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.

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Version 13 June 2023

			Statistics				Projections								
		Unit	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	Comments MS	Source statistics	modelling output or exogenous assumption?
1. General parameters and variables													Note 1: Projections are made by the Netherlands Environmental Assessment Agency (PBL) which is an independent public agency. For their projections (and other assessments) the then most recent data available was used. The projections submitted were based on the Netherlands Climate and Energy Outlook 2022 (or "KEV2022", published in November 2022), which was predicated upon the NIR2022 as the NIR2023 was at that time not yet available. These sources were also used in reporting under the Governance Regulation (art. 18) in March 2023. To maintain consistency with the projections, historical values are therefore given in line with the NIR 2022 (not the NIR 2023). Projections are based on the policy scenario With Existing Measures. Note 2: On the projections for the years 2045 and 2050, a different source has been used. The KEV 2022 is not the direct data source for these years, as it only includes projections up to 2040. The figures for 2045 and 2050 are derived from a dedicated TNO study to explore to what extent these additional projections can be provided (specifically for the Governance Regulation – Art. 18 reporting) consistent with, and elaborating upon, the KEV 2022 findings using OPERA (an integral optimization model for the Dutch energy system). See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf In this first iteration, also throughout the reporting towards Governance Regulation Art. 18 and the accompanying tables (especially tables 1 and 3) projections are only provided for totals under WEM and therefore only enable headline reporting for the years 2045 and 2050 for WEM and in this iteration cannot necessarily provide the same level of detail for parameters and variables. Additional parameters and variables used in this study that do not directly fit under the listed categories of this reporting template, are provided in the study and table 3 of reporting under the Governance Regulation (art. 18) under '5. Other parameters and variables'.		
1	**Population**	**count**	16305526	16574989	16900726	17407585	17980258	18479493	18892060	19210964			Count - KEV2022/MONIT (PBL)	CBS	Assumption
2	**GDP**	**EUR million**	620748	664765	690008	727885	834233	885503	934597	985807			EUR 2015 - KEV2022/MONIT (PBL)	CBS	Assumption
3	**Sectorial gross value added**	**EUR million**	550014	593884	620835	652598	789521	840808	887563	936274,69			EUR 2015 - KEV2022/MONIT (PBL)	CBS	Assumption
	Agriculture	**EUR million**	10254	11224	11898	12373	13522	14023	14405	14798			EUR 2015 - KEV2022/MONIT (PBL)	CBS	Assumption
	Construction	**EUR million**	28407	27370	26394	33699	39880	39267	39042	38720			EUR 2015 - KEV2022/MONIT (PBL)	CBS	Assumption
	Services	**EUR million**	418944	460180	487624	509797	628821	675298	717647	760992			EUR 2015 -KEV2022/MONIT (PBL) Including drinking water and waste management	CBS	Assumption
	Energy Sector	**EUR million**	6553	7061	7817	9134	10326	10634	10760	10861			EUR 2015 - KEV2022/MONIT (PBL)	CBS	Assumption
	Industry	**EUR million**	85856	88049	87102	87595	96972	101586	105709	110904			EUR 2015 -KEV2022/MONIT (PBL) Including mineral extraction	CBS	Assumption
4	**Number of households**	**millions**	7,1	7,4	7,7	8,0	8,4	8,7	8,9	9,0			KEV2022/MONIT (PBL)	CBS	Assumption
5	**Households size**	**inhabitants/household**	2,3	2,2	2,2	2,1	2,1	2,1	2,1	2,1			KEV2022/MONIT (PBL)	CBS	Assumption
6	**Disposable income of households (yearly)**	**EUR**													
7	**Number of passenger-kilometers**	**million pkm**	183000	181300	182182	149235	196692	205863	211063	216475			KEV2022/MONIT (PBL), Includes bicycles, pedestrians, and other	CBS	modelling output
	Public road transport	million pkm	7300	6700	5082	2894	5661	5711	5715	5719			KEV2022/MONIT (PBL)	CBS	modelling output
	Private cars	million pkm	137000	132000	132000	112241	143285	148623	153599	158742			KEV2022/MONIT (PBL)	CBS	modelling output
	Motorcycles	million pkm													
	Rail	million pkm	15200	17100	18600	9100	20300	23339	23558	23824			KEV2022/MONIT (PBL)	CBS	modelling output
	Aviation	million pkm													
	Inland navigation	million pkm													
8	**Freight transport tonnes-kilometres**	**million tkm**	109756	108860	114006	115784	128524	137936	141592	145248			KEV2022/MONIT (PBL)	CBS	modelling output
	Trucks	million tkm	60776	56343	58926	63935	70229	75001	76988	78976			KEV2022/MONIT (PBL)	CBS	modelling output
	Rail	million tkm	5914	5925	6545	6665	8034	9091	9332	9572			KEV2022/MONIT (PBL)	CBS	modelling output
	Inland navigation	million tkm	43066	46592	48535	45184	50261	53845	55272	56699	58126	59553	KEV2022/MONIT (PBL); TNO 2023; Please note: For all projections for 2045 & 2050 in this table and accompanying tables, KEV 2022 is not the formal data source, as it only offers projections up to 2040. The figures for 2045 and 2050 are derived from a TNO study to provide these projections in line with, and elaborating upon, the KEV 2022 findings. See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf	CBS	modelling output
9	**International Fuel prices**	**EUR/GJ or EUR/toe**											Price assumptions according to PBL in the KEV(2022), based on the EC communication 'Recommended parameters for reporting on GHG projections in 2023' (2022)		
	Oil	EUR 2018/barrel	58,22	71,14	52,59	39,08	92,02	92,02	92,02	97,40	105,16	117,74	EUR (2021)/barrel - KEV2022/MONIT (PBL); TNO 2023; Please note: For all projections for 2045 & 2050 in this table and accompanying tables, KEV 2022 is not the formal data source, as it only offers projections up to 2040. The figures for 2045 and 2050 are derived from a TNO study to provide these projections in line with, and elaborating upon, the KEV 2022 findings. See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf	CBS	assumption

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Version 13 June 2023

			Statistics				Projections								
		Unit	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	Comments MS	Source statistics	modelling output or exogenous assumption?
	Gas (NCV)	EUR 2018/m3	0,17	0,22	0,23	0,13	0,43	0,37	0,37	0,37	0,36	0,37	EUR(2021)/m3 - KEV2022/MONIT (PBL); TNO 2023; Please note: For all projections for 2045 & 2050 in this table and accompanying tables, KEV 2022 is not the formal data source, as it only offers projections up to 2040. The figures for 2045 and 2050 are derived from a TNO study to provide these projections in line with, and elaborating upon, the KEV 2022 findings. See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf	CBS	assumption
	Coal	EUR 2018/ton	70,97	81,70	64,75	58,49	80,70	80,70	80,70	85,90	88,27	93,31	EUR(2021)/metric tonnes - KEV2022/MONIT (PBL); TNO 2023; Please note: For all projections for 2045 & 2050 in this table and accompanying tables, KEV 2022 is not the formal data source, as it only offers projections up to 2040. The figures for 2045 and 2050 are derived from a TNO study to provide these projections in line with, and elaborating upon, the KEV 2022 findings. See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf	CBS	assumption
10	**Carbon price ETS sectors**	EUR 2018/ton CO2		17,01	8,44	25,57	86,02	109,82	140,23	178,94	236,19	293,33	EUR (2021)/ EUA - KEV2022/MONIT (PBL); TNO 2023; Please note: For all projections for 2045 & 2050 in this table and accompanying tables, KEV 2022 is not the formal data source, as it only offers projections up to 2040. The figures for 2045 and 2050 are derived from a TNO study to provide these projections in line with, and elaborating upon, the KEV 2022 findings. See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf	CBS	assumption
11	**Exchange rate to EUR and to US dollar**	USD/Euro	1,24	1,33	1,11	1,14	1,17	1,27	1,27	1,27			USD (2021)/ EUR - KEV2022/MONIT (PBL)	CBS	assumption
12	**Heating degree days**		2350	2874	2257	2110	2298	2260	2222	2183,62			KEV2022/MONIT (PBL)	KNMI	Assumption
13	**Cooling degree days**		95	95	95	146	136	145	153	160,85			KEV2022/MONIT (PBL)	KNMI	Assumption
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**														
2. energy balances and indicators															
2.1 energy supply															
1	**Production (incl.recovery of products)**	**ktoe**	62710	71446	48487	27863	23083	23765	22824	22553			Primary production (total) - including Recovered & Recycled products	Eurostat	modelling output
	Solids	**ktoe**	0	0	0	0	0	0	0	0			Primary production - solid fossil fuels	Eurostat	modelling output
	Oil	**ktoe**	2809	1959	2445	1506	1524	1484	1101	564			Primary production - Oil and petroleum products (including Recovered & recycled products)	Eurostat	modelling output
	Natural gas	**ktoe**	56176	64717	39447	17261	8713	5975	3676	2913			Primary production - Natural gas	Eurostat	modelling output
	Nuclear	**ktoe**	1031	917	937	956	1017	873	0	0			Primary production - Nuclear heat	Eurostat	modelling output
	Renewable energy sources	**ktoe**	1976	3128	4822	7127	11127	14732	17345	18374			Primary production - Renewables and biofuels	Eurostat	modelling output
	Other	**ktoe**	718	725	647	713	702	702	702	702			Primary production - non-renewable waste	Eurostat	modelling output
2	**Net Imports (ktoe)**	**ktoe**	37527	28283	43786	56905	61677	55806	55222	55746			Import - Export all products	Eurostat	modelling output
	Solids	**ktoe**	8197	7645	10692	3779	6180	1904	1315	1315			Import - Export solid fossil fuel	Eurostat	modelling output
	Oil	**ktoe**	48403	44483	43806	39233	41159	40534	40299	40341			Import - Export oil and petroleum products	Eurostat	modelling output
	Natural gas	**ktoe**	-20940	-24209	-10494	14208	15244	15145	16841	16477			Import - Export natural gas	Eurostat	modelling output
	Electricity	ktoe	1573	239	752	-229	-1237	-2142	-3366	-2421	-2422	-2422	KEV2022/MONIT (PBL); TNO 2023; Please note: For all projections for 2045 & 2050 in this table and accompanying tables, KEV 2022 is not the formal data source, as it only offers projections up to 2040. The figures for 2045 and 2050 are derived from a TNO study to provide these projections in line with, and elaborating upon, the KEV 2022 findings. See: Scheepers, M., J. van Stralen, J. G. Chavarriaga, K. Smekens (2023). Referentiescenario broeikasgasemissies 2040-2050 ten behoeve van de INEK-rapportage 2023 (TNO Publiek): https://publications.tno.nl/publication/34640673/qSKuMd/TNO-2023-P10123.pdf	Eurostat	modelling output
	Other	ktoe	0	0	150	78	0	0	0	0			Import - Export non renewable waste	Eurostat	modelling output
3	**Import Dependency**	**%**	38%	28%	49%	68%	73%	71%	71%	72%			Net energy imports divided by gross inland energy consumption plus fuel supplied to international maritime bunkers		calculation
4	**Main import sources for energy carriers**														
	Main country (please specify here) of origin of Electricity Purchases	**% of total imports**	**81,29**	**57,35**	**77,90**	**44,24**							Electricity import from Germany	CBS	modelling output
	1st main country (please specify here) of origin of Gas Purchases	**% of total imports**			**50,85**	**41,44**							Gas import via Norway (excluding LNG)	CBS	modelling output
	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**													
5	**Gross Inland Consumption**	**ktoe**	83702	86154	76456	71933	72900	67873	66328	66588	59824	67744	KEV2022; TNO 2023, gross inland consumption all products (Europe 2020-2030 definition)	Eurostat	modelling output

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Version 13 June 2023

			Statistics				Projections								
		Unit	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	Comments MS	Source statistics	modelling output or exogenous assumption?
	Solids	ktoe	8094	7541	11072	4110	6177	1904	1315	1315	33	1158	KEV2022; TNO 2023; gross inland consumption - solid fossil fuels	Eurostat	modelling output
	Oil	ktoe	34690	33351	30364	27786	31400	31535	31336	30800	23710	10908	KEV2022; TNO 2023; gross inland consumption - oil and petroleum products	Eurostat	modelling output
	Natural gas	ktoe	35325	40066	28629	31438	23630	20389	19372	18239	11573	28461	KEV2022; TNO 2023; gross inland consumption - natural gas	Eurostat	modelling output
	Nuclear	ktoe	1031	917	937	956	1017	873	0	0	0	0	KEV2022; TNO 2023; gross inland consumption - nuclear heat	Eurostat	modelling output
	Electricity	ktoe	1573	239	752	-229	-1237	-2142	-3366	-2421	-2422	-2422	KEV2022; TNO 2023; gross inland consumption - electicity	Eurostat	modelling output
	Renewable energy forms	ktoe	2270	3315	3715	6781	11398	15040	17420	18398	26188	28932	KEV2022; TNO 2023; gross inland consumption - renewables, including biowaste and biofuels	Eurostat	modelling output
	Other	ktoe	718	725	797	790	702	702	702	702	743	707	KEV2022; TNO 2023; gross inland consumption - non-renewable waste	Eurostat	modelling output
2.2. Electricity and heat															
1	**Gross electricity generation**	GWhe	99661	119115	108784	123041	136877	155189	180879	194946	230255	249036		Eurostat	modelling output
2	**By fuel**														
	Nuclear energy	GWhe	3997	3969	4078	4087	4000	3434	0	0	0	0		Eurostat	modelling output
	Solids	GWhe	23500	22588	39391	7605	17667	0	0	0	0	0		Eurostat	modelling output
	Oil (including refinery gas)	GWhe	2262	1253	1314	1340	1557	2020	1794	1802	420	676	oil and petroleum products	Eurostat	modelling output
	Gas (including derived gases)	GWhe	57599	75333	45853	72662	33945	28644	29142	35080	17506	26126	Natural gas	Eurostat	modelling output
	Biomass-waste	GWhe	1266	1763	1981	2193	1856	1539	1448	1443			renewable municipal waste	Eurostat	modelling output
	Hydro (pumping excluded)	GWhe	88	105	93	46	113	114	114	113				Eurostat	modelling output
	Wind	GWhe	2067	3993	7550	15339	42304	91671	113356	113655				Eurostat	modelling output
	Solar	GWhe	35	56	1109	8765	20560	23437	31639	39490				Eurostat	modelling output
	Geothermal and other renewables	GWhe	3991	5279	2940	6654	10272	1913	2024	2005			primary solid biofuels, other liquid biofuels, biogas, geothermal	Eurostat	modelling output
	Other fuels (hydrogen, methanol)	GWhe	4856	4776	4477	4349	4603	2419	1362	1358	2265	2885	Manufactured gases. Non-renewable waste	Eurostat	modelling output
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**	**%**	58%	55%	39%	41%	26%	16%	14%	12%				Eurostat	modelling output
	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)	**%**	72%	84%	86%	81%	84%	71%	67%	64%				Eurostat	modelling output
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**	22,0	26,6	32,2	43,1	57,6	67,3	82,2	92,73				CBS	modelling output
	Nuclear energy	**GW**	0,4	0,5	0,5	0,5	0,5	0,5	0,0	0,00				CBS	modelling output
	Solids	**GW**	4,91	4,91	5,76	4,12	4,06	0,00	0,00	0,00			Coal plant capacity	CBS	modelling output
	Oil (including refinery gas)	**GW**													
	Gas (including derived gases)	**GW**	13,26	16,61	18,47	18,20	17,19	16,56	18,11	20,53			Including refinery gases for projections.	CBS	modelling output
	Biomass-waste	**GW**	0,50	0,79	0,89	0,44	0,61	0,59	0,60	0,59				CBS	modelling output
	Hydro (pumping excluded)	**GW**	0,04	0,04	0,04	0,04	0,04	0,04	0,04	0,04				CBS	modelling output
	Wind	**GW**	1,22	2,24	3,39	6,62	11,90	23,20	28,29	28,32				CBS	modelling output
	Solar	**GW**	0,05	0,09	1,53	10,95	22,66	25,75	34,44	42,58				CBS	modelling output
	Geothermal and other renewables	**GW**													
	Other fuels (hydrogen, methanol)	**GW**													
5	**Heat generation from thermal power generation**	**Gwhe > PJ**	178	160	120	93	67,44	58,44	55,60	54,13			gross heat production	Eurostat	modelling output
6	Heat generation from combined heat and power plants, including industrial waste heat	**Gwhe > PJ**	129	135	104	76	56,92	41,25	37,20	34,70			CHP heat production from main activity producer and autoproducer	Eurostat	modelling output
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]**														
	Germany	MW					4500 (5000)	5000	5000	5000			PBL/CBS (in brackets outbound capacity, where different from inbound)	Tennet	Assumption
	Belgium	MW					2720	3400	4400 (4100)	4400 (4100)			PBL/CBS (in brackets outbound capacity, where different from inbound)	Tennet	Assumption
	Denmark	MW					700	700	700	700			PBL/CBS	Tennet	Assumption
	UK	MW					1000	1000	3000	3000			PBL/CBS	Tennet	Assumption
	Norway	MW					700	700	700	700			PBL/CBS	Tennet	Assumption
2.3. Transformation sector															
1	Fuel Inputs to Thermal Power Generation	ktoe	22411	23925	22151	20662	19231	17869	19273	20723	1157	2232	totals include renewables, non-renewable waste, nuclear heat derived heat.	Eurostat	modelling output
	Solids	ktoe	4958	4669	8040	1525	3056	0	0	0	0	0	solid fossil fuels	Eurostat	modelling output
	Oil	ktoe	1418	648	643	434	262	343	305	307	0	0	oil and petroleum products	Eurostat	modelling output
	Gas	ktoe	12483	14407	8811	11915	5626	4365	4123	4923	1157	2232	manufactured gases and natural gas	Eurostat	modelling output
2	**Fuel Input to other conversion processes**	ktoe	89329	89089	95922	95880	67966	62966	57817	54306	24016	19729	Transformation input total -el. & heat generation	Eurostat	modelling output
2.4. Energy consumption															

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Version 13 June 2023

			Statistics				Projections								
		Unit	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**	**2045**	**2050**	**Comments MS**	**Source statistics**	**modelling output or exogenous assumption?**
1	**Primary energy consumption**	**ktoe**	70106	71719	63900	58383	59468	53775	51382	50822			Europe 2020-2030 definition	Eurostat	modelling output
1	**Final energy consumption**	ktoe	48955	50750	43499	42246	42293	40481	39895	39520	51794	55046	Final energy consumption	Eurostat	modelling output
2	***by sector***														
	Industry	ktoe	15640	14419	12929	13102	13638	12771	12915	13003	11309	16167		Eurostat	modelling output
	Residential	ktoe	10738	12480	9547	9312	9006	8883	8836	8749	8203	8201		Eurostat	modelling output
	Tertiary	ktoe	6943	7847	6729	6466	5848	5721	5808	5963	5310	5467	commercial and public services	Eurostat	modelling output
	Transport	ktoe	11379	11657	10406	9299	10429	9860	9238	8579				Eurostat	modelling output
	Agriculture	ktoe	3880	4019	3613	3818	3220	3093	2946	3073	2845	2799	agriculture & forestry	Eurostat	modelling output
	Other	ktoe	376	329	275	247	152	152	152	152			mainly fishery	Eurostat	modelling output
	By transport activity, when available														
	Passenger transport	ktoe													
	Freight transport	ktoe													
3	***by fuel***														
	Solids	ktoe	67	115	190	173	122	139	153	153	26	301	final energy consumption_solid fossil fuels	Eurostat	modelling output
	Oil	ktoe	14907	15271	13711	12686	12915	12278	11794	10826	24038	17589	oil and petroleum products	Eurostat	modelling output
	Gas	ktoe	20507	22022	17076	16086	15645	13447	12599	12149	10221	14333	manufactured gases + natural gas	Eurostat	modelling output
	Electricity	ktoe	8977	9265	8929	9378	9435	10200	11146	12123	9126	10483		Eurostat	modelling output
	Heat	ktoe	3849	3000	2258	1902	1465	1281	1214	1179	280	1089	Derived heat	Eurostat	modelling output
	Renewable energy forms	ktoe	602	1020	1300	1984	2675	3098	2951	2962	8090	10431	renewables and biofuels, excluding ambient heat	Eurostat	modelling output
	Other	ktoe	46	58	36	37	34	36	35	35			non renewable waste	Eurostat	modelling output
4	**Final non energy consumption**	**ktoe**	13579	14370	12232	12936	13103	13623	14153	14807	19588	20211		Eurostat	modelling output
5	**Primary energy intensity of the economy**	**ktoe/million euro**	0,11	0,11	0,09		0,07	0,06	0,05	0,05			Primary energy consumption divided by GDP		calculation
6	**Final energy intensity by sector**														
	Industry	**ktoe/million euro of value added**	0,18	0,16	0,15		0,14	0,13	0,12	0,12					calculation
	Residential	toe/euro of value added													
	Tertiary	toe/euro of value added													
	Passenger transport	toe/million pkm													
	Freight transport	toe/million tkm													
2.5. Prices															
1	**Electricity prices by type of using sector (residential, industry, tertiary)**														
	residential	euro/MWh	226	221	213	160	259	230	240	257,03			Euro 2016 prices	CBS	modelling output
	industry	euro/MWh	123	126	113	117	184	161	168	178,75			Euro 2016 prices - Not available on overarching sectoral level, based on average of 3 industrial sectors (iron and steel industry, chemical industry and 'other industry')	CBS	modelling output
	tertiary	euro/MWh	156	157	146	155	223	199	206	216,28			Euro 2016 prices - Not available on overarching sectoral level; figures based on average of 4 tertiary sectors (Trade and hospitality, Other business services, Government and education, Other non-profit)	CBS	modelling output
2	**National retail fuel prices (including taxes, per source and sector)**														
	Diesel oil	**euro/ktoe**		1,39	1,34	1,25	1,74	1,78	1,78	1,83			EUR 2021/ liter (including taxes, not disaggregated per sector)		
	Industry	euro/ktoe													
	Households	euro/ktoe													
	Transport private	euro/ktoe													
	Transport public	euro/ktoe													
	Gasoline	**euro/ktoe**		1,79	1,70	1,58	2,02	2,06	2,06	2,10			EUR 2021/ liter (including taxes, not disaggregated per sector)		
	Transport private	euro/ktoe													
	Transport public	euro/ktoe													
	Natural gas	**euro/ktoe**													
	Industry	euro/ktoe	0,36	0,37	0,40	0,35	0,48	0,44	0,47	0,45			EUR 2021/m3 - Not available on overarching sectoral level, based on average of 3 industrial sectors (iron and steel industry, chemical industry and 'other industry')	CBS	Assumption
	Households	euro/ktoe	0,69	0,74	0,79	0,84	1,55	1,42	1,42	1,42			EUR 2021/m3	CBS	Assumption
2.6. Investments															
	Energy-related investment costs for overall economy	% of GDP												CBS	calculation
	Energy related investmentts 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**														

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.

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

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

Version 13 June 2023

			Statistics				Projections								
		Unit	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	Comments MS	Source statistics	modelling output or exogenous assumption?
	RES in Gross Final Energy Consumption	**%**	2,5	3,9	5,7	14,0	20,5	30,5	38,3	44,6				Eurostat	modelling output
	RES-H&C share	%	2,4	3,1	5,3	8,1	10,1	13,7	15,8	20,9				Eurostat	modelling output
	RES-E share	%	6,3	9,6	11,0	26,4	59,6	86,2	106,5	95,5			Projections assumes eventual greater total production than total usage, and thus a level of export	Eurostat	modelling output
	RES-T share	%	0,5	3,4	5,6	12,6							Projections are currently only available separately for biofuels in transport, which does not cover the entire RES-T share.	Eurostat	modelling output
	Wind offshore	%	0,0	0,1	0,2	0,9	4,1	11,7	18,1	17,5				CBS	modelling output
	Wind onshore	%	0,3	0,6	1,0	1,7	3,1	4,4	4,3	4,6				CBS	modelling output
	Solar photovoltaic systems	%	0,0	0,0	0,2	1,6	3,7	4,5	6,2	7,7				CBS	modelling output
	Solar heat systems	%	0,0	0,0	0,1	0,1	0,1	0,1	0,1	0,1				CBS	modelling output
	Biomass	%	2,1	3,0	3,9	6,2	8,0	7,0	5,6	10,0				CBS	modelling output
	Geothermal systems	%	0,0	0,0	0,1	0,3	0,4	0,8	1,2	1,5				CBS	modelling output
	Heat pumps	%	0,0	0,1	0,3	0,7	1,2	2,0	2,8	3,1				CBS	modelling output
	Hydro + osmose	%	0,0	0,1	0,0	0,0	0,0	0,0	0,0	0,0				CBS	modelling output
	(final consumption of renewable energy in transport as contribution to overall target	%													
	Contribution of biofuels and biogas produced from feedstock listed in part A of Annex IX and consumed in transport	%													
	Contribution of biofuels and biogas produced from feedstock listed in part B of Annex IX and consumed in transport	%													
	Contribution from biofuels, bioliquids and biomass fuels consumed in transport, produced from food or feed crops	%													
	Contribution of other biofuels and consumed in transport	%													
	Gross final consumption of RES for heating and cooling	ktoe	722	971	1368	2019	2515	3068	3399	4436				CBS	modelling output
	Gross final consumption of electricity from RES	ktoe	640	1008	1131	2745	6280	9651	12979	13701				CBS	modelling output
	Gross final consumption of energy from RES in transport	ktoe	2	229	300	563	965	1006	470	303				CBS	modelling output
	Total Gross final consumption of RES	ktoe	1365	2207	2799	5327	9760	13725	16848	18441				CBS	modelling output
	Gross final consumption of waste heat and cold for heating and cooling	ktoe													
	Waste heat and cold share in gross final consumption for heating and cooling	%													
	Gross final consumption of RES from district heating and cooling	ktoe													
	RES share from district heating and cooling in gross final consumption for heating and cooling	%													
	Gross final consumption of waste heat and cold from district heating and cooling	ktoe													
	Waste heat and cold share from district heating and cooling in gross final consumption for heating and cooling	%													
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)**														
	solar photovoltaic systems - produced	**ktoe**	3	5	95	754	1768	2015	2721	3396			Gross final energy consumption photovoltaic, incl solar plants	CBS	modelling output
	solar thermal systems - produced	**ktoe**	17	24	27	28	30	33	36	39			Gross final energy consumption solar thermal	CBS	modelling output
	biomass - produced	**ktoe**	368	402	393	380	378	378	378	378			Gross final energy consumption wood stoves	CBS	modelling output
	heat pumps - produced	**ktoe**	5	21	40	145	291	507	758	892			Gross final energy consumption- ground and air source heat pumps in dwellings	CBS	modelling output
	geothermal systems - produced	**ktoe**	0	8	58	148	193	380	528	675			Gross final energy consumption, geothermal (all sectors)	CBS	modelling output
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])**														
3. GHG emissions and removals related indicators															
1	**GHG emissions by policy sector (EU ETS, Effort Sharing Regulation and LULUCF)**	**tCO2eq**	218759980	218511114	199267845	169723660	161971424	124272108	115893183	108781841			Including LULUCF and indirect emissions, WEM (AR5). Please note: Projections are made by the Netherlands Environmental Assessment Agency (PBL) which is an independent public agency. For their projections (and other assessments) they always use the most recent data available. The projections submitted were based on the Netherlands Climate and Energy Outlook 2022 (KEV, November 2022), which was predicated upon the NIR2022 as the NIR2023 was not yet available. These sources were also used in reporting under the Governance Regulation (art. 18) in March 2023. To maintain consistency with the projections, historical values are therefore given in line with the NIR 2022 (not the NIR 2023).	NIR2022/KEV2022	modelling output
	ETS sector emissions	tCO2eq	80380000	84687937	94068918	74089444	70362741	41122628	37977051	36857596				NIR2022/KEV2022	modelling output
	Effort Sharing sector GHG emissions	tCO2eq	133222451	128603105	100174882	91398397	87674640	79491818	74831845	69004288				NIR2022/KEV2022	modelling output

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Version 13 June 2023

			Statistics				Projections								
		Unit	2005	2010	2015	2020	2025	2030	2035	2040	2045	2050	Comments MS	Source statistics	modelling output or exogenous assumption?
	LULUCF (accounted according to EU legislation requirements)	tCO2eq	5157529	5220072	5024045	4235819	3934042	3657661	3084287	2919956				NIR2022/KEV2022	modelling output
2	**GHG emissions by IPCC sector and by gas (where relevant split into EU ETS and Effort Sharing sectors).**	**tCO2eq**	***Please use for reporting on GHG emissions by IPCC sector and gas the same excel template as used for reporting on Annex XII to Commission Implementing Regulation (EU) 749/2014 (IPArticle23_table1), next due 15/3/2019. It is provided as separate file.***										*see GHG template*		
3	**Carbon intensity of the overall economy**	**tCO2eq/GDP**	352	329	289	233	194	140	124	110			GHG emissions divided by GDP		Calculation
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													
	Residential	tCO2eq/toe													
	Tertiary	tCO2eq/toe													
	Passenger tranport	tCO2eq/toe													
	Freight transport	tCO2eq/toe													
5	**Non-CO2 GHG emission related parameters**														
a	**Livestock**														
	dairy cattle	1000 heads	2588	2725	2965	2534	2507	2450	2393	2335			Dairy young stock + dairy cows;	CBS	assumption
	non-dairy cattle	1000 heads	1209	1250	1169	1185	1179	1179	1179	1179				CBS	assumption
	pigs	1000 heads	6749	7131	7005	6447	5841	5841	5841	5841			Excl. piglets	CBS	assumption
	sheep	1000 heads	1698	1924	2005	1531	1087	1087	1087	1087			Other livestock	CBS	assumption
	poultry	1000 heads	91726	99880	104760	96431	94101	94101	94101	94101				CBS	assumption
b	**Nitrogen input from application of synthetic fertilizers**	**kt nitrogen**	280	222	268	244	188	186	182	178				CBS	assumption
c	**Nitrogen input from application of manure**	**kt nitrogen**	288	293	307	314	302	296	291	284			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**													
f	**Area of cultivated organic soils**	**hectares**													
g	**Municipal solid waste (MSW) generation**	**t**													
h	**Municipal solid waste (MSW) going to landfills**	**t**													
i	**Share of CH4 recovery in total CH4 generation from landfills**	**%**													