Poland

Poland's energy and climate targets are mainly found in the Integrated National Energy and Climate Plan (NECP) and the Energy Policy of Poland until 2040 (EPP 2040). Poland have set concrete targets for some parts of the build-out of renewable energy, but its ambition level is rather low.

Targets

Poland's main target is a 35% reduction in emissions from 1990-levels by 2030.[1] Poland also aims to achieve a 29.8% share of renewable energy sources in the gross final energy consumption by 2030.[2] For electricity production, the estimate is 50.1%.[3] One of the most marked goals of the Polish energy plan, is to build out nuclear power capacity. The first powerplant is expected to come online in 2033, with a capacity of 1-1.6 GW.[4] The target is 6-9 GW of capacity by 2043.[5] For offshore wind, the expectation is 5.9 GW by 2030 and by 2040 it is projected to be 11 GW.[6] Onshore wind is projected to grow, but it will slow significantly because of lower acceptance.[7] There are no specific targets for onshore wind. Solar will increase, and the government expects there to be installed 5-7 GW by 2030 and 10-16 by 2040.[8]

Energy demand projections

Poland will aim to achieve a 12.8% reduction in final energy consumption in 2030 compared to the PRIMES2020[9] projections.[10] The aim for reduction in primary energy is 14.4%.[11] According to the 'With Existing Measures,' WEM, scenario, Poland will reduce its final energy consumption by 3 000 ktoe from 2020 to 2030.[12] Gross final electricity consumption is found in Table 1. A more detailed energy breakdown is found in Table 2.

[1] The Government of Poland, 'National Energy and Climate Plan Poland', 13–14.
[2] The Government of Poland, 'National Energy and Climate Plan Poland', 16.
[3] The Government of Poland, 'National Energy and Climate Plan Poland', 18.
[4] Energy Policy of Poland until 2040 (EPP2040), 24.
[5] Energy Policy of Poland until 2040 (EPP2040), 56.
[6] Energy Policy of Poland until 2040 (EPP2040), 63.
[7] Energy Policy of Poland until 2040 (EPP2040), 63.
[8] Energy Policy of Poland until 2040 (EPP2040), 63.
[9] The PRIMES2020 is a projected scenario for energy consumption which the EU uses to set targets (The Government of Poland, 49). This is also called the EU Reference Scenario in other countries NECP.
[10] The Government of Poland, 'National Energy and Climate Plan Poland', 50.
[11] The Government of Poland, 'National Energy and Climate Plan Poland', 52.
[12] The Government of Poland, 'National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 57.

Table 1: Gross final electricity consumption (ktoe) [WEM][13]

	2020	**2025**	**2030**
Gross final electricity consumption	14 660 ktoe	15 892 ktoe	17 025 ktoe

Table 2: Energy demand projection by industry (ktoe) [WEM][14]

	Sub-category	**2020**	**2025**	**2030**
Industry	-	15 921 ktoe	16 002 ktoe	15 391 ktoe
Transportation	*Total*	21 779 ktoe	23 494 ktoe	21 831 ktoe
	Passengers	11 002 ktoe	12 242 ktoe	10 879 ktoe
	Freight	10 695 ktoe	11 168 ktoe	10 865 ktoe
	Special vehicles	82 ktoe	84 ktoe	86 ktoe
Households	-	21 101 ktoe	18 864 ktoe	17 750 ktoe
Services	-	7 565 ktoe	8 170 ktoe	8 401 ktoe
Agriculture	-	3 869 ktoe	3 640 ktoe	3 473 ktoe
Total	-	70 235 ktoe	70 171 ktoe	66 845 ktoe
Revised total[A]	-	**71 145 ktoe**	**75 978 ktoe**	**58 532 ktoe**
Primary energy consumption[B]	-	102 979 ktoe	100 967 ktoe	94 993 ktoe
Final energy consumption[B]	-	70 257 ktoe	70 171 ktoe	66 845 ktoe
Electricity[C]	-	11 806 ktoe	12 821 ktoe	13 687 ktoe
Hydrogen[C]	-	0 ktoe	6 ktoe	49 (66)[D] ktoe

A: This is found in the 'Integrated National Energy and Climate Plan Poland', 50-53.

B: The Government of Poland, 'Integrated National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 56.

C: The Government of Poland, 'Integrated National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 58.

D: Non-energy use in parenthesis, The Government of Poland, 'Integrated National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 59.

[13] The Government of Poland, 'National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 51.

[14] The Government of Poland, 'National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 57.

Transportation

Poland's definition of transport sector explicitly includes rail, aviation, and maritime transport.[15] For transportation, Poland estimates that as much as 17.7% of the energy demand in 2030 could be produced by renewables.[16] It is also estimated that by 2030 1.5 GW of recharging infrastructure for light-duty vehicles will be installed. This is based on estimations for the uptake of EVs and plug-in hybrids.[17] The estimations also forecast that by 2030, 1.46 million electric and plug-in hybrid vehicles could be registered in Poland.[18] This is further broken down in Table 3. There are also plans to further electrify the railways.[19] Estimates of the electricity and Renewable Fuels of Non-Biological Origin (RFNBO) consumption from transport is given in Table 4 below according to the WEM-scenario.

Table 3: Low-emission vehicle projections[20]

	Sub-type	**Projections 2030[A]**
Light-duty (LD) vehicles	*Full-electric*	800 000
	Plug-in hybrids	650 000
	Hydrogen	5 000
	Total LD	1 455 000
Heavy-duty (HD) vehicles	*Electric*	6 050
	Hydrogen	950
	Total HD	7000
Total electric	-	1 460 000
Total hydrogen	-	6 000

A: These are rough numbers, most being slightly more than the number, so the total does not add up.

[15] The Government of Poland, 'National Energy and Climate Plan Poland', 27.
[16] The Government of Poland, 'National Energy and Climate Plan Poland', 28.
[17] The Government of Poland, 'National Energy and Climate Plan Poland', 29.
[18] The Government of Poland, 'National Energy and Climate Plan Poland', 29.
[19] The Government of Poland, 'National Energy and Climate Plan Poland', 31.
[20] The Government of Poland, 'National Energy and Climate Plan Poland', 29.

Heat pumps

Poland will increase the amount of installed heat pumps. There are also plans for financial incentives to achieve this.[21] However, there are no targets for installed units or electricity demand.

Hydrogen and batteries

There is a stated aim to produce between 2 and 4 GW of hydrogen from renewable sources by 2030.[22] Development of battery storage is mentioned,[23] but there are no concrete targets.

Table 4: Energy consumption in transport (ktoe) [WEM][24]

	2005	**2010**	**2015**	**2020**	**2025**	**2030**
Electricity	54 ktoe	53 ktoe	72 ktoe	88 ktoe	98 ktoe	272 ktoe
RFNBO	0 ktoe	0 ktoe	0 ktoe	0 ktoe	6 ktoe	45 ktoe
RES electricity road	0 ktoe	0 ktoe	1 ktoe	2 ktoe	16 ktoe	95 ktoe
RES electricity rail	48 ktoe	47 ktoe	65 ktoe	80 ktoe	78 ktoe	170 ktoe
RES electricity pipe	6 ktoe	6 ktoe	7 ktoe	6 ktoe	4 ktoe	8 ktoe

[21] The Government of Poland, 'National Energy and Climate Plan Poland', 96–97.
[22] Energy Policy of Poland until 2040 (EPP2040), 23.
[23] The Government of Poland, 'National Energy and Climate Plan Poland', 75.
[24] The Government of Poland, 'National Energy and Climate Plan Poland Annex 1 WEP Transition Scenario', 52.