



Energy Outlook – 2020

Insights from the Rapid, Net Zero and Business-as-usual (BAU) scenarios – Africa

Significant increase in domestic consumption leads to decline in net exports; renewables become the dominant energy source in power generation by 2050

1. Under all three scenarios, African electricity demand more than triples by 2050, with renewables accounting for the largest share in power generation
2. The share of renewables in primary energy grows from 2% today to 41% in **Rapid**, 61% in **Net Zero** and 22% in **BAU**
3. Natural gas production as a share of global production reaches 13% in **Rapid** and 11% in **BAU** by 2050, from 6% today

107% to 142%

Increase in primary energy
2020-2050

0.2% to 3.8%

Share of global hydrogen
consumption in 2050

42% to 67%

Share of renewables in power
generation by 2050

73% to -77%

Net change in CO₂ emissions
by 2050

- ▶ Africa's economy grows at a rate of 3.3% per annum 2018-2050, down from 3.8% 1990-2018.
- ▶ Primary energy consumption in Africa increases in all three scenarios, primarily reflecting increase in prosperity as measured by GDP per head and population.
- ▶ At the same time, renewables' share of the primary energy mix increases sharply, reaching 41%, 61% and 22% in **Rapid**, **Net Zero** and **Business-as-usual** (BAU) respectively.
- ▶ Renewables are driven by wind and solar, increasing from almost zero today to 15 EJ, 20 EJ and 10 EJ in 2050 in **Rapid**, **Net Zero** and **BAU** respectively.
- ▶ Oil's share of Africa's fuel mix declines sharply under all scenarios, falling from 42% today to 17% in **Rapid**, 9% in **Net Zero** and 28% in 2050 in **BAU**.
- ▶ The share of natural gas consumption in total primary energy remains stable under **Rapid** and **BAU** at 28% and decreases to 15% in **Net Zero** by 2050 from 28% today.
- ▶ Conversely, coal's share in the primary energy mix decreases markedly under **Rapid** and **Net Zero**, to 2% and 1% respectively by 2050. African coal production decreases from 7 EJ today to 3 EJ in 2050 in both **Rapid** and **BAU**.
- ▶ Production of oil declines across all scenarios in Africa. Oil production decreases sharply from 8 Mb/d today to 2 Mb/d in **Rapid** and 7 Mb/d in **BAU**.
- ▶ Natural gas consumption more than doubles from 236 Bcm in 2018 to almost 500 Bcm in **Rapid** and more than 550 Bcm in **BAU**.
- ▶ Net CO₂ emissions increase by 73% in **BAU**, due to the relatively high share of fossil fuels in the energy mix in this scenario. However, in **Net Zero**, net emissions decrease by 77% and by 14% under **Rapid**.



Energy Outlook – 2020

Insights from the Rapid, Net Zero and Business-as-usual scenarios – Africa



	Level in 2050				2018	Shares in 2050 (%)			Change 2018-2050 (%)			Change 2018-2050 (% p.a.)		
	2018	Rapid	Net Zero	BAU		Rapid	Net Zero	BAU	Rapid	Net Zero	BAU	Rapid	Net Zero	BAU
Primary energy consumption (EJ)														
Total	19	43	40	47	100	100	100	100	>100	>100	>100	2.6	2.3	2.8
Oil†	8	7	4	13	42	17	9	28	-10	-56	62	-0.3	-2.5	1.5
Gas	5	12	6	13	28	28	15	28	>100	12	>100	2.6	0.4	2.8
Coal	4	1	0	6	22	2	1	13	-81	-94	44	-5.0	-8.4	1.1
Nuclear	0	1	2	1	1	3	4	2	>100	>100	>100	8.4	9.0	7.0
Hydro	1	4	4	3	6	9	11	7	>100	>100	>100	3.7	4.0	3.2
Renewables (incl. biofuels)	0	18	24	10	2	41	61	22	>100	>100	>100	14	15	12
Oil† (Mb/d)														
Oil† (Mb/d)	4	4	2	7	42	17	9	28	-10	-51	66	-0.3	-2.2	1.6
Gas (Bcm)														
Gas (Bcm)	150	338	169	365	28	28	15	28	>100	12	144	2.6	0.4	2.8
Transport^														
Transport^	5	9	8	9	27	20	21	20	64	61	79	1.5	1.5	1.8
Non-combusted^														
Non-combusted^	1	2	1	2	4	4	2	4	>100	24	>100	2.5	0.7	3.0
Buildings^														
Buildings^	6	14	11	15	29	32	27	32	>100	94	>100	2.8	2.1	3.2
Industry^														
Industry^	8	20	20	21	40	45	50	44	>100	>100	>100	2.9	3.0	3.1
Power														
Power	8	30	31	24	40	69	78	52	>100	>100	>100	4.3	4.5	3.7
Production														
Oil† (Mb/d)	8	2		7					-79		-18	-4.7		-0.6
Gas (Bcm)	236	493		552					>100		>100	2.3		2.7
Coal	7	3		3					-57		-57	-2.6		-2.6
Emissions														
Net CO ₂ (Gt)	1.2	1.1	0.3	2.1					-14	-77	73	-0.5	-4.0	1.7

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