Bahrain

IRENA
International Renewable Energy Agency

COUNTRY INDICATORS AND SDGS

GDP per capita / 8.1.1 Real GDP growth rate

7.3.1 Energy intensity

7.1.1 Access to electricity (% population) / 7.1.2 Access to clean cooking (% population) / 7.2.1 Renewable energy (% TFEC)

7.a.1 Public flows to renewables

7.b.1 Per capita renewable capacity

11.6.2 Air particulate matter (PM₂.₅)
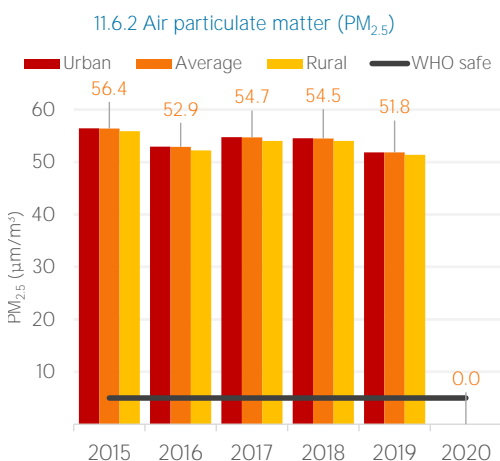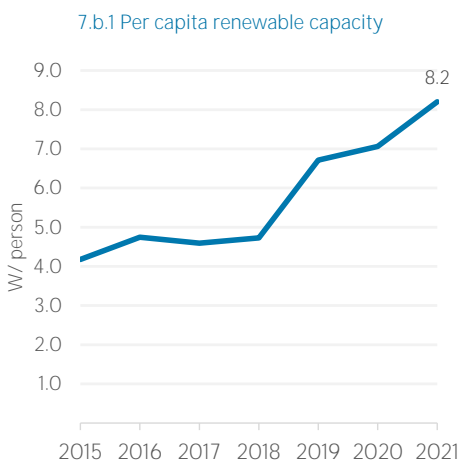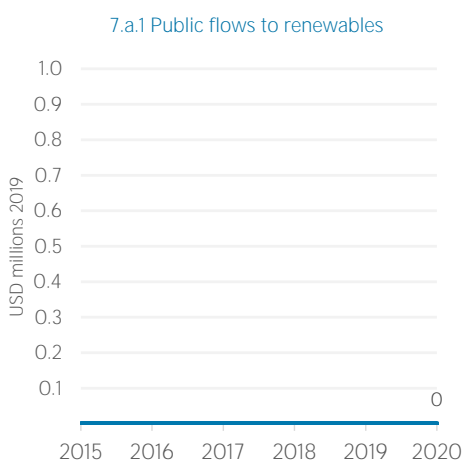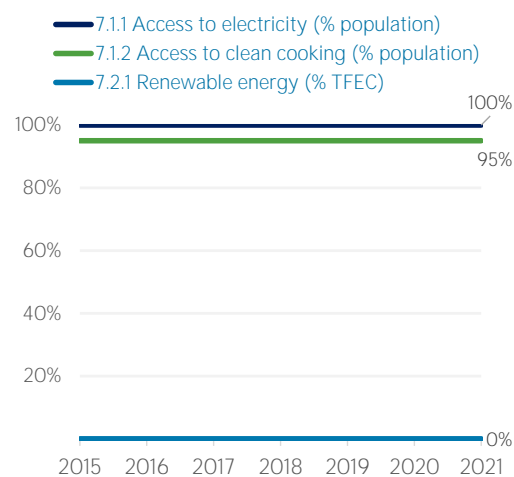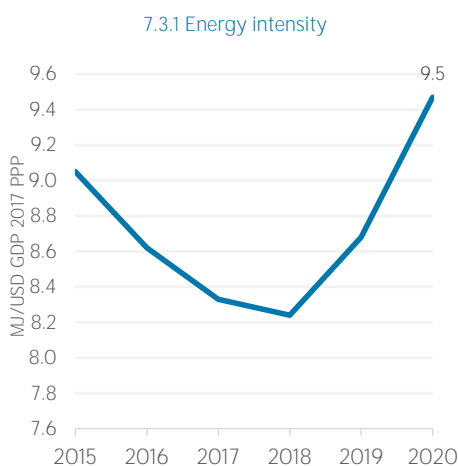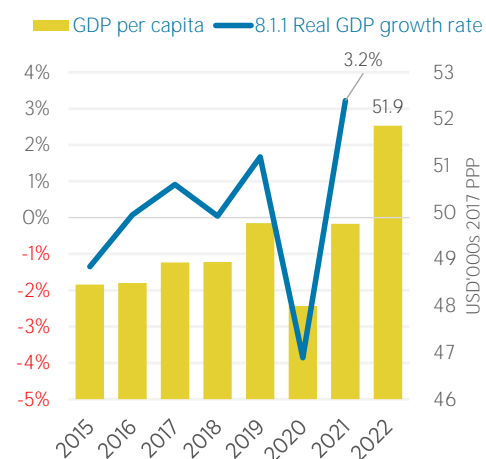
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2015	2020
Non-renewable (TJ)	576 721	666 335
Renewable (TJ)	456	286
Total (TJ)	577 177	666 621
Renewable share (%)	0	0

Growth in TES	2015-20	2019-20
Non-renewable (%)	+15.5	-0.3
Renewable (%)	-37.2	-12.3
Total (%)	+15.5	-0.3

Primary energy trade	2015	2020
Imports (TJ)	474 658	395 561
Exports (TJ)	839 419	785 759
Net trade (TJ)	364 761	390 198
Imports (% of supply)	82	59
Exports (% of production)	88	75
Energy self-sufficiency (%)	166	157

Total energy supply in 2020

Oil, Gas, Nuclear, Coal + others, Renewables
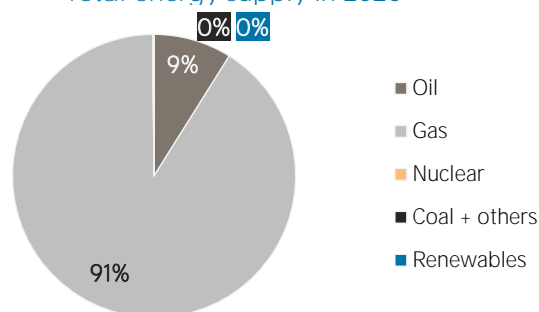
Renewable energy supply in 2020

Hydro/marine, Wind, Solar, Bioenergy, Geothermal
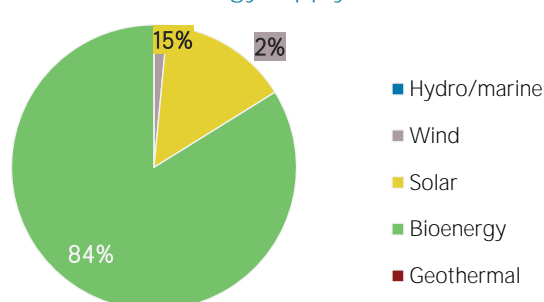
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: Electricity, Commercial heat, Bioenergy, Geothermal, Solar direct

Consumption by sector	2015	2020
Industry (TJ)	17	26
Transport (TJ)	0	0
Households (TJ)	40	14
Other (TJ)	431	286

Renewable energy consumption in 2020

14%
86%

8%
4%
88%

Industry
Transport
Households
Other

n.a.

ELECTRICITY CAPACITY

Installed capacity trend

Legend: Fossil fuels, Nuclear, Other Non-RE, Hydro/marine, Wind, Solar, Bioenergy, Geothermal, Renewable share

5.9 5.9 5.9 5.9 7.7 7.7 8.6 8.6
0%

Net capacity change in 2022 (MW)

Non-renewable	Hydro and marine
0	0

Solar	Wind
+ 0	+ 0

Bioenergy	Geothermal
0	0
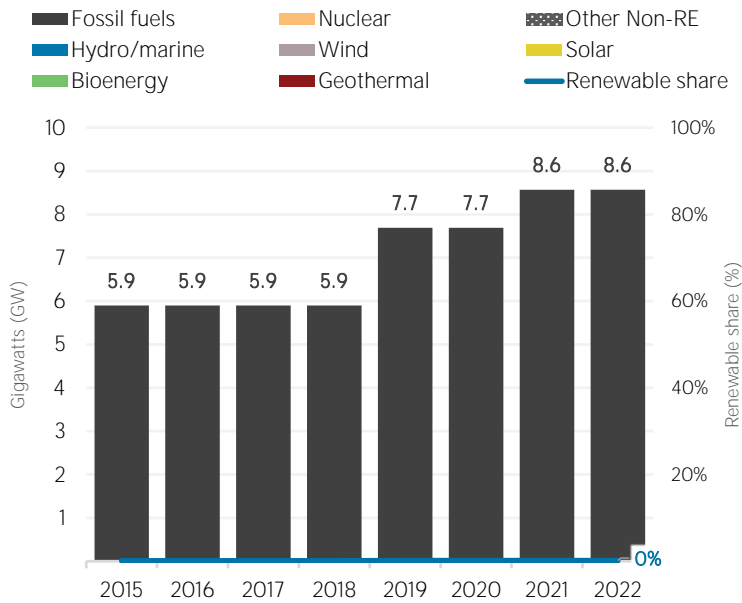
Renewable capacity in 2022

6%
94%

Hydro/marine
Solar
Wind
Bioenergy
Geothermal

Net capacity change (GW)

Legend: Fossil fuels, Renewable

1.8
0.9
0.0 0.0 0.0 0.0   0.0 0.0 0.0 0.0   0.0 0.0

2017 2018 2019 2020 2021 2022
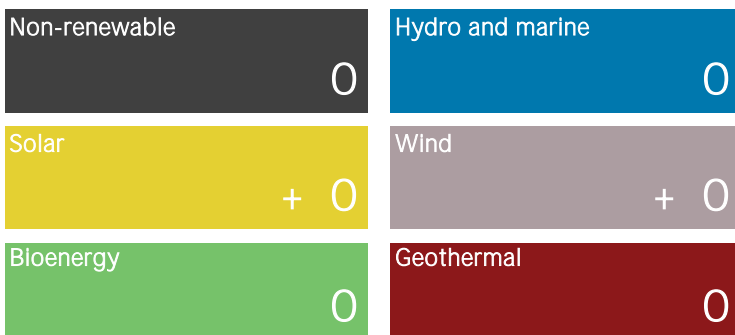
Capacity utilisation in 2021 (%)

Fossil fuels	47%
Nuclear	
Hydro/Marine	
Solar	13%
Wind	20%
Bioenergy	
Geothermal	
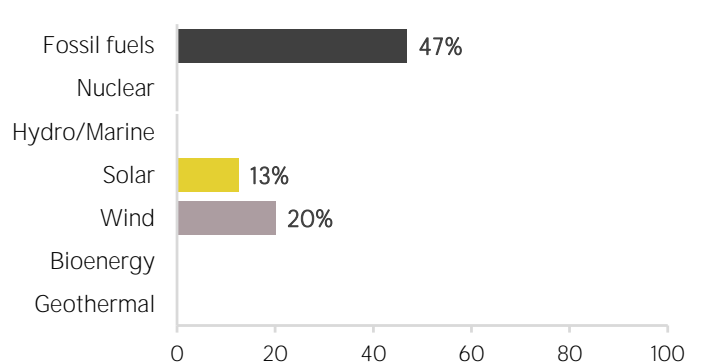
ELECTRICITY GENERATION

Generation in 2021

Generation in 2021	GWh	%
Non-renewable	33 364	100
Renewable	13	0
Hydro and marine	0	0
Solar	12	0
Wind	1	0
Bioenergy	0	0
Geothermal	0	0
Total	33 377	100

Per capita electricity generation (kWh)
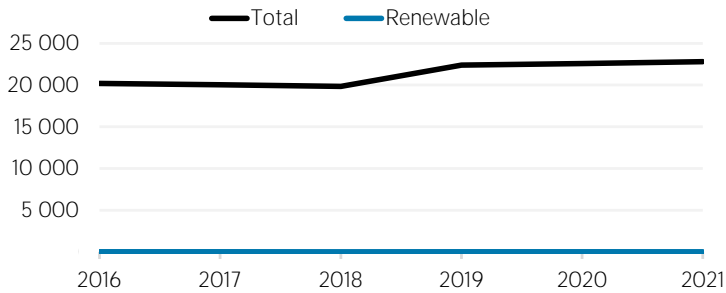
Electricity generation trend
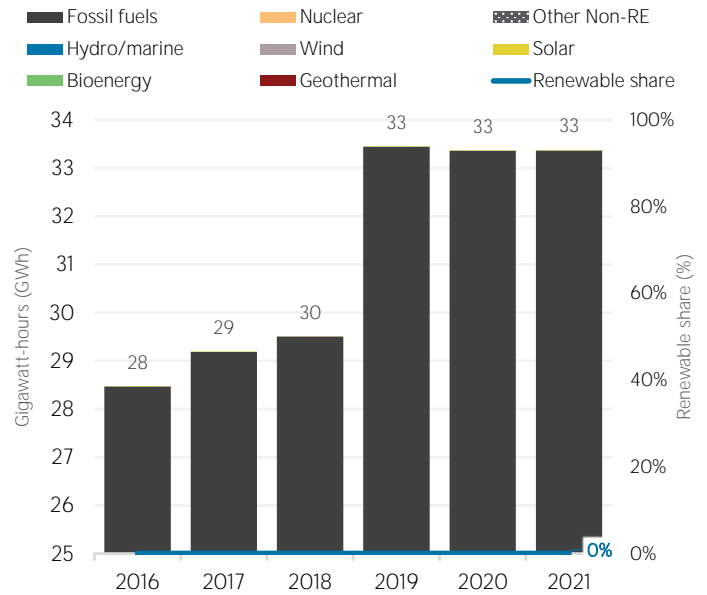
LATEST POLICIES, PROGRAMMES AND LEGISLATION

|		
1	National Energy Efficiency Action Plan (NEEAP)	2017
2	Regulations on Energy Labelling and Minimum Energy Performance Requirements for Air Conditioners	2016
3	GSO ISO 5151 Non-ducted air conditioners and heat Pumps - Testing and rating for Performance	2010
4	GSO ISO 13253 Ducted air-conditioners and air-to-air heat pumps- Testing and rating for performance	2009
5		

ENERGY AND EMISSIONS

Energy-related CO_2 emissions by sector
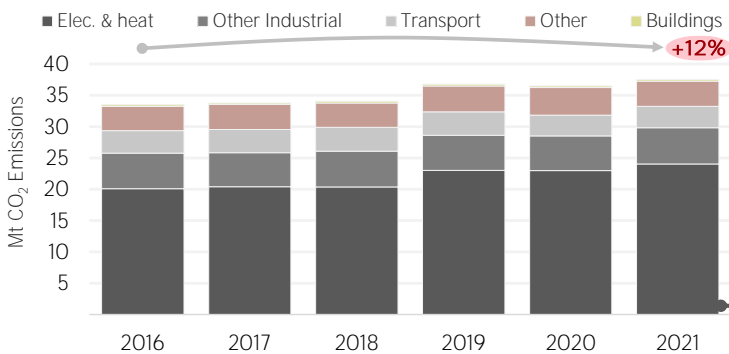
Elec. & heat generation CO_2 emissions in
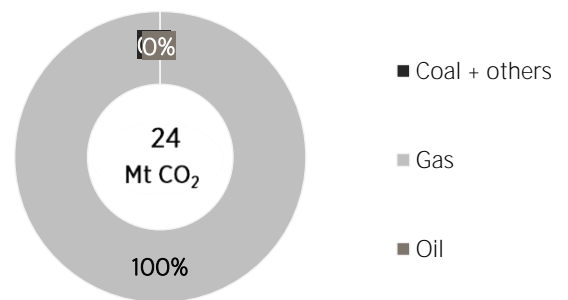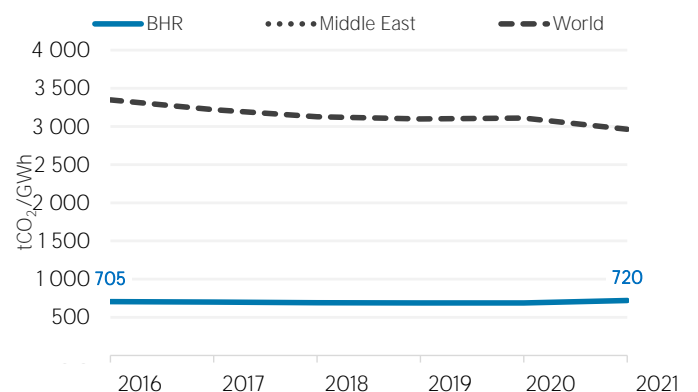

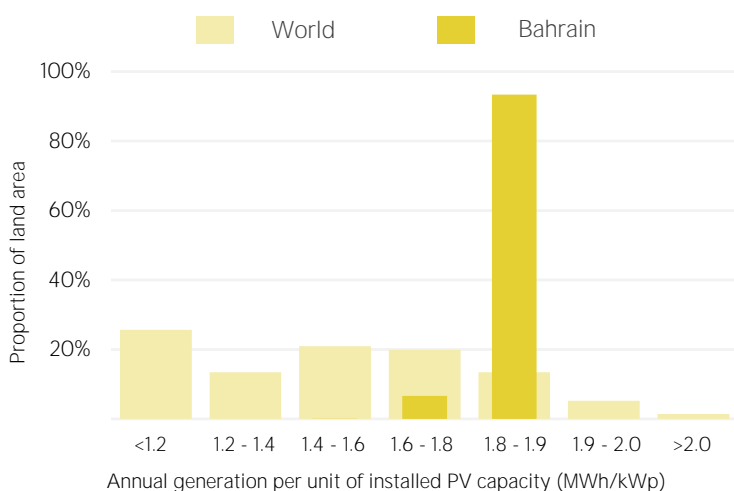### Avoided emissions from renewable elec. & heat
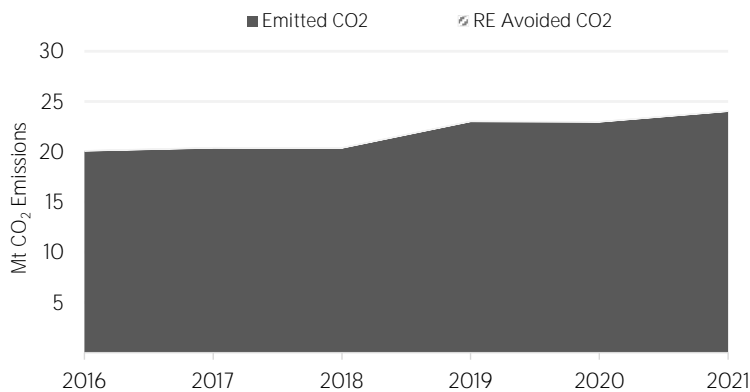
Avoided emissions based on fossil fuel mix used for power

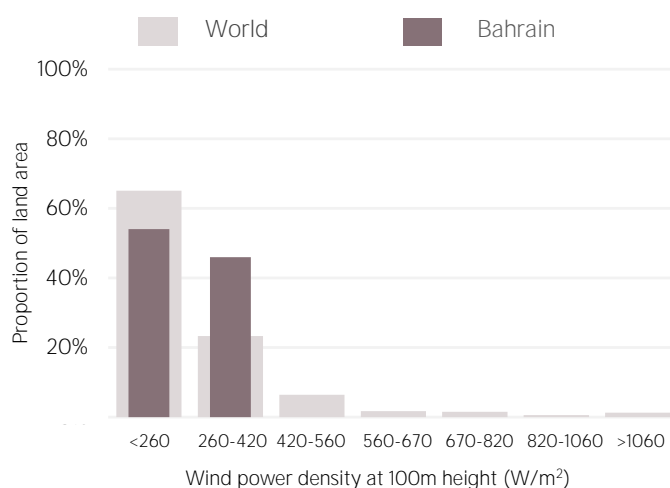### CO_2 emission factor for elec. & heat generation

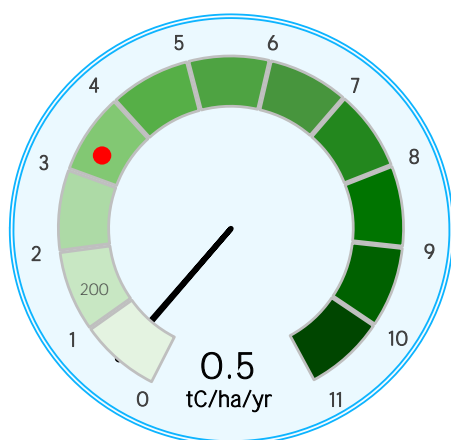*Calculated by dividing power sector emissions by elec. + heat gen.*

Distribution of solar potential

Proportion of land area

Legend: World, Bahrain

Annual generation per unit of installed PV capacity (MWh/kWp)

X-axis categories: <1.2, 1.2 - 1.4, 1.4 - 1.6, 1.6 - 1.8, 1.8 - 1.9, 1.9 - 2.0, >2.0

Distribution of wind potential

Proportion of land area

Legend: World, Bahrain

Wind power density at 100m height (W/m^2)

X-axis categories: <260, 260-420, 420-560, 560-670, 670-820, 820-1060, >1060

Biomass potential: net primary production

0.5 tC/ha/yr

● = Global average of 3-4 tC/ha/yr

Indicators of renewable resource potential

Solar PV: Solar resource potential has been divided into seven classes, each representing a range of annual PV output per unit of capacity (kWh/kWp/yr). The bar chart shows the proportion of a country's land area in each of these classes and the global distribution of land area across the classes (for comparison).

Onshore wind: Potential wind power density (W/m^2) is shown in the seven classes used by NREL, measured at a height of 100m. The bar chart shows the distribution of the country's land area in each of these classes compared to the global distribution of wind resources. Areas in the third class or above are considered to be a good wind resource.

Biomass: Net primary production (NPP) is the amount of carbon fixed by plants and accumulated as biomass each year. It is a basic measure of biomass productivity. The chart shows the average NPP in the country (tC/ha/yr), compared to the global average NPP of 3-4 tonnes of carbon

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