumption for energy and non-energy in industry	ktoe	2479	1916	2012	2282	2234	2141												As per RED Article 22a
	Total Renewables gross final energy consumption for energy and non-energy in industry	ktoe	163	152	172	183	174	187												As per RED Article 22a
	Total waste heat for energy and non-energy in industry (N.B. waste heat cannot be part of Total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 22a
	Total hydrogen for energy and non-energy in industry	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 22a
	Total RFNBQ for energy and non-energy in industry	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 22a
	Renewables-share in industry	%	6,6%	8,0%	8,5%	8,0%	7,8%	8,7%												As per RED Article 22a
	Renewables-share in industry including waste heat	%	6,6%	8,0%	8,5%	8,0%	7,8%	8,7%												As per RED Article 22a
	Renewables-share in industry excluding waste heat	%	6,6%	8,0%	8,5%	8,0%	7,8%	8,7%												As per RED Article 22a
	Total gross final energy consumption in Heating and Cooling	ktoe	5439	5099	4413	4906	4745	4412	4.471	4.536	4.549	4.558	4.563	4.560	4.551	4.524	4.163	4.020		As per RED Article 23
	Total renewables gross final energy consumption in Heating and Cooling	ktoe	187	218	273	307	234	278	454	555	595	650	724	805	888	980	1.398	1.744		As per RED Article 23
	Total waste heat in Heating and Cooling (N.B. waste heat cannot be part of total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 23
	Total renewable electricity in Heating and Cooling (N.B. renewable electricity cannot be part of total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 23
	Renewables-share in Heating and Cooling	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%												As per RED Article 23
	Renewables-share in Heating and Cooling including waste heat and/or renewable electricity	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%												As per RED Article 23
	Renewables-share in Heating and Cooling excluding waste heat and/or renewable electricity	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%												As per RED Article 23
	Total gross final energy consumption in District Heating and Cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Total renewables gross final energy consumption in District Heating and Cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Total waste heat in District Heating and Cooling (N.B. waste heat cannot be part of total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Total renewable electricity in District Heating and Cooling (N.B. renewable electricity cannot be part of total gross final energy consumption indicator)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Renewables-share in District Heating and Cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Renewables-share in District Heating and Cooling including waste heat and/or renewable electricity	%	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Renewables-share in District Heating and Cooling excluding waste heat and/or renewable electricity	%	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
2	Electricity and heat generation from renewable energy in buildings (as defined in Article 2(1) of Directive 2010/31/EU); this shall include, where available, disaggregated data on energy produced, consumed and injected into the grid by solar photovoltaic systems, solar thermal systems, biomass, heat pumps, geothermal systems, as well as all other decentralized renewables systems)																			Add additional rows if necessary

Unit		2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	Comments MS	Comments Commission
3	If applicable, other national trajectories, including long-term or sectorial ones (the share of food-based and advanced biofuels, the share of renewable energy in district heating, as well as the renewable energy produced by cities and energy communities as defined by Article 22 of [recast of Directive 2009/28/EC as proposed by COM(2016) 767])																		Add additional rows if necessary
3. GHG emissions and removals related indicators																			
1	GHG emissions by policy sector (EU ETS, Effort Sharing Regulation and LULUCF)	tCO2eq	77.426	68.008	65.530	63.898	66.383	64.567	62.977	63.811	63.286	63.825	62.289	61.404	61.178	60.084	58.065	53.409	
	ETS sector emissions (in ETS scope since 2013)	tCO2eq	22.398	17.354	16.841	13.310	15.337	14.686	11.897	11.927	11.448	11.271	10.187	9.428	9.314	8.673	8.685	7.886	
	Effort Sharing sector GHG emissions (in scope since 2013)	tCO2eq	48.816	45.406	44.606	45.436	46.418	45.898	45.466	45.241	45.070	45.097	44.719	44.347	43.958	43.467	39.988	37.011	
	LULUCF (accounted according to EU legislation requirements)	tCO2eq	6.212	5.248	4.082	5.152	4.628	3.983	5.614	6.643	6.768	7.457	7.383	7.629	7.906	7.944	9.392	8.511	
2	GHG emissions by IPCC sector and by gas (where relevant split into EU ETS and Effort Sharing sectors).	tCO2eq																	Date Provided ina separate excel shhet 'Annex I_data for Row 214'
3	Carbon intensity of the overall economy	tCO2eq/GDP					13112,54139	12693,03899	12757,9723	12551,65613	12557,04329	12156,64921	11887,84092	11749,31838	11446,68754	10625,09453	9387,143775	Total GHG incl LULUCF/GDP?	
4	CO2 emission related indicators																		
a	GHG intensity of domestic power and heat generation	tCO2eq/MWh																	
b	GHG intensity of final energy consumption by sector	tCO2eq/toe																	
	Industry	tCO2eq/toe	0,031	0,035	0,033	0,028	0,03	0,03	0,029	0,029	0,028	0,028	0,027	0,026	0,026	0,025	0,024	0,021	
	Residential	tCO2eq/toe	0,023	0,019	0,023	0,02	0,022	0,024	0,023	0,022	0,022	0,022	0,021	0,02	0,02	0,02	0,02	0,019	
	Tertiary	tCO2eq/toe	0,057	0,047	0,042	0,04	0,038	0,035	0,032	0,03	0,029	0,029	0,027	0,026	0,026	0,025	0,023	0,02	
	Passenger tranport	tCO2eq/toe	0,015	0,015	0,014	0,016	0,016	0,013	0,012	0,012	0,012	0,012	0,011	0,011	0,011	0,011	0,011	0,011	
	Freight transport	tCO2eq/toe	0,202	0,231	0,297	0,252	0,263	0,202	0,191	0,187	0,187	0,188	0,184	0,182	0,181	0,177	0,163	0,141	
5	Non-CO2 GHG emission related parameters																		
a	Livestock																		
	dairy cattle	1000 heads	1,025	1,039	1,268	1,512	1,555	1,569	1,578	1,571	1,578	1,594	1,615	1,639	1,662	1,685	1,750	1,750	
	non-dairy cattle	1000 heads	5,926	5,507	5,627	5,713	5,723	5,742	5,648	5,566	5,520	5,446	5,377	5,297	5,231	5,175	5,049	5,049	
	pigs	1000 heads	1,679	1,508	1,508	1,631	1,704	1,603	1,719	1,732	1,689	1,680	1,688	1,705	1,725	1,745	1,802	1,802	
	sheep	1000 heads	6,431	4,328	4,870	5,311	5,331	5,554	5,534	5,412	5,354	5,331	5,326	5,326	5,326	5,330	5,308	5,308	
	poultry	1000 heads	16,573	15,212	17,029	19,300	19,194	18,808	20,480	20,714	21,200	21,828	22,541	23,178	23,726	24,182	25,284	25,284	
b	Nitrogen input from application of synthetic fertilizers	kt nitrogen	352	362	331	380	399	343	281	325	368	398	384	384	380	374	368	368	
c	Nitrogen input from application of manure	kt nitrogen	162	154	169	181	185	185	183	182	180	179	179	178	178	178	178	179	
d	Nitrogen fixed by N-fixing crops	kt nitrogen	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	N-fixing was removed as a reporting requirement in the 2006 IPCC guidelines. See Chapter 11 Footnote 2
e	Nitrogen in crop residues returned to soils	kt nitrogen	45	36	44	36	41	42	37	42	42	42	42	42	41	41	39	39	
f	Area of cultivated organic soils	hectares	103.281	114.375	125.469	136.563	138.781	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	
g	Municipal solid waste (MSW) generation	t	3.040.714	2.846.115	2.619.023	2.611.867	2.659.653	2.706.727	2.724.862	2.743.119	2.761.498	2.780.000	2.798.626	2.817.377	2.836.253	2.855.256	2.874.386	2.893.644	Tonnes of waste taken from NCCS Drivers Graphs Tab average of tonnes of waste for past 5 years
h	Municipal solid waste (MSW) going to landfills	t	1.989.097	1.649.547	536.530	535.064	545.229	554.879	375.000	350.000	350.000	300.000	250.000	200.000	150.000	100.000	100.000	100.000	
i	Share of CH4 recovery in total CH4 generation from landfills	%	54,9	87,9	64,2	61,3	62,1	56,6	56,1	55,62	55,12	54,62	54,12	53,62	53,12	52,62	50,12	47,62	

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

WAM

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

All energy related parameters and variables highlighted in red might require to rely on complementary tools than standard energy system models, covering new requirements from the revised legislation

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	Historic								Modelled								Comments MS	Comments Commission	
		2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040			
1. General parameters and variables																				
1	Population	million						4,924	4,962	5,002	5,042	5,083	5,124	5,165	5,207	5,249	5,465	5,690		
2	GDP	EUR million							320.082	320.738	330.516	340.530	350.795	361.337	372.152	383.282	524.523	719.360		
3	Sectorial gross value added	EUR million																		
	Agriculture	EUR million							7.304	7.477	7.733	7.995	8.262	8.535	8.814	9.101	12.554	17.330		
	Construction	EUR million							8.500	8.438	8.673	8.916	9.169	9.431	9.703	9.986	13.822	19.285		
	Services	EUR million							200.781	199.507	205.568	211.773	218.138	224.679	231.392	238.301	325.730	446.495		
	Energy Sector	EUR million							4.858	4.973	5.135	5.302	5.474	5.647	5.826	6.010	8.228	11.300		
	Industry	EUR million							68.071	69.265	71.477	73.748	76.081	78.479	80.944	83.481	114.650	158.382		
4	Number of households	million							1,859	1,884	1,910	1,943	1,975	2,009	2,045	2,081	2,224	2,365		
5	Households size	inhabitants/household							2,7	2,7	2,6	2,6	2,6	2,6	2,5	2,5	2,5	2,4		
6	Disposable income of households (yearly)	EUR																	Please specify the definition applied	
7	Number of passenger-kilometers	million pkm																		
	Public road transport	million pkm																		
	Private cars	million pkm							46.053	46.794	47.535	46.075	44.615	43.155	41.695	40.235	40.235	40.235		
	Motorcycles	million pkm																		
	Rail	million pkm																		
	Aviation	million pkm																		
	Inland navigation	million pkm																		
8	Freight transport tonnes-kilometres	million tkm																		
	Trucks	million tkm							12.794	13.205	13.615	14.026	14.436	14.847	15.257	15.668	16.467	17.307		
	Rail	million tkm																		
	Inland navigation	million tkm																		
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/GJ or EUR/toe						11,28	15,84	12,30	13,10	13,89	14,69	15,49	16,28	17,08	17,88	18,91	22,91	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Gas (NCV)	EUR/GJ or EUR/toe						13,96	34,63	10,81	11,15	11,48	11,82	12,15	12,48	12,82	13,15	13,15	13,73	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
	Coal	EUR/GJ or EUR/toe						3,74	7,44	4,05	3,67	3,56	3,57	3,58	3,59	3,60	3,61	3,86	4,25	Please specify if Commission's proposal or other source was applied and in the latter case specify methodology
10	Carbon price ETS sectors	EUR/ ton CO2						66,35	95,45	95,45	95,45	95,45	95,45	95,45	95,45	95,45	101,42	190,90	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	EUR/currency and/or USD/currency																		
12	Heating degree days																		Please specify if Commission's proposal or other source was applied and in the latter case specify methodology	
13	Cooling degree days																		Please specify if Commission's proposal or other source was applied and in the latter case specify methodology	
14	Technology cost assumptions (see https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2040-climate-target_en for technology cost assumptions as used in 2040 Climate Target Plan 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	1702	1855	1963	3564	3043	3153												
	Solids	ktoe	845	1020	838	196	274	276	187	129	128	123	118	112	106	98	51	16		
	Oil	ktoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Natural gas	ktoe	488	237	113	1654	1258	1165	1.073	981	889	797	706	614	522	430	0	0		
	Nuclear	ktoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Renewable energy sources	ktoe	370	597	1013	1635	1514	1712	1.848	2.245	2.458	2.768	3.049	3.419	4.137	4.972	6.683	7.998		
	Biogases	ktoe	34	58	55	50	52	53	24	24	26	30	42	78	187	514	514	514	please, indicate what is the projection to produce biogas (primary production), regardless on its end-use	
	- out of which, injected in the natural gas grid	bcm	0	0	0	0	0	0	0	0	2	6	18	54	163	490	490	490	indicate quantity of biomethane injected in grid as in Energy Balances [TI_BNG_E] Transformation input - for blending with natural gas - energy use; 1 ktoe = 1.15 million m3	
2	Net Imports (ktoe)	ktoe	14764	13269	12645	9901	11133	11717												
	Solids	ktoe	1887	948	1502	244	967	918	508	479	332	190	183	175	167	157	96	45		
	Oil	ktoe	9686	7712	7331	6589	6773	7308	8.076	8.109	8.139	7.976	7.789	7.616	7.411	7.190	6.397	5.841		
	Natural gas	ktoe	3016	4487	3629	2910	3126	3306	3.006	3.308	3.426	3.620	3.216	2.836	2.528	2.017	2.141	1.408		
	Electricity	ktoe	176	40	58	-13	137	22	240	211	243	168	383	503	273	154	0	0		
3	Import Dependency	%	89,9%	87,3%	88,5%	72,0%	77,5%	79,6%	79%	78%	78%	76%	75%	73%	69%	64%	59%	51%		
4	Main import sources for energy carriers																			
	UK & Northern Ireland share of Electricity Purchases	% of total imports	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	3%	40%	10%	16%	0%	0%		
	France share of Electricity Purchases	% of total imports							0%	0%	0%	0%	97%	60%	90%	84%	100%	100%		
	UK & Northern Ireland share of Gas Purchases	% of total imports	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
5	Gross Inland Consumption	ktoe	15857	14731	13919	13363	13821	14366	15.295	16.080	16.277	16.353	16.213	16.100	16.025	15.954	15.782	15.652		

		Unit	2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	Comments MS	Comments Commission
	Solids	ktoe	2673	2006	2301	1012	1319	1098	695	608	460	313	300	287	272	255	147	62		
	Oil	ktoe	9134	7294	6653	5999	6334	6912	8.076	8.109	8.139	7.976	7.789	7.616	7.411	7.190	6.397	5.841		
	Natural gas	ktoe	3503	4712	3769	4564	4384	4471	4.079	4.289	4.315	4.417	3.922	3.449	3.050	2.447	2.141	1.408		
	Nuclear	ktoe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Electricity	ktoe	176	40	58	-13	137	22	240	211	243	168	383	503	273	154	-462	-697		
	Renewable energy forms	ktoe	370	678	1137	1800	1648	1863	2.052	2.708	2.963	3.304	3.627	4.034	4.789	5.658	7.286	8.736		
	Other	ktoe	0	0	0	0	0	0	153	154	157	174	192	211	230	250	272	302		
2.2. Electricity and heat																				
1	Gross electricity generation	GWhe	25626	28177	28101	31976	31575	33611	31.057	35.901	37.324	40.212	39.555	39.841	44.315	47.692	62.229	70.718		
2	By fuel																			
	Nuclear energy	GWhe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Solids	GWhe	8839	5734	7466	1891	3364	2933	1.745	1.405	278	278	278	278	278	278	278	277	coal + peat capacity + non-renewable wastes	
	Oil (including refinery gas)	GWhe	3340	603	407	389	1453	1075	137	17	573	10	2	5	4	0	2	0		
	Gas (including derived gases)	GWhe	11574	18111	12367	16236	15156	16530	15.141	16.150	16.238	17.100	14.317	11.754	10.223	8.890	8.904	6.310		
	Biomass-waste	GWhe	8	110	274	756	822	855	577	1.336	1.338	1.338	1.338	1.340	1.333	1.332	479	478	biodegradable waste + biomass	
	Hydro (pumping excluded)	GWhe	631	599	806	933	749	701	764	740	723	735	736	712	690	616	568	520		
	Wind	GWhe	1112	2815	6573	11549	9778	11208	11.781	15.026	15.859	17.244	18.467	20.332	25.448	29.190	42.962	53.320		
	Solar	GWhe	0	0	3	54	80	150	748	1.132	2.221	3.414	4.324	5.326	6.245	7.292	8.782	9.345		
	Geothermal and other renewables	GWhe	122	205	205	168	173	159	165	94	94	94	94	94	94	94	255	468	biogas + landfill gas + biomethane + marine	
	Other fuels (hydrogen, methanol)	GWhe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
3	Share of power generation from combined heat and power generation in total electricity generation (CHP electricity generation divided by the total gross electricity generation, including the generation in pumped storage power stations)	%	2,3%	6,8%	7,5%	6,6%	6,2%	6,1%	7,3%	6,3%	6,0%	5,6%	5,5%	5,1%	4,3%	3,8%	2,7%	2,2%		
	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)	%	100%	100%	100%	100%	100%	100%												
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	5,77	7,95	9,17	10,70	10,59	10,76	11,26	11,61	13,39	14,21	15,78	16,37	19,03	22,39	25,99	29,26		
	Nuclear energy	GW	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00		
	Solids	GW	1,33	1,31	1,32	1,32	1,09	0,69	0,90	0,79	0,79	0,04	0,04	0,04	0,04	0,04	0,04	0,04	coal + peat capacity + non-renewable wastes	
	Oil (including refinery gas)	GW	1,01	1,13	0,92	0,92	0,92	1,17	0,32	0,32	0,32	1,07	0,96	0,96	0,96	0,96	0,21	0,00		
	Gas (including derived gases)	GW	2,70	3,87	4,21	3,76	3,81	3,83	3,90	3,81	4,11	4,31	4,73	4,73	5,33	5,81	6,29	6,49		
	Biomass-waste	GW	0,00	0,01	0,03	0,09	0,09	0,09	0,15	0,19	0,19	0,19	0,19	0,19	0,19	0,19	0,07	0,07	biodegradable waste + biomass	
	Biogases	GW	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	category not used so as to align with gross electricity generation categories	
	Hydro (pumping excluded)	GW	0,23	0,24	0,24	0,24	0,24	0,24	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23	0,23		
	Wind	GW	0,49	1,39	2,45	4,31	4,34	4,54	5,22	5,28	5,85	6,09	6,59	7,18	9,76	11,16	15,96	20,06		
	Solar	GW	0,00	0,00	0,00	0,06	0,10	0,20	0,56	1,04	2,25	2,69	3,58	4,04	5,32	6,50	7,95	9,38		
	Geothermal and other renewables	GW	0,02	0,03	0,05	0,04	0,04	0,04	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03		
	Other fuels (hydrogen, methanol)	GW	0,0	0,0	0,0	0,0	0,0	0,0	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	biogas + landfill gas + biomethane + marine	
	Installed capacity of stationary batteries	GWh							0,75	0,95	1,15	1,15	1,95	2,75	4,35	5,95	7,95	10,35	Might be significant by 2040, useful in view of the preparation of the next Reference Scenario, model calibration, and to monitor progress on NZIA objectives.	
5	Heat generation from thermal power generation	GWhe																		
6	Heat generation from combined heat and power plants, including industrial waste heat	GWhe																		
7	Cross-border interconnection capacities for electricity [the level of electricity interconnectivity in line with Article 4(d)(1) and the relevant annex of the Energy Union Governance regulation] and their projected usage rates [note that such information may not be available in standard energy system models; complementary tools or assumptions might be needed]								1.350	1.350	1.850	1.900	3.550	3.550	3.550	3.550	5.000	5.700		
2.3. Transformation sector																				
1	Fuel Inputs to Thermal Power Generation	ktoe	4786	4595	3805	3414	3774	3800												
	Solids	ktoe	1919	1359	1680	409	744	618	586	700	555	420	420	419	419	421	223	223		
	Oil	ktoe	794	137	86	107	360	255	35	9	11	5	1	2	2	0	1	0		
	Gas	ktoe	2044	3025	1899	2567	2343	2594	2.282	2.503	2.514	2.664	2.240	1.865	1.641	1.440	1.425	1.034		
2	Fuel Input to other conversion processes	ktoe	0	0	0	0	0	0	0	1	1	47	93	140	186	232	232	232	"Other conversion processes" consists only of district heating. Oil refining is not included.	
2.4. Energy consumption																				
1	Primary energy consumption	ktoe	15857	14731	13919	13363	13821	14366	15.295	16.080	16.277	16.353	16.213	16.100	16.025	15.954	15.782	15.652	In practice this is the PEC(2020-2030) indicator of Eurostat	
1	Final energy consumption	ktoe	12606	11884	11408	11250	11514	12060	12.510	12.811	13.029	13.072	13.082	13.078	13.054	13.021	12.813	12.683	In practice this is the FEC(2020-2030) indicator of Eurostat	
2	by sector																			
	Industry	ktoe	2479	1916	2012	2282	2234	2141	2.161	2.182	2.232	2.281	2.313	2.330	2.347	2.365	2.439	2.484		
	Residential	ktoe	3296	3639	2845	3195	3075	2708	2.792	2.876	2.911	2.923	2.933	2.940	2.945	2.945	2.795	2.780		
	Tertiary	ktoe	1364	1435	1545	1606	1764	1866	1.986	2.106	2.163	2.211	2.260	2.310	2.357	2.405	2.547	2.604	(Eurostat) Services?	
	Transport	ktoe	5084	4599	4786	3913	4189	5025	5.240	5.306	5.385	5.317	5.238	5.161	5.067	4.968	4.676	4.440		
	Other	ktoe	383	294	221	253	252	320	330	340	339	339	338	338	338	339	357	375	(Eurostat) Fishing+Agriculture/Forestry+Others	
	Number of heat pumps	Million Units	-	458	3562	33222	48863	76283											Useful in view of the preparation of the next Reference Scenario, model calibration, and to monitor progress on NZIA objectives.	
	By transport activity, when available																			
	Passenger transport	ktoe																		
	Freight transport	ktoe																		
	Batteries for Evs	GWh																	Useful in view of the preparation of the next Reference Scenario, model calibration, and to monitor progress on NZIA objectives.	
	Electrolysers	GW																	Useful to monitor progress on NZIA objectives.	

	Unit	2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	Comments MS	Comments Commission
3 by fuel																			
Solids	ktoe	758	632	555	461	456	356	343	329	324	313	300	287	272	255	147	62		
Oil	ktoe	8196	7159	6483	5825	5976	6616	6.749	6.734	6.704	6.509	6.296	6.082	5.849	5.596	4.677	3.983		
Gas	ktoe	1369	1590	1715	1960	1951	1808	1.797	1.786	1.801	1.753	1.682	1.584	1.409	1.008	717	374		
Electricity	ktoe	2094	2184	2218	2464	2582	2646	2.824	3.006	3.148	3.310	3.459	3.598	3.741	3.897	4.480	4.944		
Heat	ktoe	0	0	0	0	0	0												
Renewable energy forms	ktoe	188	311	394	485	496	576	733	885	978	1.096	1.236	1.400	1.637	2.099	2.603	3.100		
Other	ktoe	0	9	44	54	54	58	64	70	73	91	108	127	146	166	188	219		
4 Final non energy consumption	ktoe																		
5 Primary energy intensity of the economy	toe/euro							0	0	0	0	0	0	0	0	0	0		
6 Final energy intensity by sector																			
Industry	toe/euro of value added							0	0	0	0	0	0	0	0	0	0	Energy consumption of the sector and value added of the sector	
Residential	toe/euro of value added																	Energy consumption of the sector and value added of the sector	
Tertiary	toe/euro of value added							0	0	0	0	0	0	0	0	0	0	Energy consumption of the sector and value added of the sector	
Passenger transport	toe/million pkm																		
Freight transport	toe/million tkm																		
2.5. Prices		0	0	0	0	0	0												
1 Electricity prices by type of using sector (residential, industry, tertiary)																			
residential	euro/MWh		179	236	249	282	228	349	243	239	253	255	249	245	252	285	305		
industry	euro/MWh		107	136	134	186	223	205	138	134	135	135	131	129	131	141	151		
tertiary	euro/ktoe							272	186	183	184	183	179	176	181	191	204		
2 National retail fuel prices (including taxes, per source and sector)																			
Diesel oil	euro/ktoe																		
Industry	euro/ktoe							1.488.659	1.588.063	1.687.576	1.787.106	1.886.963	1.987.170	2.087.734	2.188.650	2.257.792	2.403.171		
Households	euro/ktoe							1.479.318	1.579.003	1.679.376	1.777.229	1.876.136	1.976.392	2.078.468	2.181.336	2.334.780	2.487.537		
Transport private	euro/ktoe																		
Transport public	euro/ktoe																		
Gasoline	euro/ktoe																		
Transport private	euro/ktoe																		
Transport public	euro/ktoe																		
Natural gas	euro/ktoe																		
Industry	euro/ktoe		389.682	428.204	352.559	599.706	763.247	596.098	608.903	623.268	638.150	655.692	676.389	698.952	722.427	796.120	913.227		
Households	euro/ktoe		613.800	851.955	822.766	922.585	989.385	1.290.707	1.309.883	1.334.001	1.354.229	1.382.547	1.418.924	1.460.836	1.507.690	1.705.979	1.849.023		
2.6. Investments																			
Energy-related investment costs for overall economy	% of GDP																		If possible a further disaggregated overview . The following categories could be used: energy generation, energy conversion, energy storage, energy transmission and distribution, energy use, energy efficiency, CCS/CCU. Additional to the desired NECPR Annex XIII' Progress towards financing' template.
Energy related investments costs for Industry	% of value added																		
2.7. Renewables																			
Gross final consumption of energy from renewable sources and share of renewable energy in gross final energy consumption and by sector (electricity, heating and cooling, transport) and by technology																			
RES in Gross Final Energy Consumption	%	2,8%	5,8%	9,1%	16,2%	12,4%	13,1%	15,2%	18,5%	20,3%	23,1%	25,9%	29,0%	34,7%	42,7%	56,9%	68,1%		In line with RED recast
RES-H&C share	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%	10,1%	12,1%	12,9%	14,9%	17,5%	20,8%	26,0%	36,6%	54,2%	71,6%		In line with RED recast
RES-E share	%	7,2%	15,6%	25,7%	39,1%	36,4%	36,8%	39,5%	44,3%	47,5%	52,3%	55,9%	59,9%	69,7%	80,1%	95,3%	102,9%		In line with RED recast
RES-T share	%	0,1%	2,5%	5,9%	10,2%	4,4%	5,5%	7,5%	8,6%	9,5%	10,5%	11,6%	13,1%	15,2%	18,2%	34,9%	49,3%		In line with RED recast (as per Art 25 (1))
(final consumption of renewable energy in transport as contribution to overall target	%	0,5%	13,4%	12,4%	9,6%	12,9%	15,0%												In line with RED recast (as per Art 7 (4))
Contribution of biofuels and biogas produced from feedstock listed in part A of Annex IX and consumed in transport	%	0,0%	0,0%	0,0%	0,6%	0,0%	1,2%												In line with RED recast
Contribution of biofuels and biogas produced from feedstock listed in part B of Annex IX and consumed in transport	%	0,0%	0,0%	9,4%	8,3%	11,0%	11,9%												In line with RED recast
Contribution from biofuels, bioliquids and biomass fuels consumed in transport, produced from food or feed crops	%	0,0%	0,0%	2,9%	0,5%	0,6%	0,3%												In line with RED recast
Contribution of other biofuels and consumed in transport	%	0,0%	0,0%	0,0%	0,0%	0,9%	1,2%												In line with RED recast
Contribution of renewable fuels of non-biological origin	%	n/a	n/a	n/a	n/a	n/a	n/a												
Gross final consumption of RES for heating and cooling	ktoe	187	218	273	307	234	278	451	550	590	676	789	929	1.149	1.597	2.193	2.769		
Gross final consumption of electricity from RES	ktoe	170	385	636	1067	1033	1064	1.150	1.460	1.639	1.895	2.114	2.353	2.848	3.408	4.658	5.542		
Gross final consumption of energy from RES in transport	ktoe	2	93	128	177	187	238	282	335	389	420	448	471	489	502	411	332		
Total Gross final consumption of RES	ktoe	360	696	1037	1852	1453	1579	1.883	2.345	2.617	2.992	3.350	3.753	4.486	5.508	7.262	8.643		
Gross final consumption of waste heat and cold for heating and cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												If applicable for H&C obligation
Waste heat and cold share in gross final consumption for heating and cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												If applicable for H&C obligation
Gross final consumption of RES from district heating and cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
RES share from district heating and cooling in gross final consumption for heating and cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
Gross final consumption of waste heat and cold from district heating and cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
Waste heat and cold share from district heating and cooling in gross final consumption for heating and cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												In line with RED recast
Total final energy consumption (not gross final) in buildings	ktoe	4660	5074	4389	4801	4839	4575												As per RED Article 15a
Total Renewables final energy consumption (not gross final) in buildings	ktoe	24	66	94	128	144	165												As per RED Article 15a
Total waste heat final energy consumption (not gross final) in buildings (N.B. waste heat cannot be part of Total final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 15a
Renewables-share in buildings including waste heat	%	0,5%	1,3%	2,1%	2,7%	3,0%	3,6%												As per RED Article 15a
Renewables-share in buildings excluding waste heat	%	0,5%	1,3%	2,1%	2,7%	3,0%	3,6%												As per RED Article 15a
Total gross final energy consumption for energy and non-energy in industry	ktoe	2479	1916	2012	2282	2234	2141												As per RED Article 22a
Total Renewables gross final energy consumption for energy and non-energy in industry	ktoe	163	152	172	183	174	187												As per RED Article 22a

		Unit	2005	2010	2015	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2035	2040	Comments MS	Comments Commission
	Total waste heat for energy and non-energy in industry (N.B. waste heat cannot be part of Total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 22a
	Total hydrogen for energy and non-energy in industry	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 22a
	Total RFNBO for energy and non-energy in industry	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 22a
	Renewables-share in industry	%	6,6%	8,0%	8,5%	8,0%	7,8%	8,7%												As per RED Article 22a
	Renewables-share in industry including waste heat	%	6,6%	8,0%	8,5%	8,0%	7,8%	8,7%												As per RED Article 22a
	Renewables-share in industry excluding waste heat	%	6,6%	8,0%	8,5%	8,0%	7,8%	8,7%												As per RED Article 22a
	Total gross final energy consumption in Heating and Cooling	ktoe	5439	5099	4413	4906	4745	4412	4.476	4.544	4.560	4.531	4.497	4.459	4.418	4.363	4.049	3.866		As per RED Article 23
	Total renewables gross final energy consumption in Heating and Cooling	ktoe	187	218	273	307	234	278	451	550	590	676	789	929	1.149	1.597	2.193	2.769		As per RED Article 23
	Total waste heat in Heating and Cooling (N.B. waste heat cannot be part of total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 23
	Total renewable electricity in Heating and Cooling (N.B. renewable electricity cannot be part of total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 23
	Renewables-share in Heating and Cooling	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%												As per RED Article 23
	Renewables-share in Heating and Cooling including waste heat and/or renewable electricity	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%												As per RED Article 23
	Renewables-share in Heating and Cooling excluding waste heat and/or renewable electricity	%	3,4%	4,3%	6,2%	6,3%	4,9%	6,3%												As per RED Article 23
	Total gross final energy consumption in District Heating and Cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Total renewables gross final energy consumption in District Heating and Cooling	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Total waste heat in District Heating and Cooling (N.B. waste heat cannot be part of total gross final energy consumption indicator above)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Total renewable electricity in District Heating and Cooling (N.B. renewable electricity cannot be part of total gross final energy consumption indicator)	ktoe	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Renewables-share in District Heating and Cooling	%	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Renewables-share in District Heating and Cooling including waste heat and/or renewable electricity	%	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
	Renewables-share in District Heating and Cooling excluding waste heat and/or renewable electricity	%	n/a	n/a	n/a	n/a	n/a	n/a												As per RED Article 24
2	Electricity and heat generation from renewable energy in buildings (as defined in Article 2(1) of Directive 2010/31/EU); this shall include, where available , disaggregated data on energy produced, consumed and injected into the grid by solar photovoltaic systems, solar thermal systems, biomass, heat pumps, geothermal systems, as well as all other decentralized renewables systems)																			Add additional rows if necessary
3	If applicable, other national trajectories, including long-term or sectorial ones (the share of food-based and advanced biofuels, the share of renewable energy in district heating, as well as the renewable energy produced by cities and energy communities as defined by Article 22 of [recast of Directive 2009/28/EC as proposed by COM(2016) 767])																			Add additional rows if necessary
3. GHG emissions and removals related indicators																				
1	GHG emissions by policy sector (EU ETS, Effort Sharing Regulation and LULUCF)	tCO2eq	77.426	68.008	65.530	63.898	66.383	64.567	62.006	61.026	59.528	58.660	55.780	53.268	50.746	47.983	46.357	40.544		
	ETS sector emissions (in ETS scope since 2013)	tCO2eq	22.398	17.354	16.841	13.310	15.337	14.686	11.897	11.874	11.365	11.179	10.120	9.169	8.437	7.512	7.378	6.051	Projections GovReg_Proj_Table 1a Column LC-MD	
	Effort Sharing sector GHG emissions (in scope since 2013)	tCO2eq	48.816	45.406	44.606	45.436	46.418	45.898	45.031	44.266	43.267	42.002	40.572	39.057	37.462	35.559	31.450	28.241	Projections GovReg_Proj_Table 1a column MK-NL	
	LULUCF (accounted according to EU legislation requirements)	tCO2eq	6.212	5.248	4.082	5.152	4.628	3.983	5.078	4.885	4.897	5.480	5.088	5.043	4.846	4.912	7.530	6.253	Projections GovReg_Proj_Table 1a column JU-KV	
2	GHG emissions by IPCC sector and by gas (where relevant split into EU ETS and Effort Sharing sectors).	tCO2eq																		
3	Carbon intensity of the overall economy	tCO2eq/GDP																		
4	CO2 emission related indicators																			
a	GHG intensity of domestic power and heat generation	tCO2eq/MWh																		
b	GHG intensity of final energy consumption by sector	tCO2eq/toe																		
	Industry	tCO2eq/toe	0,031	0,035	0,033	0,028	0,03	0,03	0,029	0,028	0,027	0,026	0,024	0,023	0,022	0,02	0,019	0,016		
	Residential	tCO2eq/toe	0,023	0,019	0,023	0,02	0,022	0,024	0,022	0,021	0,02	0,02	0,019	0,018	0,017	0,016	0,017	0,015		
	Tertiary	tCO2eq/toe	0,057	0,047	0,042	0,04	0,038	0,035	0,031	0,029	0,028	0,027	0,025	0,023	0,022	0,02	0,018	0,016		
	Passenger transport	tCO2eq/toe	0,015	0,015	0,014	0,016	0,016	0,013	0,012	0,012	0,011	0,011	0,011	0,01	0,01	0,01	0,01	0,009		
	Freight transport	tCO2eq/toe	0,202	0,231	0,297	0,252	0,263	0,202	0,188	0,179	0,176	0,173	0,165	0,158	0,15	0,142	0,13	0,108		
5	Non-CO2 GHG emission related parameters																			
a	Livestock																			
	dairy cattle	1000 heads	1.025	1.039	1.268	1.512	1.555	1.569	1.578	1.571	1.578	1.594	1.615	1.639	1.662	1.685	1.750	1.750		
	non-dairy cattle	1000 heads	5.926	5.507	5.627	5.713	5.723	5.742	5.648	5.566	5.520	5.446	5.377	5.297	5.231	5.175	5.049	5.049		
	pigs	1000 heads	1.679	1.508	1.506	1.631	1.704	1.603	1.719	1.732	1.689	1.680	1.688	1.705	1.725	1.745	1.802	1.802		
	sheep	1000 heads	6.431	4.328	4.870	5.311	5.331	5.554	5.534	5.412	5.354	5.331	5.326	5.326	5.328	5.330	5.308	5.308		
	poultry	1000 heads	16.573	15.212	17.029	19.300	19.194	18.808	20.480	20.714	21.200	21.828	22.541	23.178	23.726	24.182	25.284	25.284		
b	Nitrogen input from application of synthetic fertilizers	kt nitrogen	352	362	331	380	399	343	281	325	368	398	384	384	384	374	368	368		
c	Nitrogen input from application of manure	kt nitrogen	162	154	169	181	185	185	183	182	181	180	180	180	180	180	180	181		
d	Nitrogen fixed by N-fixing crops	kt nitrogen	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	N-fixing was removed as a reporting requirement in the 2006 IPCC guidelines. See Chapter 11 Footnote 2	
e	Nitrogen in crop residues returned to soils	kt nitrogen	45	36	44	36	41	42	37	42	42	42	42	42	41	41	39	39		
f	Area of cultivated organic soils	hectares	103.281	114.375	125.469	136.563	138.781	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000	141.000		
g	Municipal solid waste (MSW) generation	t	3.040.714	2.846.115	2.619.023	2.611.867	2.659.653	2.706.727	2.724.862	2.743.119	2.761.498	2.780.000	2.798.626	2.817.377	2.836.253	2.855.256	2.874.386	2.893.644	Tonnes of waste taken from NCCS Drivers Graphs Tab average of tonnes of waste for past 5 years	
h	Municipal solid waste (MSW) going to landfills	t	1.989.097	1.649.547	536.530	535.064	545.229	554.879	375.000	350.000	350.000	300.000	250.000	200.000	150.000	100.000	100.000	100.000	0	
i	Share of CH4 recovery in total CH4 generation from landfills	%	54,9	87,9	64,2	61,3	62,1	56,6	56,1	55,6	55,1	54,6	54,1	53,6	53,1	52,6	50,1	47,6		