

SUSTAINABLE DEVELOPMENT GOAL 7: ENERGY INDICATORS (2018)

Renewable energy (% of TFEC)	0.5	Access to electricity (% of population)	100.0
Energy efficiency (MJ per \$1 of GDP)	6.6	Access to clean cooking (% of population)	>95
Public flows renewables (2018 USD M)	n.a.	Per capita renewable capacity (W/person)	64.784

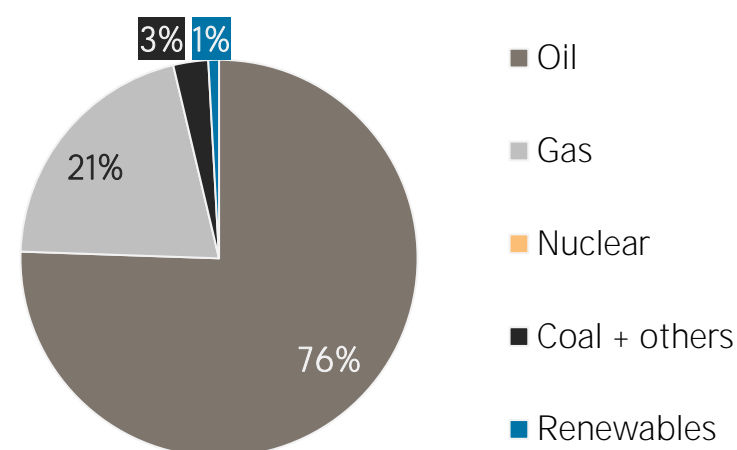
TOTAL PRIMARY ENERGY SUPPLY (TPES)

TPES	2013	2018
Non-renewable (TJ)	2 028 053	2 664 780
Renewable (TJ)	16 183	23 297
Total (TJ)	2 044 236	2 688 078
Renewable share (%)	1	1

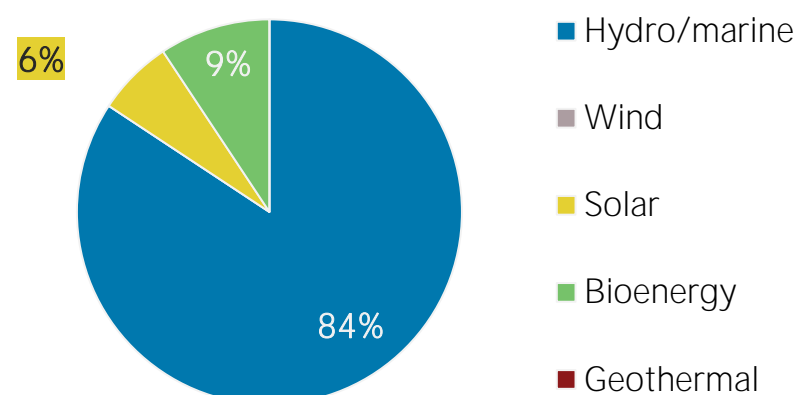
Growth in TPES	2013-18	2017-18
Non-renewable (%)	+31.4	+6.2
Renewable (%)	+44.0	+111.4
Total (%)	+31.5	+6.6

Primary energy trade	2013	2018
Imports (TJ)	571 641	828 410
Exports (TJ)	4 991 476	8 079 301
Net trade (TJ)	4 419 835	7 250 891
Imports (% of supply)	28	31
Exports (% of production)	77	81
Energy self-sufficiency (%)	318	372
Net trade (USD million)	+ 89 560	n.a.
Net trade (% of GDP)	+38.2	n.a.

Total primary energy supply in 2018



Renewable energy supply in 2018



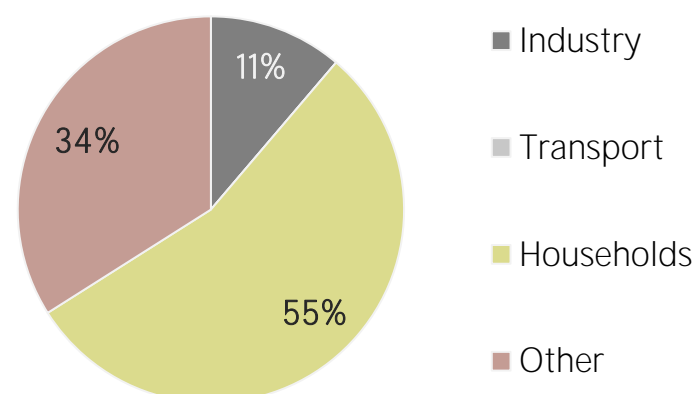
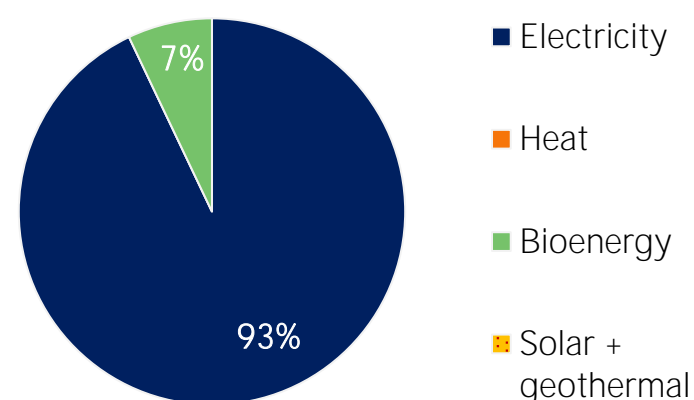
RENEWABLE ENERGY CONSUMPTION

Consumption by source	2013	2018
Electricity (TJ)	8 221	11 204
Heat (TJ)	0	0
Bioenergy (TJ)	1 004	852
Solar + geothermal (TJ)	0	0
Total (TJ)	9 225	12 056
Electricity share (%)	89	93

Consumption growth	2013-18	2017-18
Renewable electricity (%)	+36.3	+204.5
Other renewables (%)	-15.1	-21.8
Total (%)	+30.7	+152.8

Consumption by sector	2013	2018
Industry (TJ)	1 801	1 354
Transport (TJ)	0	0
Households (TJ)	2 900	6 606
Other (TJ)	4 523	4 096
Renewable share of TFEC	1.4	0.5

Renewable energy consumption in 2018

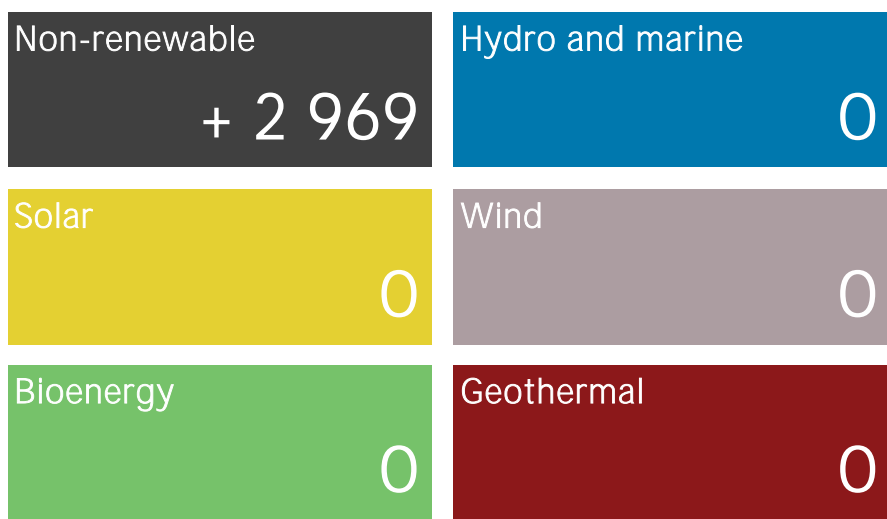


ELECTRICITY CAPACITY AND GENERATION

Capacity in 2020	MW	%
Non-renewable	28 788	92
Renewable	2 490	8
Hydro/marine	2 274	7
Solar	216	1
Wind	0	0
Bioenergy	0	0
Geothermal	0	0
Total	31 278	100

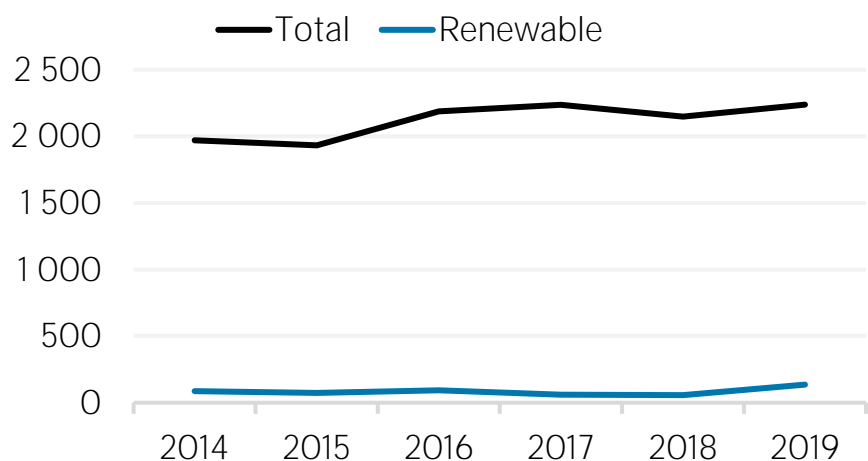
Capacity change (%)	2015-20	2019-20
Non-renewable	- 0	+ 11.5
Renewable	+ 8	0.0
Hydro/marine	0	0.0
Solar	+ 491	0.0
Wind	0	0.0
Bioenergy	0	0.0
Geothermal	0	0.0
Total	+ 0	+ 10.5

Net capacity change in 2020 (MW)

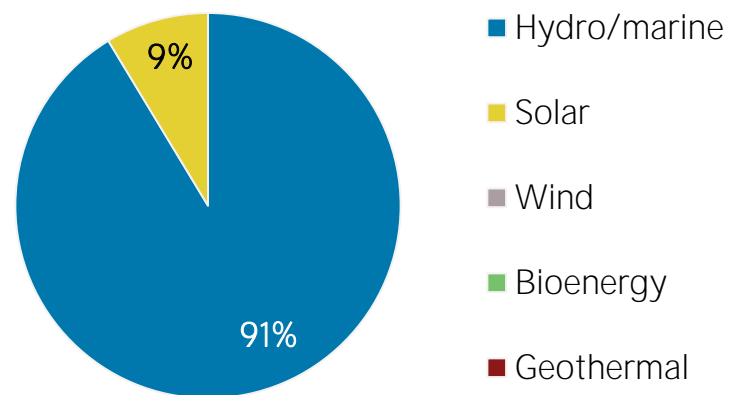


Generation in 2019	GWh	%
Non-renewable	82 622	94
Renewable	5 342	6
Hydro and marine	4 966	6
Solar	377	0
Wind	0	0
Bioenergy	0	0
Geothermal	0	0
Total	87 964	100

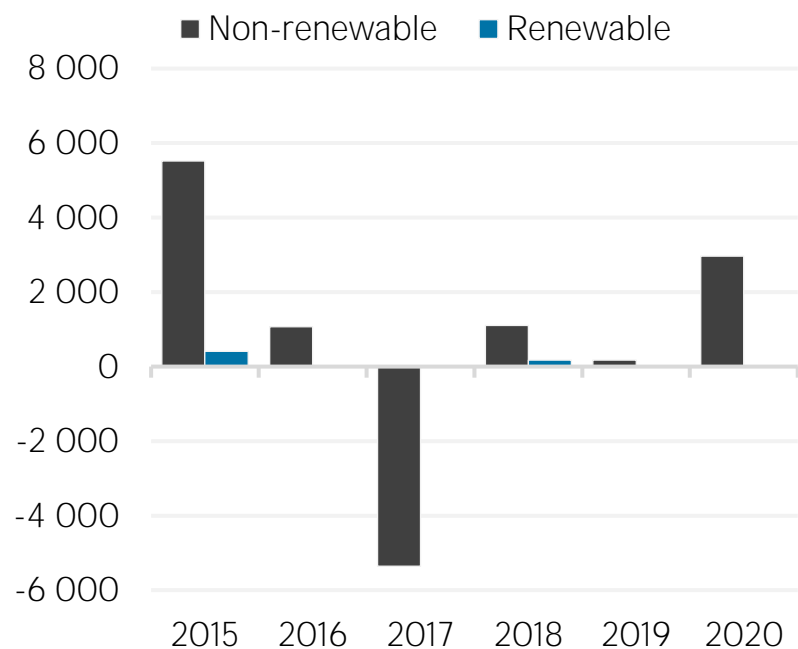
Per capita electricity generation (kWh)



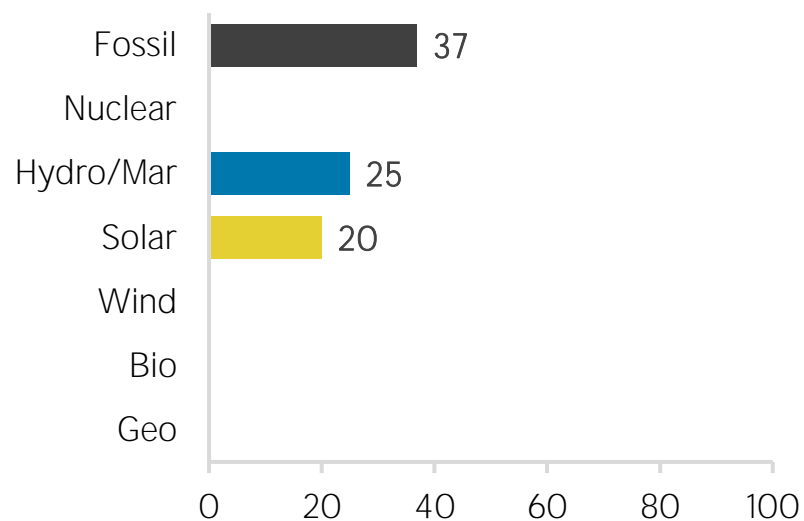
Renewable capacity in 2020



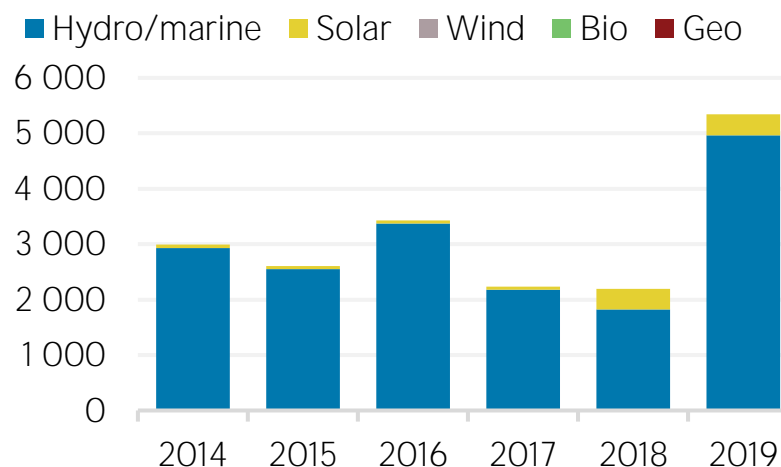
Net capacity change (MW)



Capacity utilisation in 2019 (%)



Renewable generation (GWh)



TARGETS, POLICIES AND MEASURES

Most immediate clean energy targets & NDCs

	year	target
Renewable energy:		
Renewable electricity:	2016	2 %
Renewable capacity:		
Renewable transport:		
Liquid Biofuel blending mandate:		
Other transport targets:		
Renewable heating/cooling:		
Renewable Hydropower	2035	3 %
Off-grid renewable technologies:		
Energy efficiency (Energy):		
Energy efficiency (Electricity):		

Latest policies, programmes and legislation

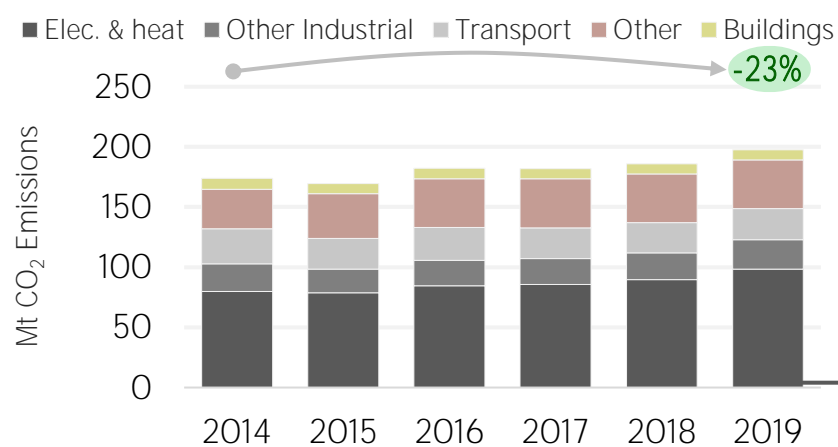
1 Iraq renewable energy auction	2016
2 Integrated National Energy Strategy of Iraq	2014
3 Law on Protection and Improvement of the Environment (Law No. 27 of 2009)	2009
4 Iraq's Constitution of 2005	2005

References to sustainable energy in Nationally Determined Contribution (NDC)

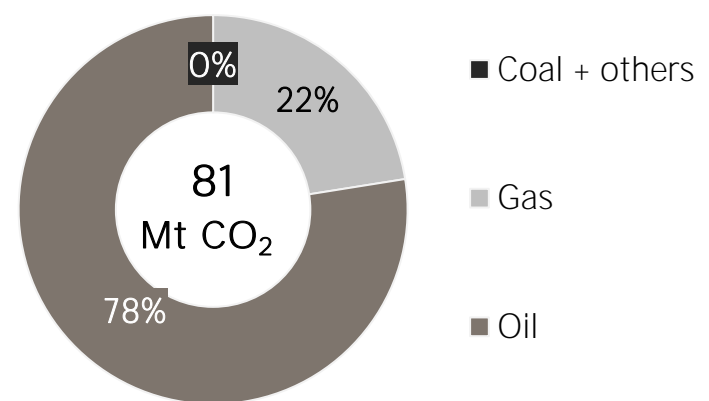
	Conditional	Unconditional	unit
- Renewable energy			
- electricity			
- transport			
- heating/cooling			
- Energy efficiency			

ENERGY AND EMISSIONS

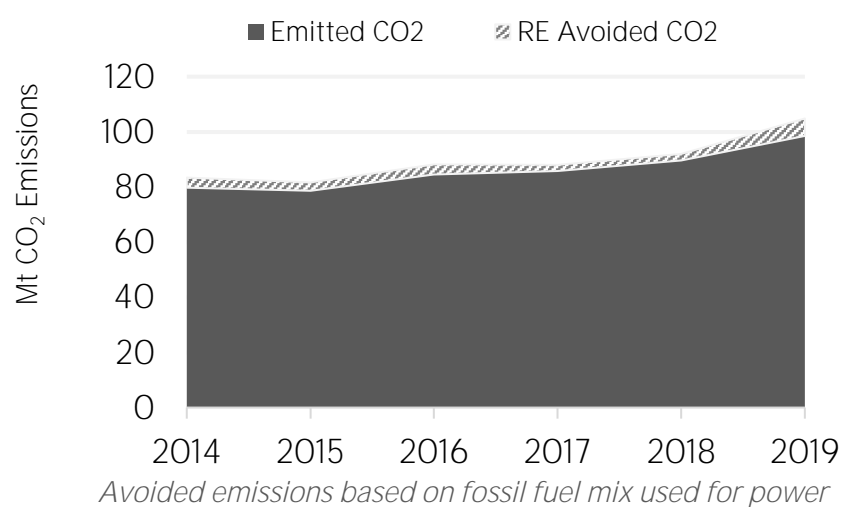
Energy-related CO₂ emissions by sector



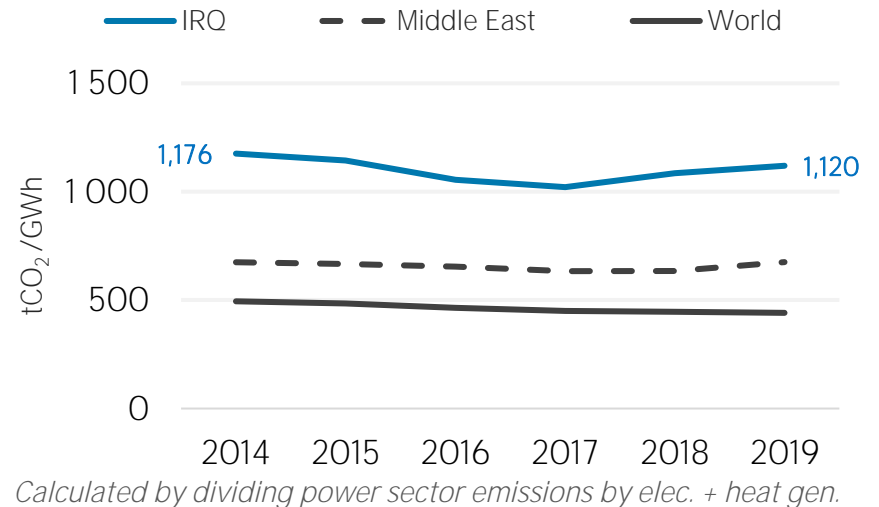
Elec. & heat generation CO₂ emissions in 2019



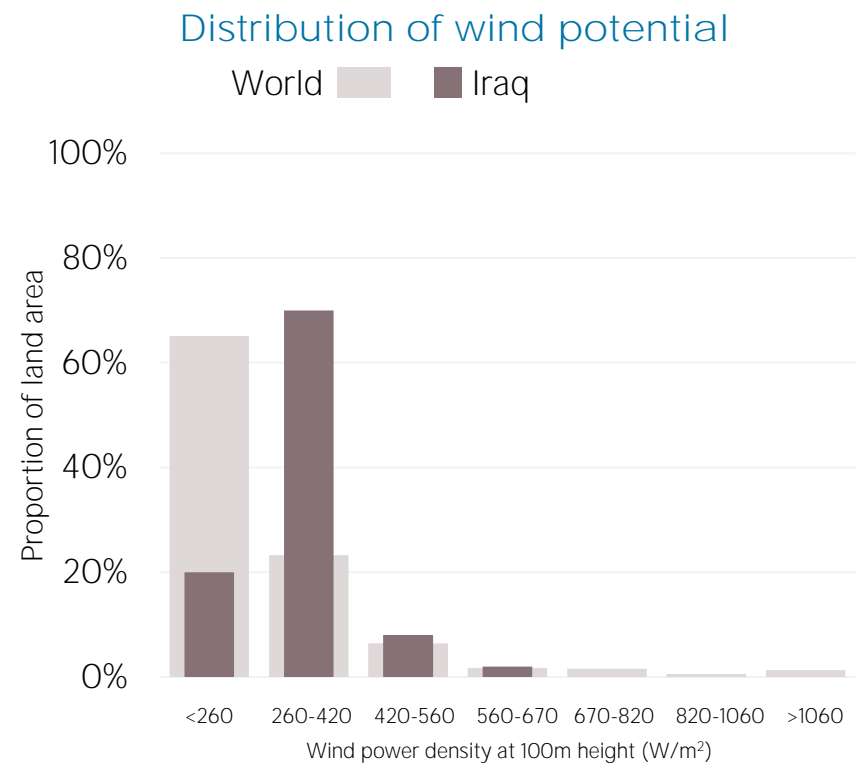
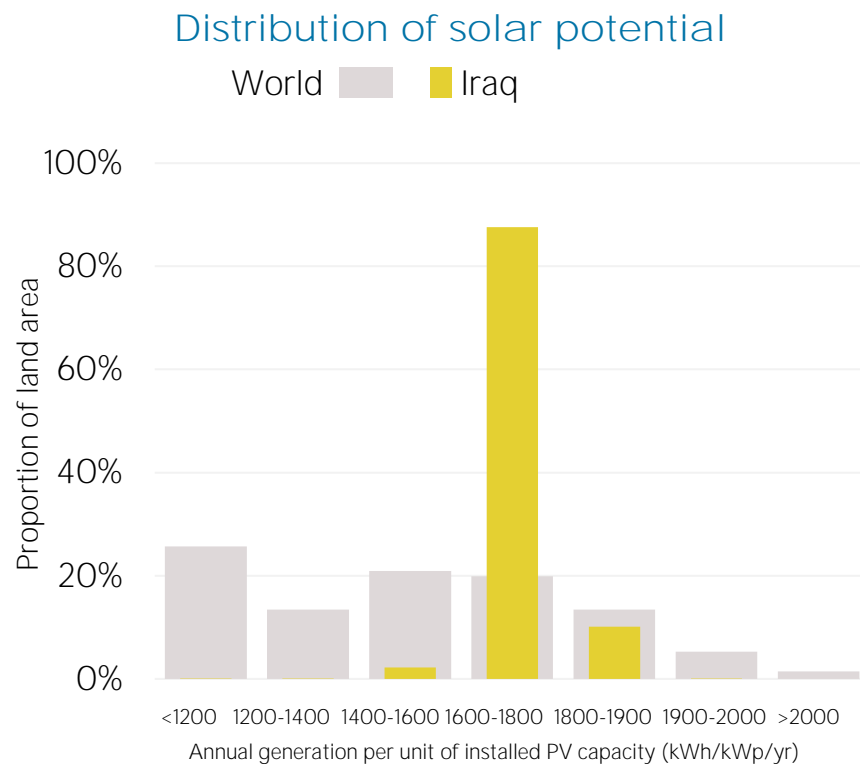
Avoided emissions from renewable elec. & heat



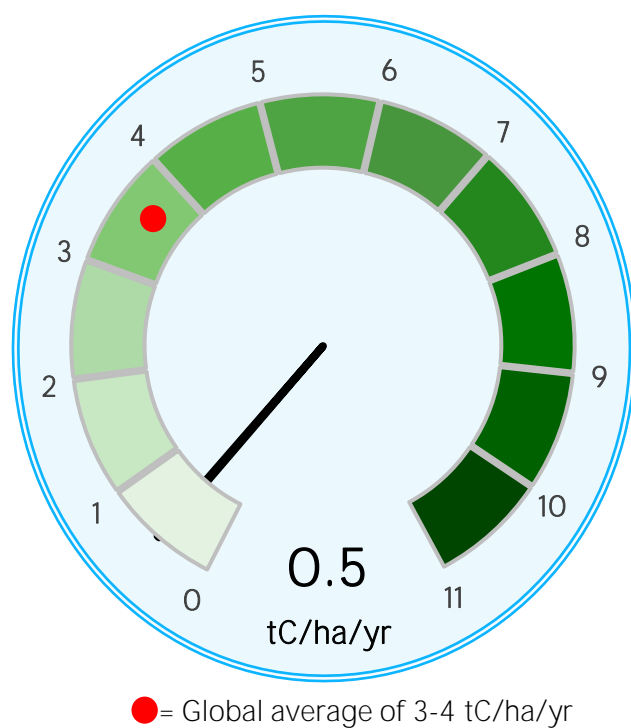
CO₂ emission factor for elec. & heat generation



RENEWABLE RESOURCE POTENTIAL



Biomass potential: net primary production



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/m²) 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 per year.

Sources: IRENA statistics, plus data from the following sources: UN SDG Database (original sources: WHO; World Bank; IEA; IRENA; and UNSD); UN World Population Prospects; UNSD Energy Balances; UN COMTRADE; World Bank World Development Indicators; EDGAR; REN21 Global Status Report; IEA-IRENA Joint Policies and Measures Database; IRENA Global Atlas; and World Bank Global Solar Atlas and Global Wind Atlas.

Additional notes: Capacity per capita and public investments SDGs only apply to developing areas. Energy self-sufficiency has been defined as total primary energy production divided by total primary energy supply. Energy trade includes all commodities in Chapter 27 of the Harmonised System (HS). Capacity utilisation is calculated as annual generation divided by year-end capacity x 8,760h/year. Avoided emissions from renewable power is calculated as renewable generation divided by fossil fuel generation multiplied by reported emissions from the power sector. This assumes that, if renewable power did not exist, fossil fuels would be used in its place to generate the same amount of power and using the same mix of fossil fuels. In countries and years where no fossil fuel generation occurs, an average fossil fuel emission factor has been used to calculate the avoided emissions.

These profiles have been produced to provide an overview of developments in renewable energy in different countries and areas. The IRENA statistics team would welcome comments and feedback on its structure and content, which can be sent to statistics@irena.org.

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