



bp Energy Outlook – 2023

Insights from the Accelerated, Net Zero and New Momentum scenarios – Middle East

Oil and gas continue to play a significant role, both in terms of share of primary energy and share of global production, but renewable energy grows by more than three times the global average

1. Under all three scenarios, the Middle East’s primary energy consumption grows by over 20%
2. Renewable energy grows strongly in all scenarios, becoming the largest energy source in **Accelerated** and **Net Zero**
3. The Middle East continues its role as a major oil and gas producer, growing its share of global output in all scenarios

Over 20%

growth in primary energy in 2019-2050 under all scenarios

15% to 60%

share of renewables in primary energy in 2050

64% to 525%

growth in hydrogen generation in 2019-2050

-3% to -84%

net change in CO₂ emissions by 2050

- ▶ Primary energy grows steadily in the Middle East under all three scenarios, by just under 1% a year in 2019-2050, down from 4.2% a year over the past 20 years.
- ▶ Renewable energy is the fastest growing source of primary energy in the outlook in the Middle East, growing at a pace of 13-18% per year to 2050 across the scenarios, well above the global average rate of renewables growth. Its share in primary energy grows from less than 1% in 2019, to 15% by 2050 in **New Momentum**, 46% in **Accelerated** and 60% in **Net Zero**.
- ▶ Electricity generation more than doubles in all scenarios by 2050. Power grows its share in total final consumption, especially in the second half of the outlook, to between 23%-48% in 2050.
- ▶ Natural gas the largest source of primary energy in **New Momentum**, its share remaining above 50%, similar to levels seen over the past five years. In **Accelerated** and **Net Zero**, its share declines from the 2030s onwards, to 31% and 23% by 2050 respectively.
- ▶ The share of oil in primary energy declines across the scenarios, from 45% in 2019 to 11%-31% by 2050. The decline is fastest in **Accelerated** and **Net Zero**, driven mainly by faster decarbonization of the electricity sector in the first half of the outlook.
- ▶ The region’s shares of global oil and natural gas production increase in all three scenarios. In oil, its share nearly doubles in **Accelerated** and **Net Zero**, to around 60% by 2050, and increases to 45% in **New Momentum**.
- ▶ Hydrogen production grows for use in industry, transport and for export. Growth in production between 2019 and 2050 ranges from 64% in **New Momentum**, to a more than five-fold increase in **Net Zero**.
- ▶ Carbon emissions decline by just -0.1% per year in **New Momentum**, while in **Accelerated** and **Net Zero** they decrease by -2.8% and -5.7% per year respectively. The region accounts for around 10% of the carbon emissions sequestered into CCS globally in **Accelerated** and **Net Zero** in 2050.



bp Energy Outlook
2023 edition

bp Energy Outlook – 2023

Insights from the Accelerated, Net Zero and New Momentum scenarios – Middle East

	Level in 2050				2019	Shares in 2050 (%)			Change 2019-2050 (% p.a.)		
	2019	Accelerated	Net Zero	New Momentum		Accelerated	Net Zero	New Momentum	Accelerated	Net Zero	New Momentum
Primary energy consumption by fuel (EJ)											
Total	37	47	45	48	100	100	100	100	0.7	0.6	0.8
Oil†	17	9.0	5.0	15	45	19	11	31	-2.0	-3.9	-0.5
Natural gas	20	15	10	25	52	31	23	52	-0.9	-2.0	0.8
Coal	0.4	0.1	0	0.3	1.1	0.1	0.1	0.6	-5.5	-6.8	-1.2
Nuclear	0.1	1.2	2.2	0.6	0.2	2.7	4.9	1.2	10	12	7.9
Hydro	0.3	0.3	0.3	0.2	0.8	0.5	0.6	0.5	-0.5	-0.3	-0.7
Renewables (incl. biofuels)	0.2	22	27	7.3	0.4	46	60	15	17	18	13
Primary energy consumption (native units)											
Oil† (Mb/d)	8.8	5.2	3.0	8.1							
Natural gas (Bcm)	545	407	291	688							
Total final consumption by sector (EJ)											
Total	28	29	23	38	100	100	100	100	0.1	-0.7	0.9
Transport	8.2	6.5	4.8	7.8	29	22	21	21	-0.8	-1.7	-0.2
Feedstocks	3.8	4.3	3.3	5.1	13	15	14	14	0.4	-0.5	1.0
Buildings	6.1	7.5	6.1	9.5	21	26	27	25	0.7	0	1.4
Industry	10	11	8.9	15	37	37	39	41	0.1	-0.5	1.3
Generation											
Electricity (TWh)	1,234	3,575	4,225	2,551					3.5	4.1	2.4
Hydrogen (Mt)	8.1	37	50	13					5.0	6.1	1.6
Production											
Oil† (Mb/d)	30	25	14	34					-0.6	-2.6	0.3
Natural gas (Bcm)	678	577	441	918					-0.5	-1.4	1.0
Coal (EJ)	0	0	0	0					-10	-13	-5.5
Emissions											
Carbon emissions (Gt of CO ₂ e) ^{††}	2.7	1.1	0.4	2.6					-2.8	-5.7	-0.1
CCUS (Mt of CO ₂)	0	453	549	37							

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.