



# bp Energy Outlook – 2022

## 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 renewables grow by more than twice the global average rate

1. Under all three scenarios, Middle East's primary energy consumption grows by over 20%
2. Power generation more than doubles in all scenarios to 2050
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

### 16% to 60%

share of renewables in primary energy in 2050

### 2.5% to 4%

annual growth in power generation 2019-2050

### -1% to -86%

reduction in net CO<sub>2</sub>e emissions by 2050 relative to 2019

- ▶ Primary energy grows strongly in all three scenarios, with average growth per year in the range of 0.6%-0.9%.
- ▶ The production of hydrogen for use in industry and transport and for export grows considerably, particularly over the second half of the outlook in **Accelerated** and **Net Zero**. Annual growth in generation between 2010-2050 is 1.9% in **New Momentum** and 4.9%-5.9% in **Accelerated** and **Net Zero** respectively.
- ▶ The share of natural gas in primary energy initially grows in all three scenarios, from 52% in 2019. Its share in **New Momentum** is resilient, reaching 50% by 2050. In **Accelerated** and **Net Zero**, its share falls to 30% and 22% in 2050 respectively.
- ▶ Renewable energy growth is high in the three scenarios with average growth per year in the range of 13%-18%. As a result, renewable energy becomes the largest source of primary energy in 2050 in **Net Zero** and **Accelerated**, and the third largest in **New Momentum** after oil and natural gas. Renewable energy represents between 16% and 60% of total primary energy in 2050.
- ▶ Power generation more than doubles in all scenarios by 2050. As a result of this strong growth, this sector makes up 36% of total primary energy in 2050 under **New Momentum**, 44% in **Accelerated** and approximately half in **Net Zero**.
- ▶ Carbon emissions decrease in **New Momentum** by around 1% in 2050, while in **Accelerated** and **Net Zero**, emissions decrease by 62% and 86%, respectively. Carbon captured in CCUS makes up close to 10% of the global total in 2050, in both **Accelerated** and **Net Zero**.
- ▶ The region's shares of global oil and natural gas production increase in all three scenarios. Combined oil and gas energy production grows from 25% of the global total in 2019, to between 28% and 35% in 2050, with its share in **Net Zero** being the highest of the scenarios.





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	Level in 2050			2019	Shares in 2050 (%)			Change 2019-2050 (% p.a.)			
	2019	Accelerated	Net Zero		New Momentum	2019	Accelerated	Net Zero	New Momentum	Accelerated	Net Zero
<b>Primary energy consumption (EJ)</b>											
<b>Total</b>	<b>37</b>	<b>48</b>	<b>45</b>	<b>50</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0.8</b>	<b>0.6</b>	<b>0.9</b>
Oil†	17	9.9	5.6	16	45	21	12	32	-1.7	-3.5	-0.2
Natural gas	20	14	10.0	25	52	30	22	50	-1.0	-2.2	0.8
Coal	0.4	0.1	0	0.3	1.1	0.1	0.1	0.7	-5.6	-7.0	-0.5
Nuclear	0.1	1.2	2.2	0.6	0.2	2.6	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	7.7	0.4	46	60	16	17	18	13
<b>Primary energy consumption (native units)</b>											
Oil† (Mb/d)	8.8	5.8	3.4	8.8							
Natural gas (Bcm)	545	400	277	691							
<b>Total final consumption by sector (EJ)</b>											
<b>Total</b>	<b>28</b>	<b>30</b>	<b>24</b>	<b>39</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0.2</b>	<b>3.5</b>	<b>5.2</b>
Transport	8.2	6.9	5.0	8.5	29	23	21	22	-0.6	-1.6	0.1
Feedstocks	3.8	5.1	4.0	6.1	13	17	17	15	1.0	0.2	1.6
Buildings	6.1	8.0	6.5	10.0	21	26	27	25	0.9	0.2	1.6
Industry	10	10	8.5	15	37	34	35	37	0	-0.6	1.1
<b>Generation (native units)</b>											
Power (TWh)	1,234	3,621	4,194	2,615					3.5	4.0	2.5
Hydrogen (Mt)	8.1	36	47	15					4.9	5.9	1.9
<b>Production</b>											
Oil† (Mb/d)	30	22	12	34					-1.0	-3.0	0.3
Natural gas (Bcm)	678	572	442	925					-0.6	-1.4	1.0
Coal (EJ)	0	0	0	0					-7.4	-8.9	-2.6
<b>Emissions</b>											
Carbon emissions†† (Gt of CO <sub>2</sub> e)	2.6	1.0	0.4	2.5					-3.1	-6.2	0
CCUS (Mt of CO <sub>2</sub> )	0	442	519	39					59	60	47

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 CO<sub>2</sub> emissions from energy use, industrial processes, natural gas flaring, and methane emissions from energy production.