



BP Energy Outlook

Country and regional insights – European Union¹

We project that the EU's energy demand will decline by 11% through the outlook; this contrasts with the last 20 years through which demand has been broadly flat

Fast facts

1. As EU demand falls its share of global energy demand will decline from 12% in 2016 to 8% in 2040.
2. By 2040 carbon emissions will be 50% below the level of 1990, declining at -1.9% p.a. during 2016-40.
3. The EU's energy mix continues to evolve, with renewables' share increasing to 27% in 2040, from 9% in 2016.

-11%

Growth in EU energy consumption

8%

Share of global energy consumption in 2040

-5%

Decline in EU energy production

4%

Share of global energy production in 2040

- Energy consumption declines by 11% while production declines by 5% between 2016 and 2040. The EU is only region to see both a decline in consumption and production.
- The power sector will become increasingly important as it accounts for 50% of energy consumption by 2040.
- The EU's energy mix continues to evolve with coal and oil dropping from a combined share of 51% in 2016 to 32% by 2040. The share of natural gas increases from 24% to 27%.
- The decline in demand for fossil fuels is offset by a rise in renewables which increases their share from 9% in 2016 to 27% by 2040 and hydro from 5% to 6%.
- The growth in renewables is driven by wind (4.8% p.a.) and solar (4.9% p.a.). By 2040, the EU will meet 15% of its energy demand by wind, with solar and biomass accounting for 5% each. Biofuels will account for less than 1% of demand.
- The sectorial mix of energy demand changes very little with declines in all end sectors: transport (-0.8% p.a.), industry (-0.7% p.a.), non-combusted industry (-0.9% p.a.) and buildings (-0.1% p.a.).
- Nuclear decreases by -1.5% p.a. from 2016 to 2040. The EU's share of global nuclear generation will halve to less than 15% by 2040.
- Oil and gas production in the EU will fall by over 60% by 2040. In 2040 the EU will produce less than 1 Mb/d.
- Oil import dependence rises from 85% in 2016 to 92% in 2040. Gas dependence will rise from 72% to 89%. Oil imports will fall to 7 Mb/d, while gas imports will rise to 37 Bcf/d by 2040.
- Energy intensity (the amount of energy required per unit of GDP) declines by 34% 2016-40.
- Carbon emissions will continue to fall, with emissions in 2040 at 50% of the 1990 levels. The EU will see largest decline across any region.

¹Includes all European Union member states as of 2016



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	Level		Shares		Change (abs.)		Change (%)		Change (annual)*	
	2016	2040	2016	2040	1990-2016	2016-2040	1990-2016	2016-2040	1990-2016	2016-2040
Primary energy consumption (units in Mtoe unless otherwise noted)										
Total	1642	1460			-30	-182	-2%	-11%	-0.1%	-0.5%
Oil† (Mb/d)	13	8	37%	26%	-1	-5	-9%	-37%	-0.4%	-1.9%
Gas (Bcf/d)	41	42	24%	27%	9	0	29%	1%	1.0%	0.0%
Coal	238	85	15%	6%	-219	-154	-48%	-64%	-2.5%	-4.2%
Nuclear	190	132	12%	9%	10	-58	6%	-31%	0.2%	-1.5%
Hydro	79	84	5%	6%	13	5	19%	7%	0.7%	0.3%
Renewables (including biofuels)	149	388	9%	27%	145	239	>1000%	160%	>10%	4.1%
Transport^	405	335	25%	23%	87	-70	27%	-17%	0.9%	-0.8%
Industry^	563	480	34%	33%	-151	-83	-21%	-15%	-0.9%	-0.7%
Non-combusted^	78	63	5%	4%	-17	-15	-18%	-19%	-0.7%	-0.9%
Buildings^	595	581	36%	40%	51	-15	9%	-2%	0.3%	-0.1%
Power	689	730	42%	50%	59	41	9%	6%	0.3%	0.2%
Production										
Oil† (Mb/d)	2	1			-1	-1	-39%	-64%	-1.9%	-4.1%
Gas (Bcf/d)	11	5			-6	-7	-35%	-60%	-1.6%	-3.7%
Coal	134	34			-241	-100	-64%	-75%	-3.9%	-5.5%

*Compound annual growth rate

†Oil supply includes crude oil, shale oil, oil sands, natural gas liquids, liquid fuels derived from coal and gas, and refinery gains, but excludes biofuels. Oil demand includes consumption of all liquid hydrocarbons, but excludes biofuels.

^Includes electricity and the associated conversion losses in power generation.



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