

# BP Energy Outlook

## Country and regional insights – Global

Global energy consumption grows by around one-third over the Outlook; energy intensity falls faster than at any time since at least 1965, and the energy mix shifts towards lower carbon fuels

### Fast facts

1. Renewables are the fastest growing fuel source, quintupling over the Outlook. Even so, oil and gas still account for more than half of global energy in 2040.
2. Coal demand peaks, with its share of primary energy falling to 21% by 2040.
3. Natural gas replaces coal as the second largest source of energy, behind oil.

## +1.3%

Annual growth in global energy consumption

## 43%

Renewables contribution to global primary energy growth

## -37%

Decline in energy use per unit of GDP

## +10%

Growth in global CO<sub>2</sub> emissions from energy use

- World energy demand is projected to grow by 1.3% p.a. from 2016 to 2040. All of this growth comes from emerging economies, with China and India each accounting for over a quarter the increase.
- Global energy intensity (the ratio of energy demand to GDP) is projected to decline by 1.9% p.a. over this period – faster than in any 25-year period since our data began in 1965.
- Half of the growth in energy consumption comes from industrial uses (combusted and non-combusted); just over a third from buildings; and about a sixth from transport.
- Renewables provide 43% of the growth in energy over the Outlook; their share in primary energy rises from 4% today to 14% by 2040.
- Solar (+11.1% p.a.) and wind (+6.9% p.a.) are the fastest growing sources of energy. Their combined share of global power generation increases from 5% to 21% by 2040.
- Gas (+1.6% p.a.) overtakes coal to become the second-largest global energy source by 2025.
- Oil (+0.5% p.a.) remains the leading global fuel but plateaus from around 2030. Coal demand peaks in the mid-2020s, leaving the level of coal use in 2040 barely 1% higher than in 2016.
- Global oil demand increases by around 11 Mb/d to reach 105 Mb/d by 2040. The growth of demand is roughly equally split between the transport sector and non-combusted uses.
- Global oil production becomes geographically more concentrated as low-cost producers gain share. The Middle East, US, and Russia account for 69% of oil production in 2040, up from 60% in 2016.
- Unconventional gas accounts for more than half of the growth in global gas supplies over the Outlook and almost a third of global gas supplies by 2040.
- Liquefied natural gas more than doubles over the Outlook, overtaking gas shipped inter-regionally by pipeline.
- CO<sub>2</sub> emissions from energy use continue to grow, rising by 10% by 2040.



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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	13,276	17,983			5134	4707	63%	35%	1.9%	1.3%
Oil† (Mb/d)	94	105	33%	27%	28	11	42%	12%	1.4%	0.5%
Gas (Bcf/d)	342	502	24%	26%	152	161	80%	47%	2.3%	1.6%
Coal	3,732	3,762	28%	21%	1486	30	66%	1%	2.0%	0.0%
Nuclear	592	912	4%	5%	139	320	31%	54%	1.0%	1.8%
Hydro	910	1,241	7%	7%	423	331	87%	36%	2.4%	1.3%
Renewables (including biofuels)	502	2,527	4%	14%	467	2025	>1000%	404%	>10%	7.0%
Transport^	2,662	3,398	20%	19%	1194	735	81%	28%	2.3%	1.0%
Industry^	5,965	7,843	45%	44%	2222	1877	59%	31%	1.8%	1.1%
Non-combusted^	809	1,277	6%	7%	340	468	73%	58%	2.1%	1.9%
Buildings^	3,840	5,466	29%	30%	1378	1626	56%	42%	1.7%	1.5%
Power	5,584	8,814	42%	49%	2614	3231	88%	58%	2.5%	1.9%
Production										
Oil† (Mb/d)	96	105			29	9	44%	10%	1.4%	0.4%
Gas (Bcf/d)	343	503			152	160	80%	47%	2.3%	1.6%
Coal	3,691	3,775			1411	84	62%	2%	1.9%	0.1%

\*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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