



bp Energy Outlook – 2024

Insights from emerging economies – excluding China

Energy demand growth depends on the pace of the energy transition, with demand growing to 2050 in **Current Trajectory** but declining in **Net Zero**. Under both scenarios, the energy system electrifies

1. By 2050, electricity accounts for about 25% of energy demand in **Current Trajectory** and 50% in **Net Zero**
2. Total fossil fuel demand falls by 60% between 2022 and 2050 in **Net Zero** but continues to increase in **Current Trajectory**
3. The share of solar and wind in electricity generation grows to 33% in **Current Trajectory** and about 75% in **Net Zero** by 2050

23% to 56%

share of renewables in primary energy in 2050

33% to 75%

share of solar and wind in electricity generation by 2050

2.4x to 3.5x

growth in electricity generation to 2050

+20% to -85%

net change in CO₂e emissions between 2022 and 2050

- ▶ GDP in emerging economies (excluding China) grows at a rate of 3.2% a year in 2022-50, almost triple the growth rate of developed economies.
- ▶ Energy demand continues to grow in **Current Trajectory** driven by increasing prosperity and living standards. Demand peaks in **Net Zero** in the early 2030s as energy efficiency impacts dominate. By 2050, emerging economies (excluding China) account for about half of the world's energy demand in both scenarios.
- ▶ Renewables expand over the outlook, with their share in primary energy increasing from 17% in 2022 to 23-56% by 2050.
- ▶ Electricity generation more than triples in **Net Zero** and more than doubles in **Current Trajectory**.
- ▶ Oil demand falls from 39 Mb/d in 2022 to 16 Mb/d in 2050 in **Net Zero**. Oil demand increases instead by about 10% in **Current Trajectory**.
- ▶ Natural gas demand grows by about 50% between 2022 and 2050 in **Current Trajectory**, accounting for the entire growth in global gas demand over the outlook. This is driven by increasing use in power and industrial sectors. The shift to electrification and lower carbon fuels limits the growth of natural gas in **Net Zero**, with demand in 2050 about 50% lower relative to 2022 levels.
- ▶ The share of coal demand in primary energy decreases significantly in **Net Zero**, from about 20% in 2022 to roughly 5% in 2050. The share stays relatively flat in **Current Trajectory**.
- ▶ Traditional biomass is largely phased out by 2050 in **Net Zero**, as access to electricity and clean cooking fuels increases. Its use is more persistent in **Current Trajectory**, with traditional biomass use peaking in the early 2040s and reaching 24 EJ in 2050.
- ▶ Carbon emissions fall by around 85% in **Net Zero** relative to 2022 levels, reaching 2.5 Gt of CO₂e in 2050. They grow instead in **Current Trajectory**, reaching 20Gt of CO₂e in 2050, accounting for two-thirds of global emissions.



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	Level in 2050			2022	Shares in 2050 (%)		Change 2022-2050 (% p.a.)	
	2022	Current Trajectory	Net Zero		Current Trajectory	Net Zero	Current Trajectory	Net Zero
Primary energy consumption by energy type (EJ)								
Total	240	345	218	100%	100%	100%	1.3%	-0.3%
Oil†	77	84	30	32%	24%	14%	0.3%	-3.3%
Natural gas	69	106	34	29%	31%	16%	1.5%	-2.5%
Coal	45	62	12	19%	18%	5.5%	1.1%	-4.6%
Nuclear	1.6	3.2	6.1	0.6%	0.9%	2.8%	2.7%	5.0%
Hydro	6.4	10	15	2.7%	3.0%	6.7%	1.7%	2.9%
Renewables (incl. biofuels)	41	79	121	17%	23%	56%	2.4%	4.0%
Primary energy consumption (native units)								
Oil† (Mb/d)	39	44	16					
Natural gas (Bcm)	1,929	2,943	940					
Total final consumption by sector (EJ)								
Total	198	292	195	100%	100%	100%	1.4%	-0.1%
Transport	45	60	41	23%	20%	21%	1.0%	-0.4%
Feedstocks	13	23	17	6.5%	8.0%	8.7%	2.1%	1.0%
Buildings	56	80	41	28%	27%	21%	1.3%	-1.1%
Industry	84	129	97	43%	44%	50%	1.5%	0.5%
Generation								
Power (TWh)	9,329	22,659	32,820				3.2%	4.6%
Hydrogen (Mt)	30	64	169				2.8%	6.4%
Production								
Oil† (Mb/d)	63	56	24				-0.4%	-3.4%
Natural gas (Bcm)	2,297	2,977	1,030				0.9%	-2.8%
Coal (EJ)	53	64	15				0.6%	-4.4%
Emissions								
Carbon emissions†† (Gt of CO ₂ e)	16	20	2.5				0.7%	-6.4%
CCUS (Mt of CO ₂)	-0.7	-97	-2,802				19%	34%

EJ = exajoules

† 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. †† Carbon emissions include CO₂ emissions from energy use, industrial processes, natural gas flaring, and methane emissions from energy production.