Kyrgyzstan

IRENA
International Renewable Energy Agency
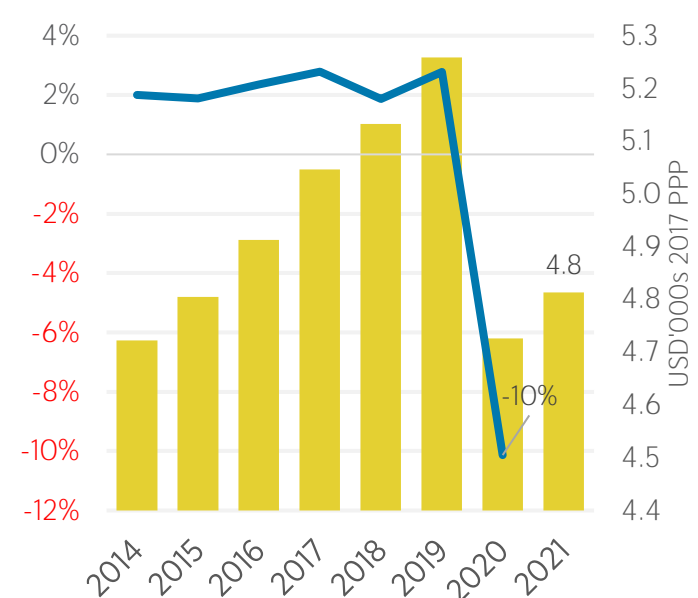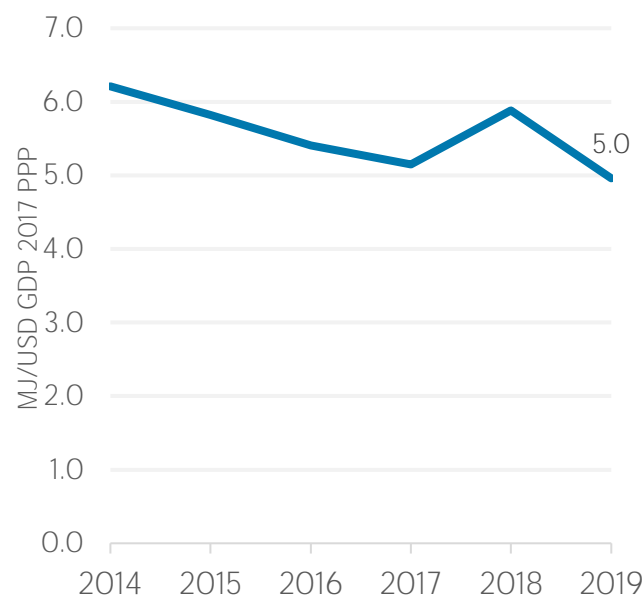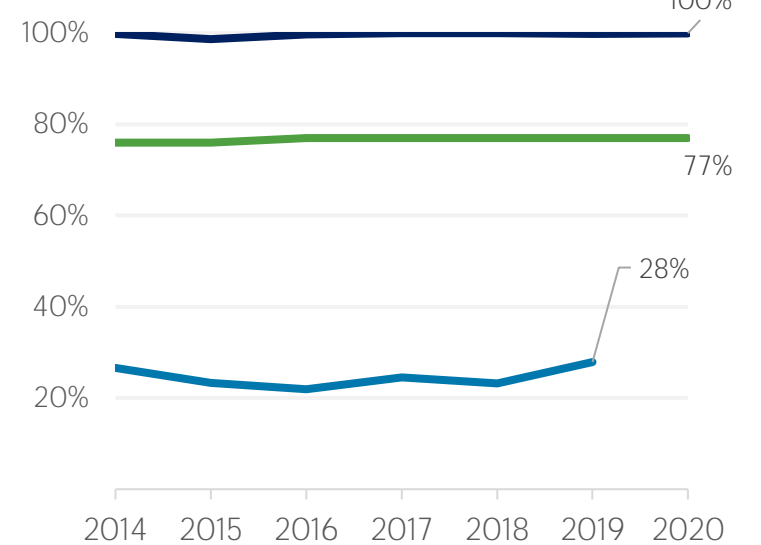
COUNTRY INDICATORS AND SDGS
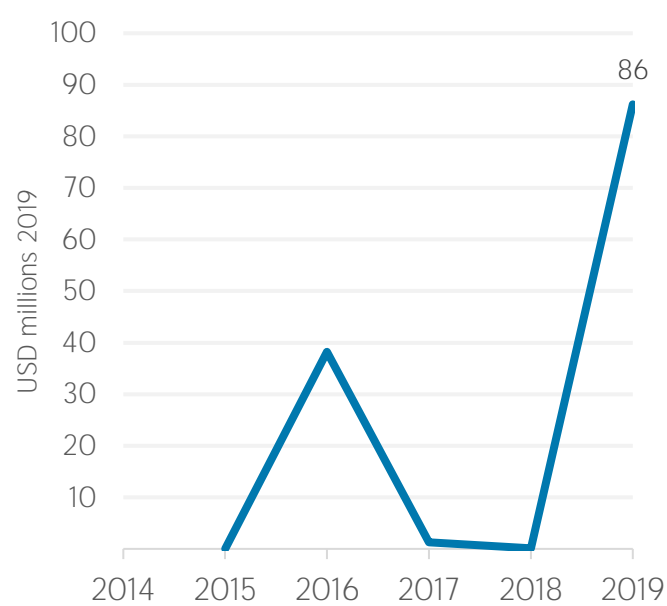
GDP per capita — 8.1.1 Real GDP growth rate

-10%
4.8

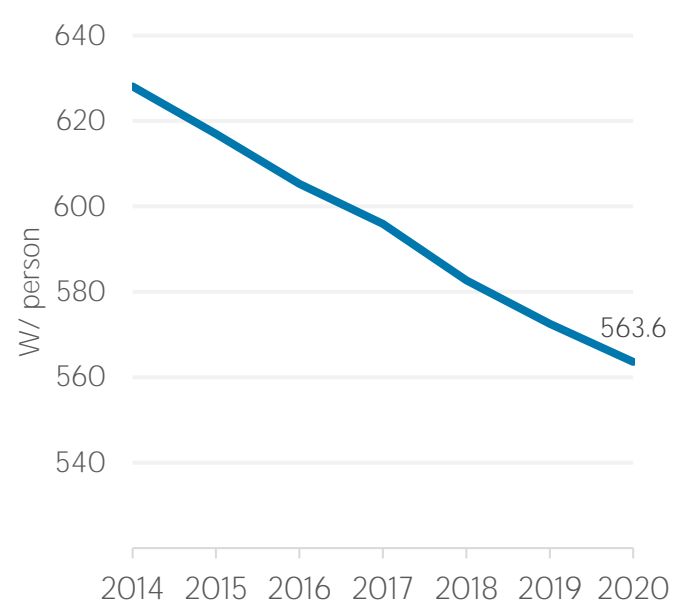7.3.1 Energy intensity

5.0

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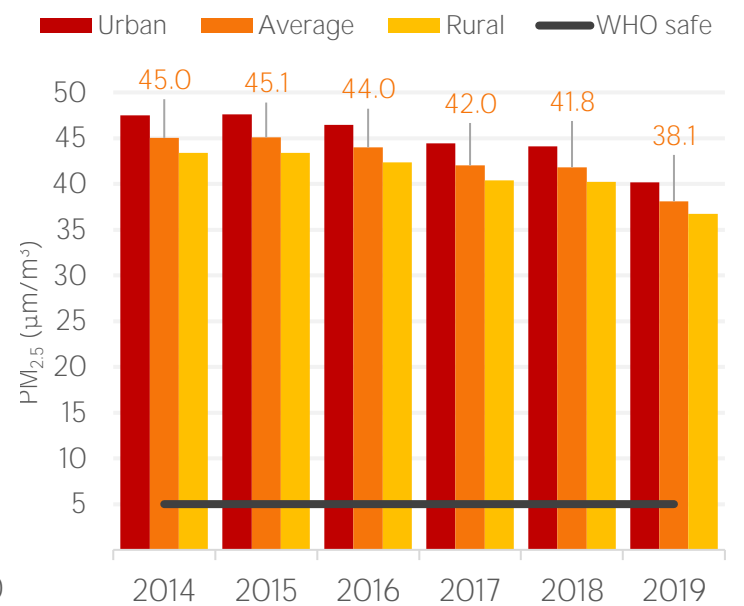7.1.2 Access to clean cooking (% population)
7.2.1 Renewable energy (% TFEC)

100%
77%
28%

7.a.1 Public flows to renewables

86

7.b.1 Per capita renewable capacity

563.6

11.6.2 Air particulate matter (PM$_{2.5}$)

Urban   Average   Rural   — WHO safe

45.0   45.1   44.0   42.0   41.8   38.1

TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2014	2019
Non-renewable (TJ)	122 697	108 660
Renewable (TJ)	40 768	50 406
Total (TJ)	163 466	159 067
Renewable share (%)	25	32

Growth in TES	2014-19	2018-19
Non-renewable (%)	-11.4	-23.8
Renewable (%)	+23.6	+6.1
Total (%)	-2.7	-16.3

Primary energy trade	2014	2019
Imports (TJ)	103 139	81 543
Exports (TJ)	10 134	26 067
Net trade (TJ)	- 93 005	- 55 476
Imports (% of supply)	63	51
Exports (% of production)	14	26
Energy self-sufficiency (%)	44	63

Total energy supply in 2019

32%
40%
21%
7%

Oil
Gas
Nuclear
Coal + others
Renewables
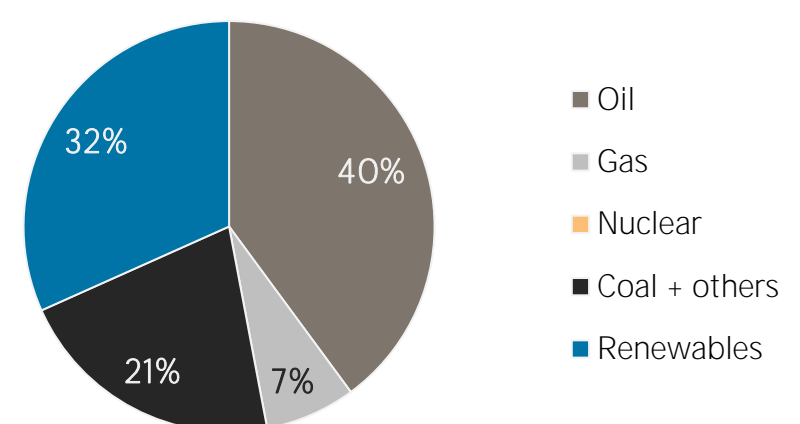
Renewable energy supply in 2019

0%
100%

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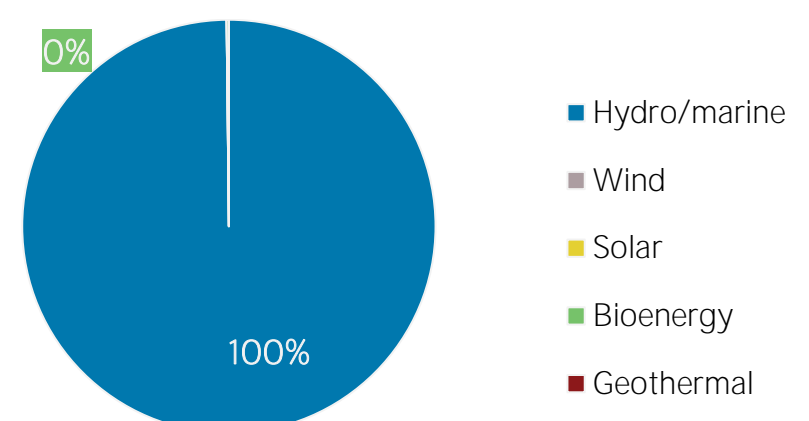
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

- Electricity
- Commercial heat
- Bioenergy
- Geothermal
- Solar direct

Petajoules (PJ)

	2014	2015	2016	2017	2018	2019
	28	34	42	37	37	41
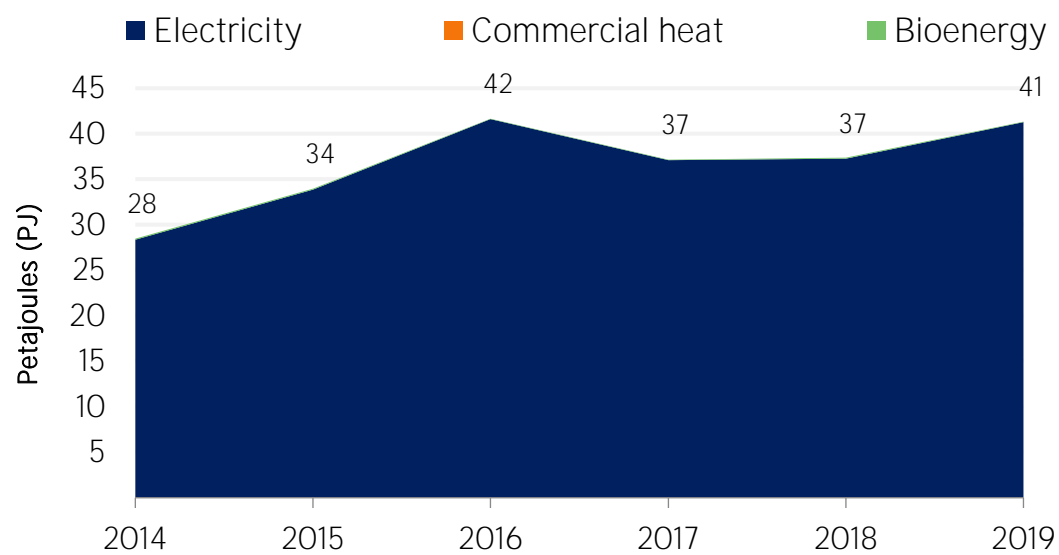
Renewable energy consumption in 2019

0%
100%

n.a.

18%
11%
0%
71%

- Industry
- Transport
- Households
- Other
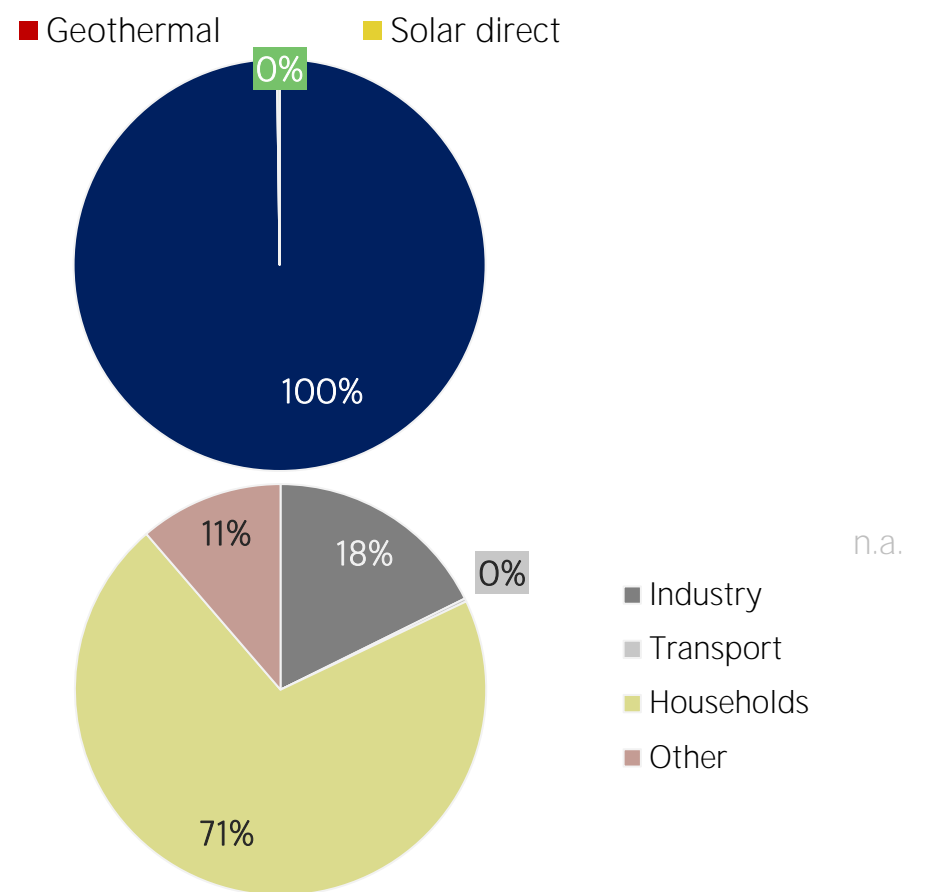
Consumption by sector	2014	2019
Industry (TJ)	3 033	7 313
Transport (TJ)	599	104
Households (TJ)	19 988	29 252
Other (TJ)	4 850	4 680

ELECTRICITY CAPACITY
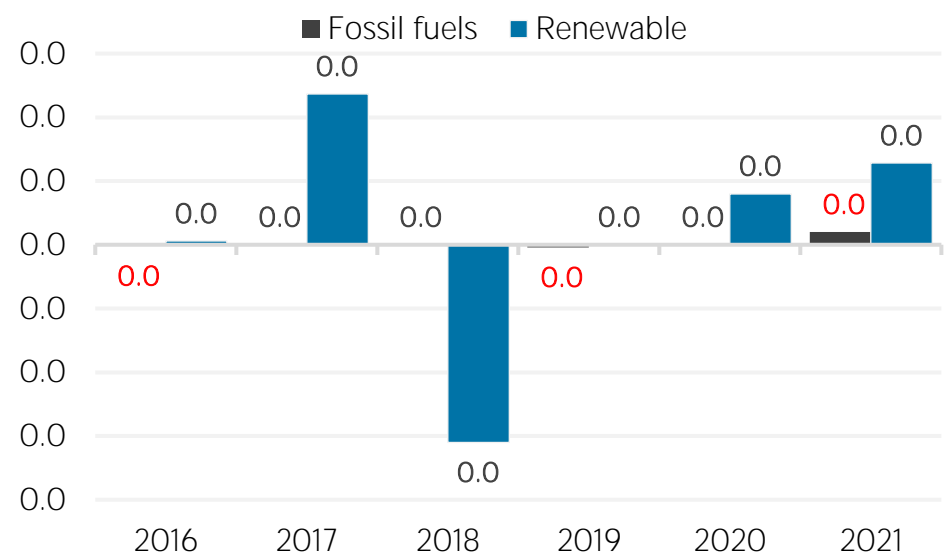
Installed capacity trend

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

Gigawatts (GW)

Renewable share (%)

	2014	2015	2016	2017	2018	2019	2020	2021
	4.5	4.3	4.3	4.3	4.3	4.3	4.3	4.3

85%
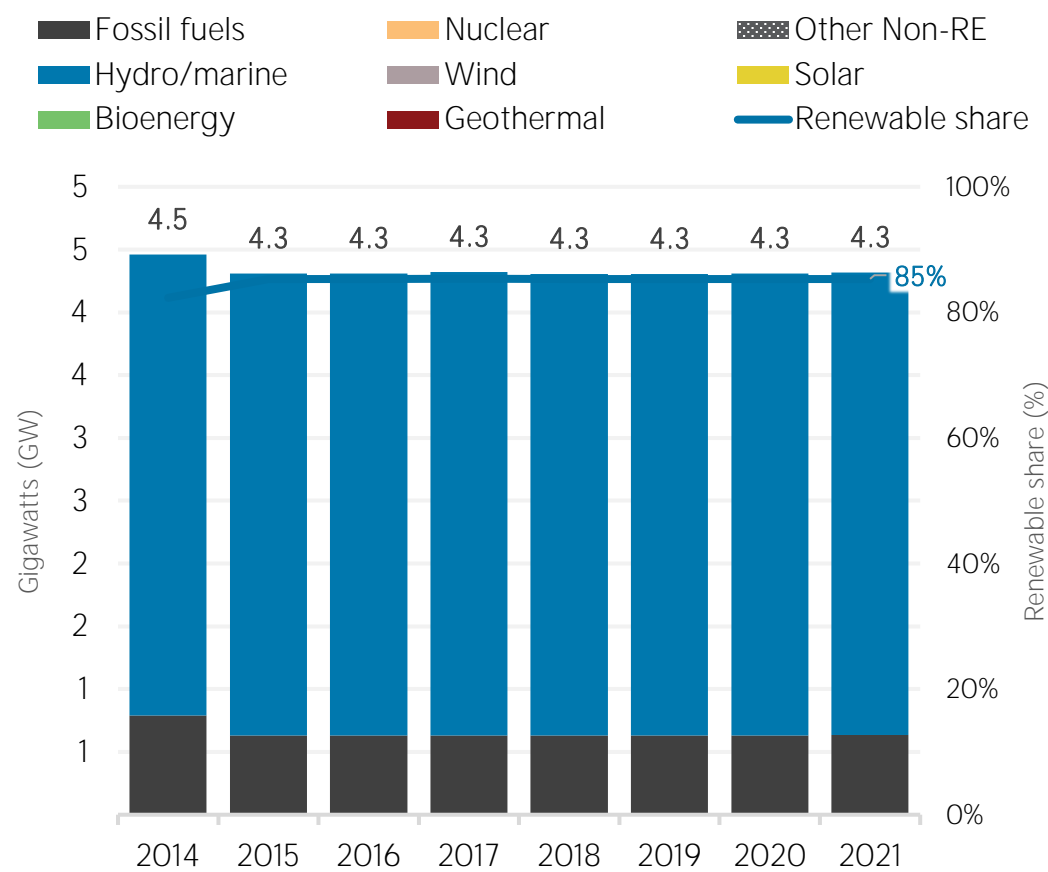
Renewable capacity in 2021

100%

- Hydro/marine
- Solar
- Wind
- Bioenergy
- Geothermal
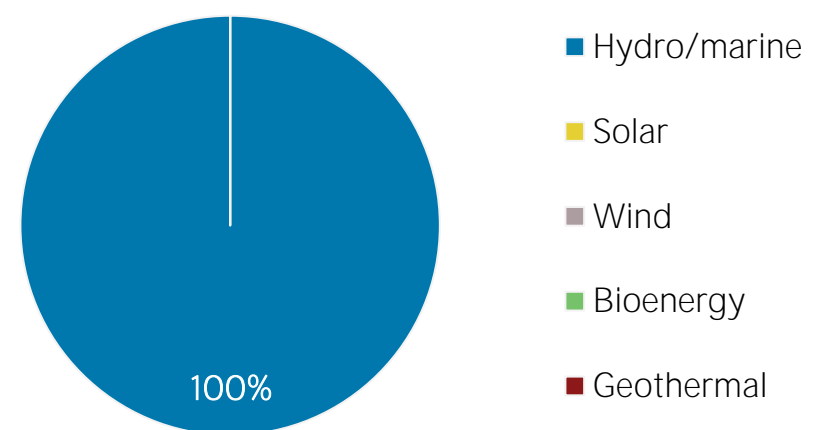
Net capacity change in 2021 (MW)

Non-renewable	Hydro and marine
+ 1	+ 6

Solar	Wind
0	0

Bioenergy	Geothermal
0	0

Net capacity change (GW)

- Fossil fuels
- Renewable

	2016	2017	2018	2019	2020	2021
	0.0	0.0	0.0	0.0	0.0	0.0
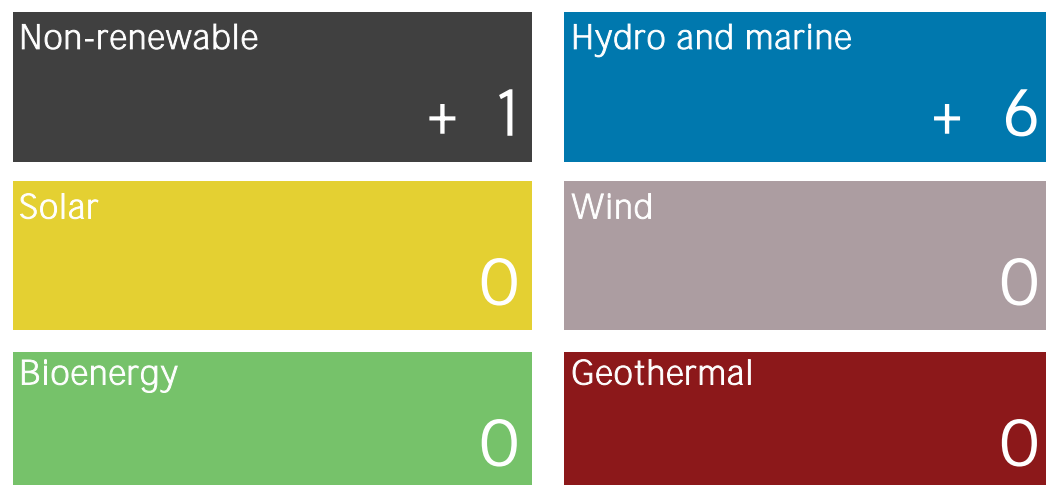
Capacity utilisation in 2020 (%)

Fossil fuels	26%
Nuclear	
Hydro/Marine	43%
Solar	
Wind	
Bioenergy	
Geothermal	
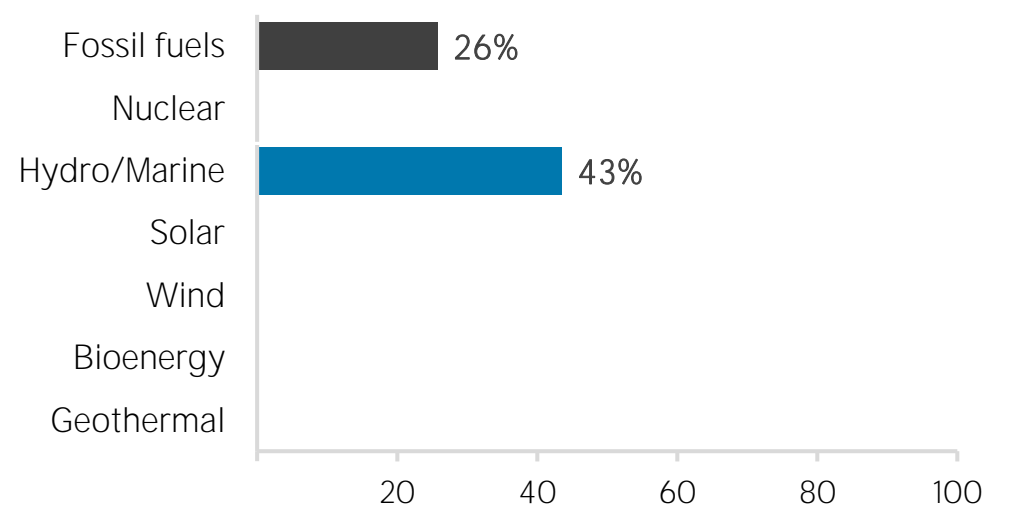
ELECTRICITY GENERATION

| Generation in 2020	GWh	%
Non-renewable	1 425	9
Renewable	13 979	91
Hydro and marine	13 979	91
Solar	0	0
Wind	0	0
Bioenergy	0	0
Geothermal	0	0
Total	15 404	100

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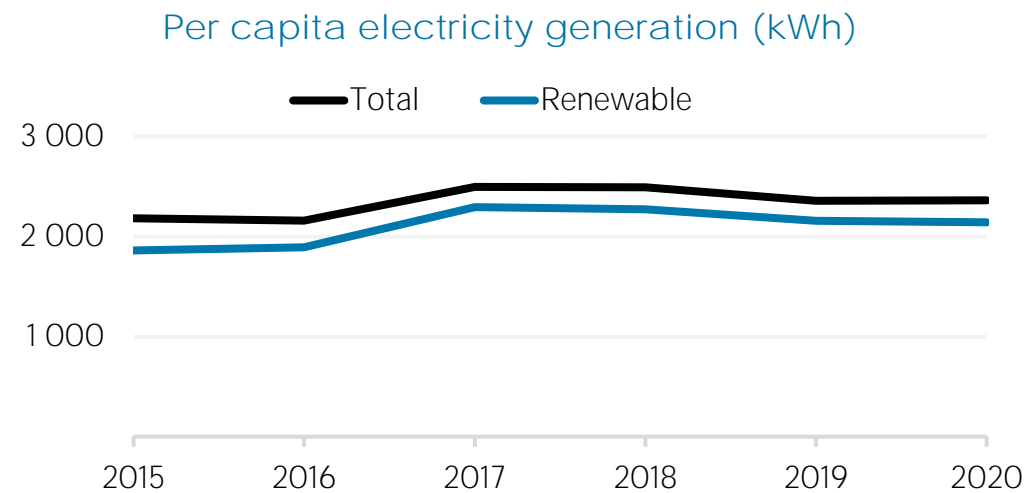
Electricity generation trend
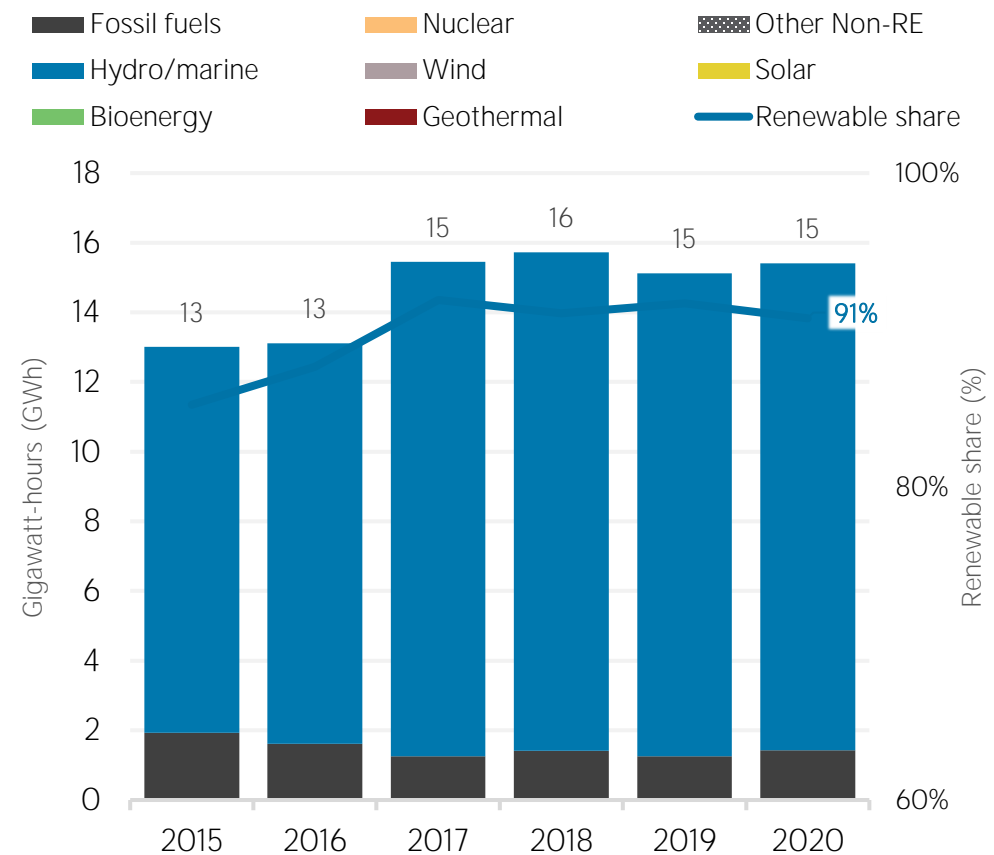
LATEST POLICIES, PROGRAMMES AND LEGISLATION

1	Green Economy Concept	2018
2	Lands of the Energy Sector	2016
3	On Energy Performance of Buildings	2011
4	Renewable Energy Law	2008
5		

ENERGY AND EMISSIONS

Energy-related CO_2 emissions by sector

+7%
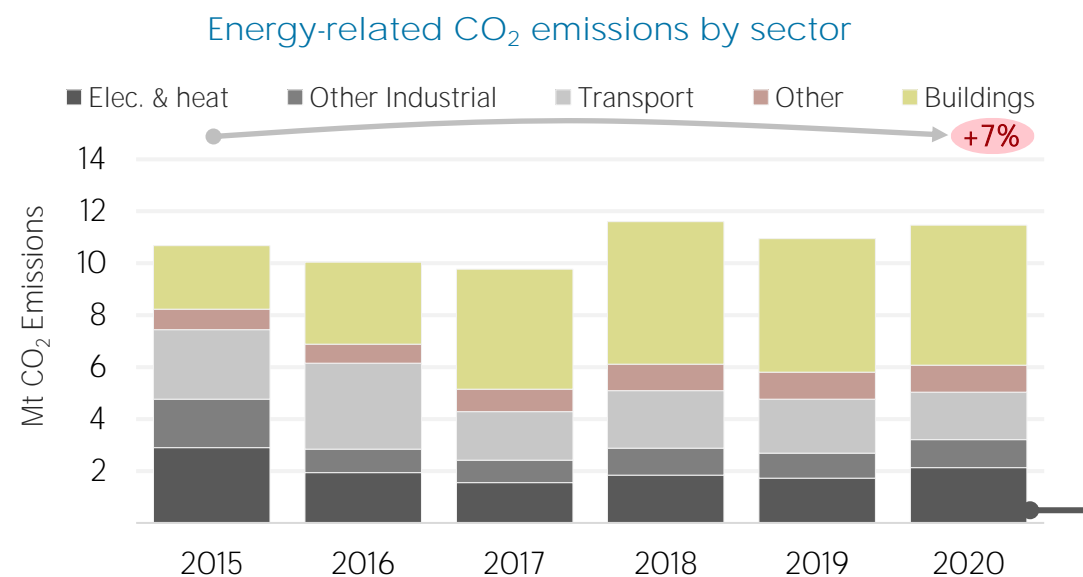
Elec. & heat generation CO_2 emissions in

2 Mt CO_2

- Coal + others 79%
- Gas 14%
- Oil 7%

Avoided emissions from renewable elec. & heat

Avoided emissions based on fossil fuel mix used for power
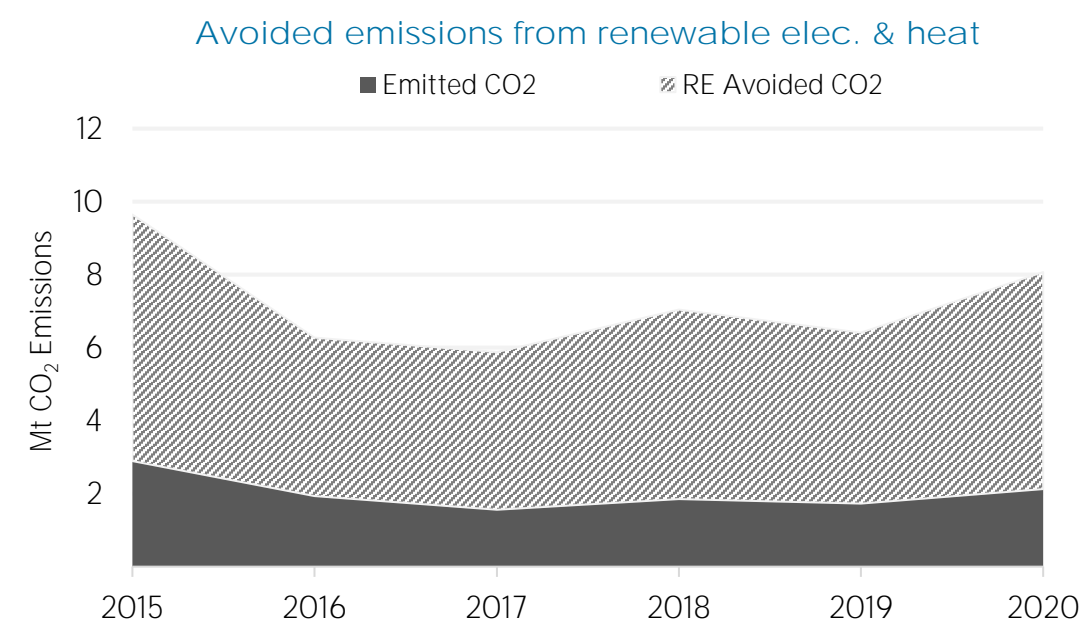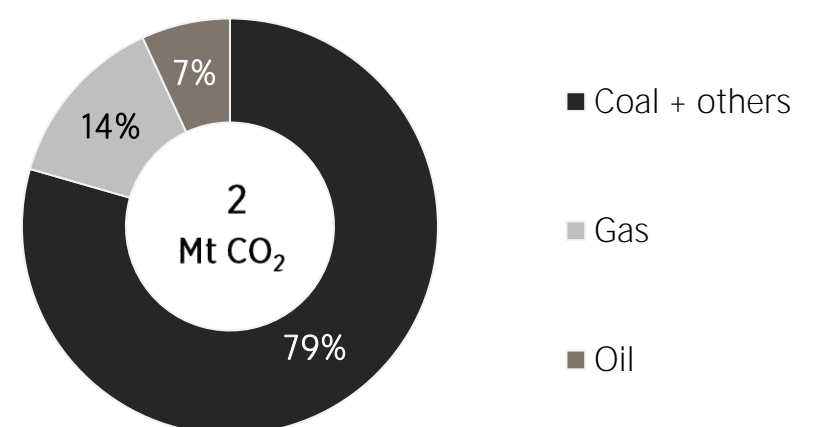
CO_2 emission factor for elec. & heat generation

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

Distribution of solar potential

World   Kyrgyzstan

Proportion of land area

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

x-axis: <1.2, 1.2 - 1.4, 1.4 - 1.6, 1.6 - 1.8, 1.8 - 1.9, 1.9 - 2.0, >2.0
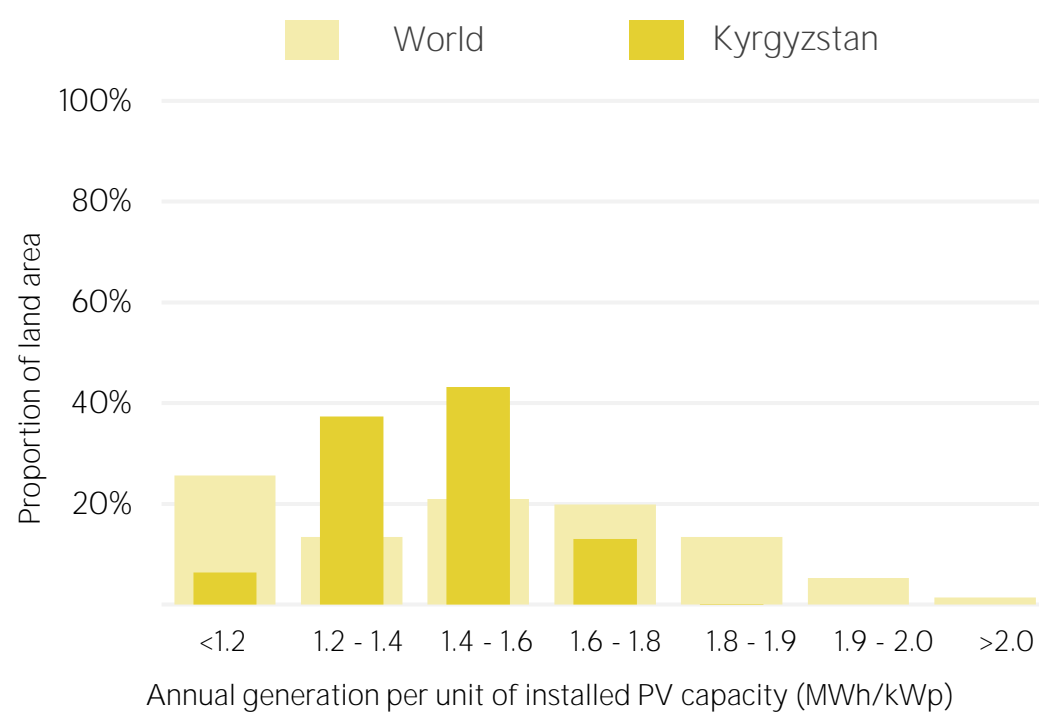
Distribution of wind potential

World   Kyrgyzstan

Proportion of land area

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

x-axis: <260, 260-420, 420-560, 560-670, 670-820, 820-1060, >1060
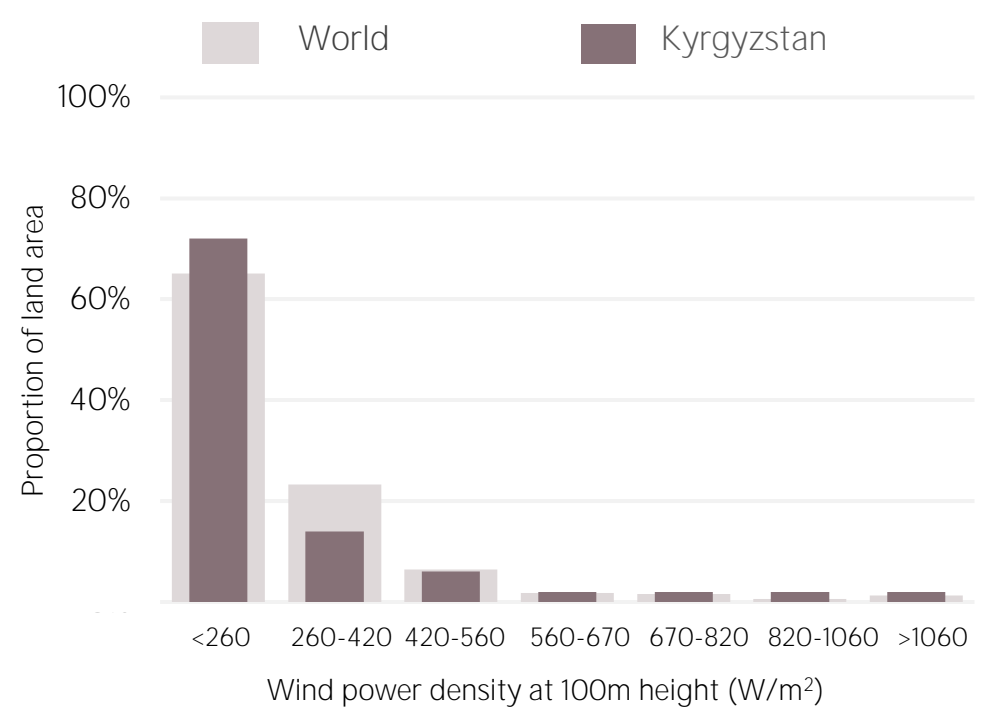
Biomass potential: net primary production

1.5
tC/ha/yr

● = Global average of 3-4 tC/ha/yr
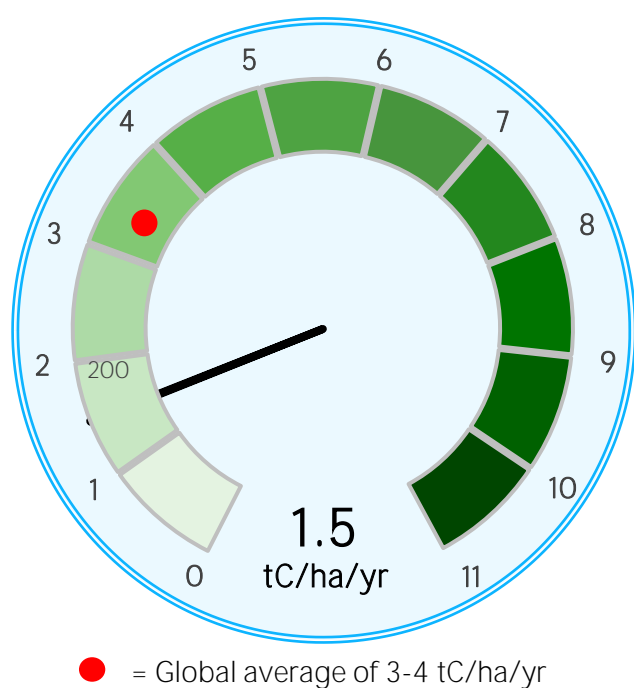
Indicators of renewable resource potential

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