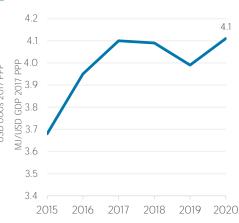
# Chad

## COUNTRY INDICATORS AND SDGS

7.3.1 Energy intensity





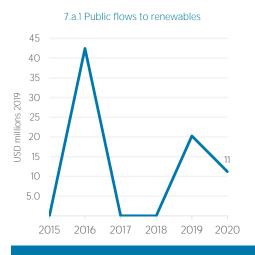
7.1.1 Access to electricity (% population)
7.1.2 Access to clean cooking (% population)
7.2.1 Renewable energy (% TFEC)

International Renewable Energy Agency

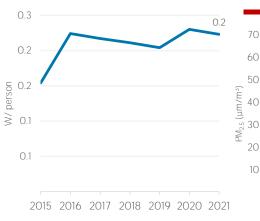
8% 2015 2016 2017 2018 2019 2020 2021

11%

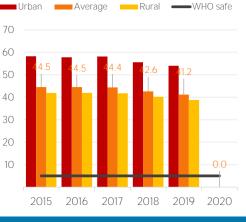
20%



7.b.1 Per capita renewable capacity



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

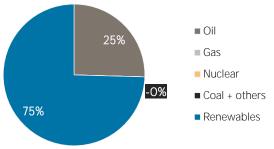


TOTAL ENERGY SUPPLY (TES)

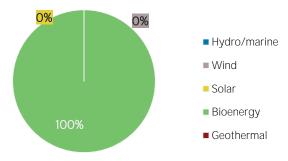
Total Energy Supply (TES) 2015 2020 Non-renewable (TJ) 15 789 25 901 Renewable (TJ) 70 910 75 912 Total (TJ) 86 699 101 813 Renewable share (%) 82 75 Growth in TES 2015-20 2019-20 Non-renewable (%) +64.0 +29.8 Renewable (%) +7.1 +1.3 Total (%) +17.4 +7.3

Primary energy trade	2015	2020
Imports (TJ)	7 485	102
Exports (TJ)	295 312	269 272
Net trade (TJ)	287 827	269 170
Imports (% of supply)	9	0
Exports (% of production)	79	72
Energy self-sufficiency (%)	433	365



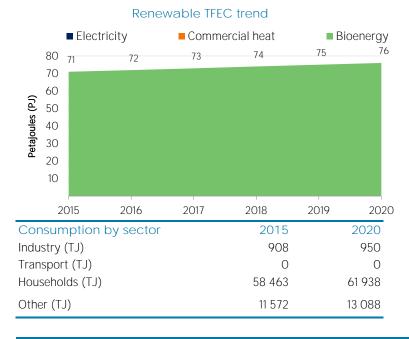


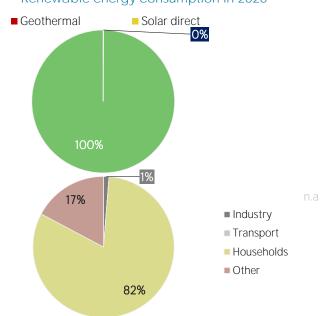
Renewable energy supply in 2020



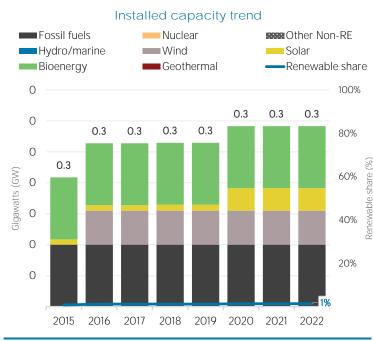
### RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable energy consumption in 2020

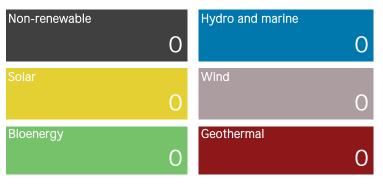




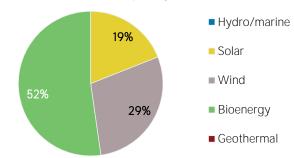
# ELECTRICITY CAPACITY



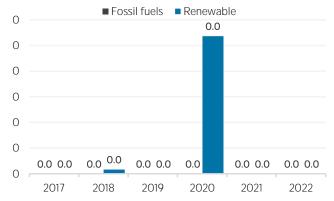
### Net capacity change in 2022 (MW)



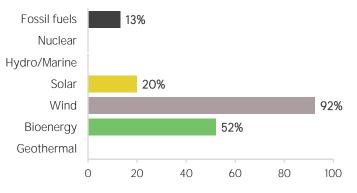
Renewable capacity in 2022



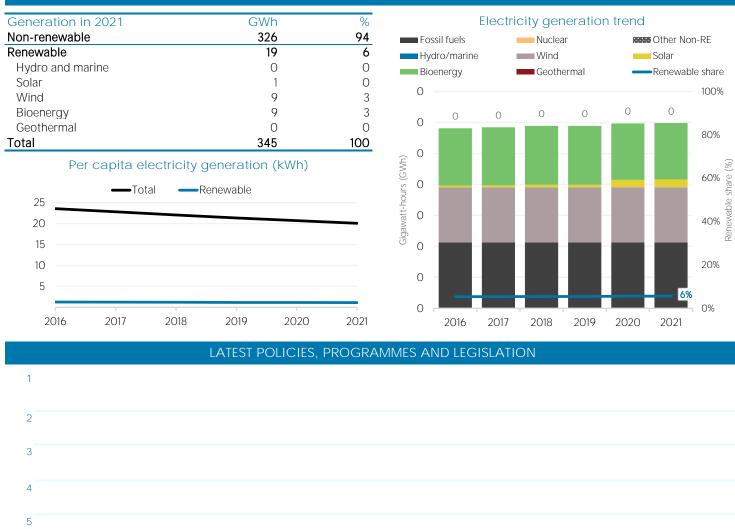
# Net capacity change (GW)

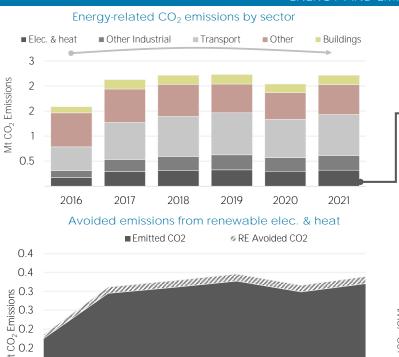


### Capacity utilisation in 2021 (%)

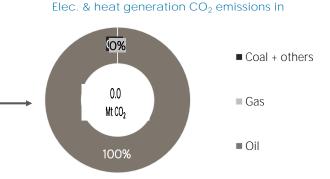


### ELECTRICITY GENERATION

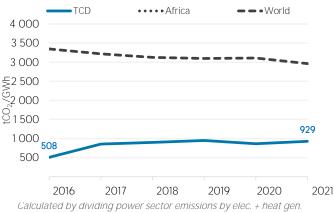




ENERGY AND EMISSIONS



#### CO2 emission factor for elec. & heat generation

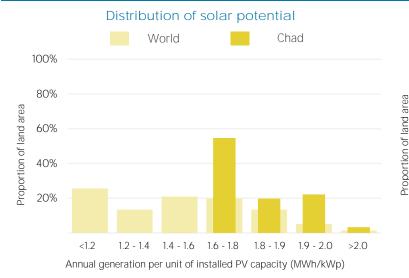


2016 2017 2018 2019 2020 Avoided emissions based on tossil tuel mix used for power

₹

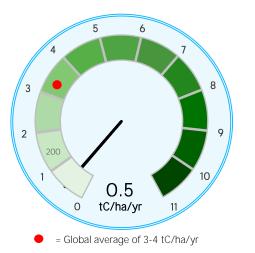
0.1 0.1

#### RENEWABLE RESOURCE POTENTIAL



# Distribution of wind potential World Chad 100% 80% 60% 40% 20%

#### 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/m<sup>2</sup>) 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

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 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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