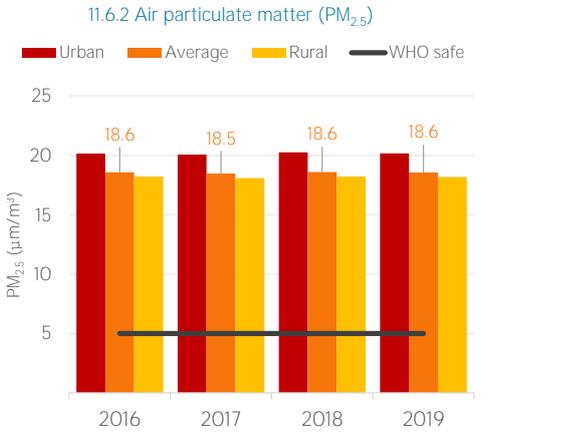
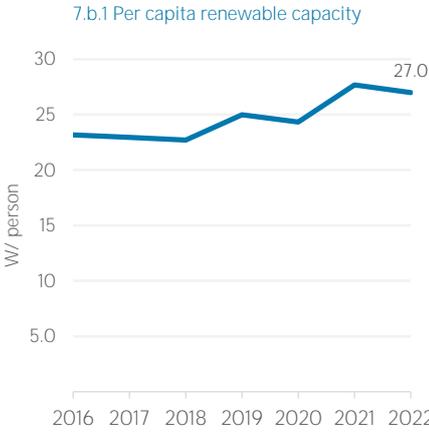
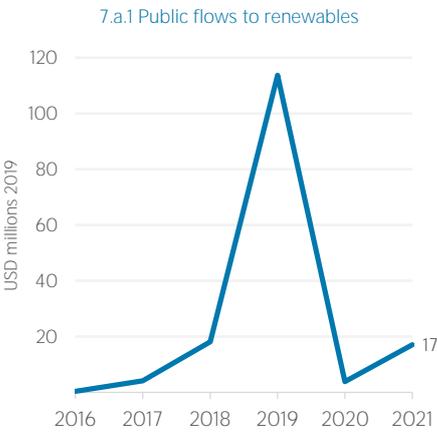
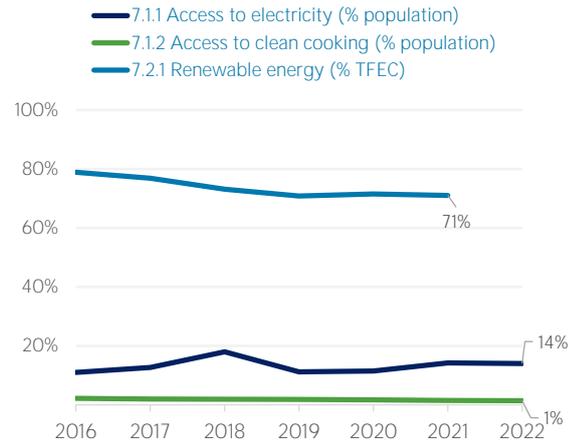
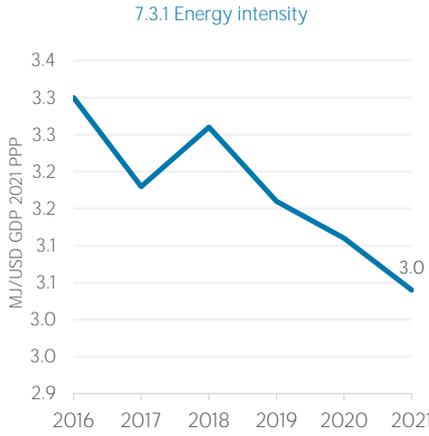
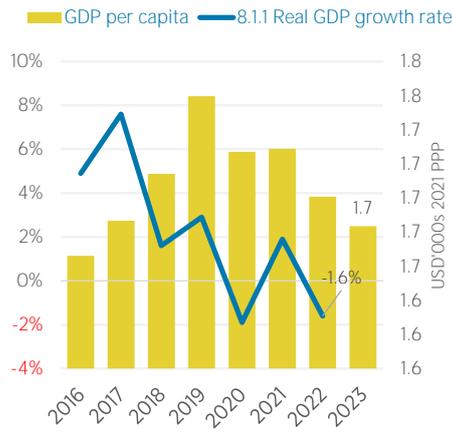


COUNTRY INDICATORS AND SDGS



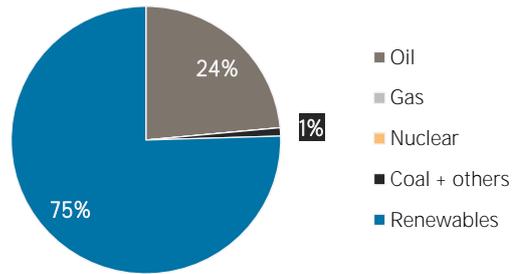
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2016	2021
Non-renewable (TJ)	15 578	22 406
Renewable (TJ)	65 296	68 951
Total (TJ)	80 874	91 357
Renewable share (%)	81	75

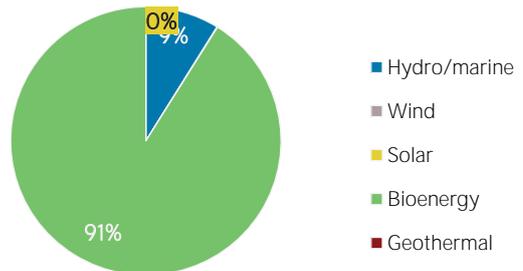
Growth in TES	2016-21	2020-21
Non-renewable (%)	+43.8	-0.5
Renewable (%)	+5.6	+0.9
Total (%)	+13.0	+0.5

Primary energy trade	2016	2021
Imports (TJ)	14 840	19 470
Exports (TJ)	298	72
Net trade (TJ)	- 14 542	- 19 398
Imports (% of supply)	18	21
Exports (% of production)	0	0
Energy self-sufficiency (%)	82	77

Total energy supply in 2021

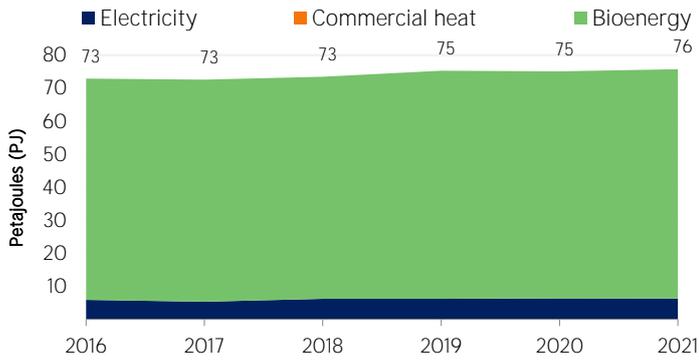


Renewable energy supply in 2021



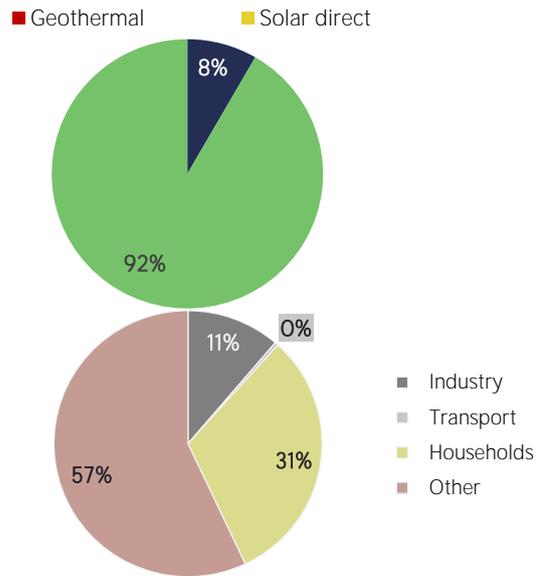
# RENEWABLE ENERGY CONSUMPTION (TFEC)

### Renewable TFEC trend



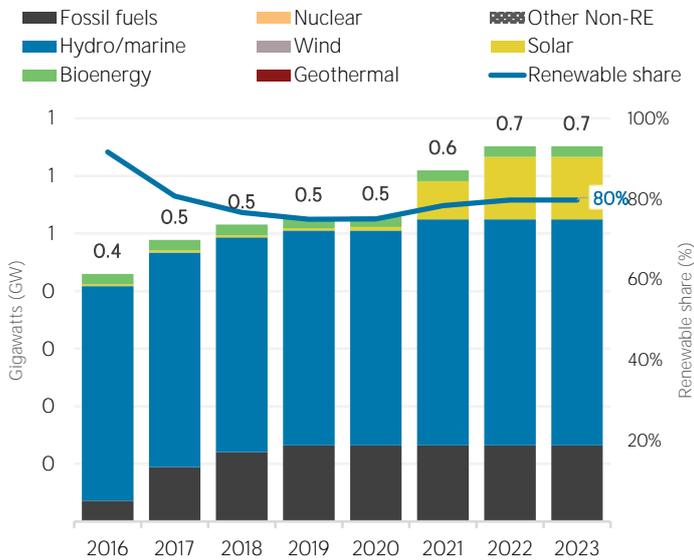
Consumption by sector	2016	2021
Industry (TJ)	8 955	8 552
Transport (TJ)	0	303
Households (TJ)	24 334	23 701
Other (TJ)	39 632	43 205

### Renewable energy consumption in 2021

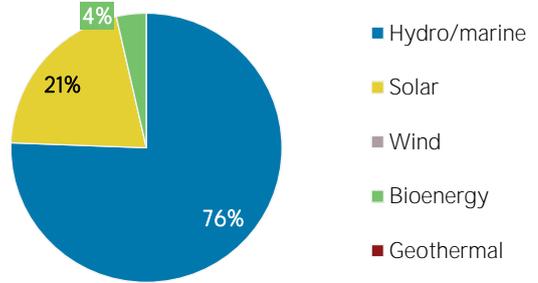


# ELECTRICITY CAPACITY

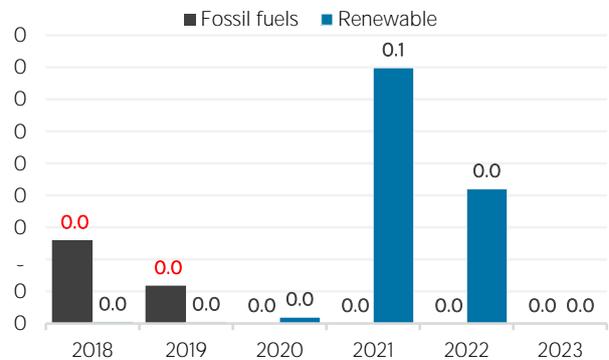
### Installed capacity trend



### Renewable capacity in 2023



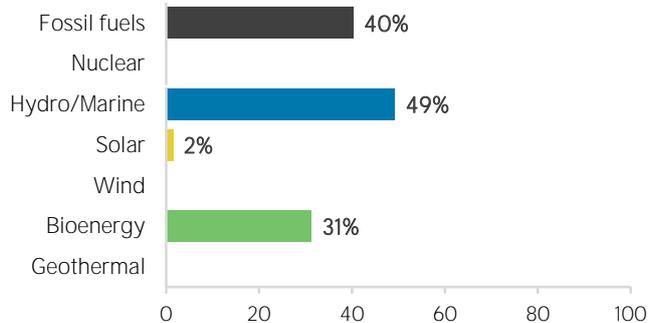
### Net capacity change (GW)



### Net capacity change in 2023 (MW)

Non-renewable	0	Hydro and marine	0
Solar	0	Wind	0
Bioenergy	0	Geothermal	0

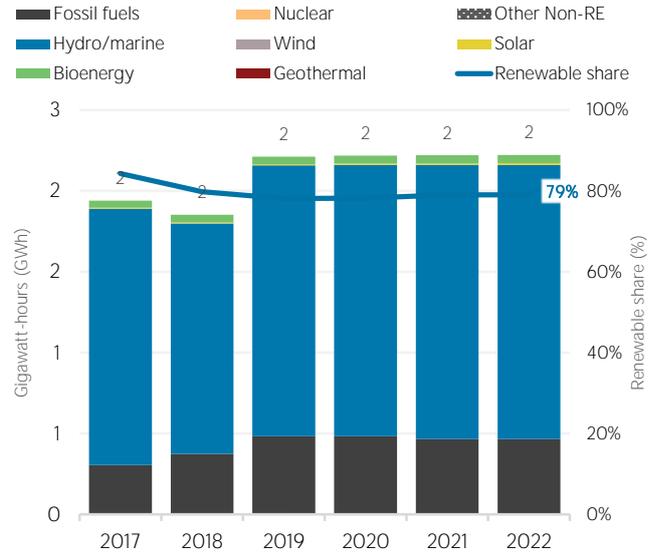
### Capacity utilisation in 2022 (%)



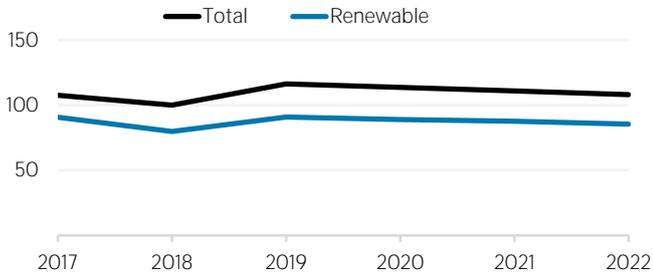
## ELECTRICITY GENERATION

Generation in 2022	GWh	%
<b>Non-renewable</b>	<b>466</b>	<b>21</b>
<b>Renewable</b>	<b>1 757</b>	<b>79</b>
Hydro and marine	1 694	76
Solar	12	1
Wind	0	0
Bioenergy	51	2
Geothermal	0	0
<b>Total</b>	<b>2 223</b>	<b>100</b>

### Electricity generation trend



### Per capita electricity generation (kWh)

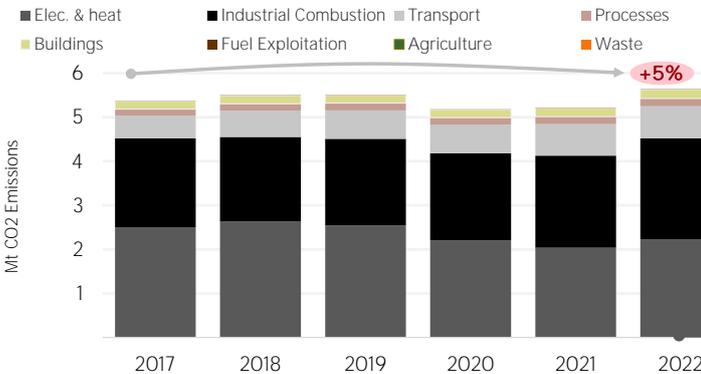


## LATEST POLICIES, PROGRAMMES AND LEGISLATION

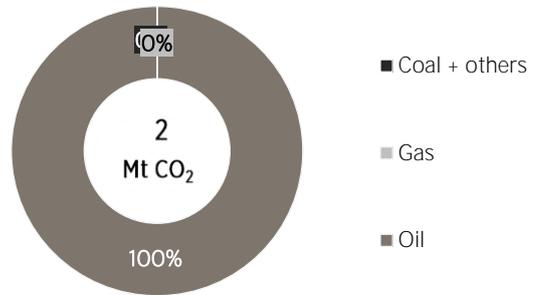
- 1 Malawi Action Plan for the Open Government Partnership 2023-2025 2023
- 2 Malawi Growth and Development Strategy II (MGDS) 2011-2016 2012
- 3 Malawi Electricity Act 2004 2004
- 4 Rural Electrification Act 2004
- 5 Testing Centre in Renewable Energy Technologies (TCRET) 2004

## ENERGY AND EMISSIONS

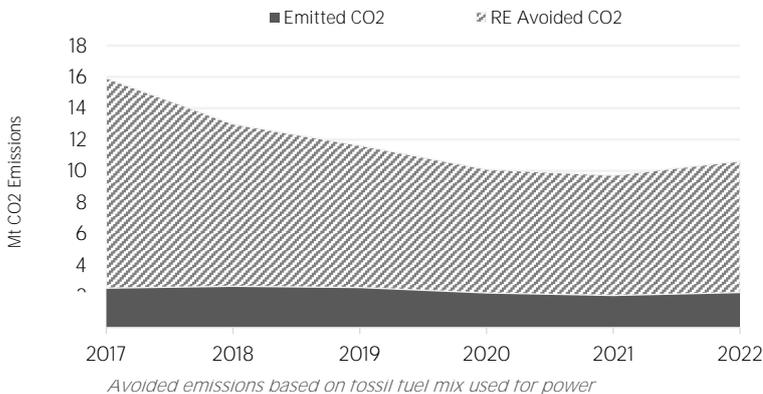
### CO<sub>2</sub> emissions by sector



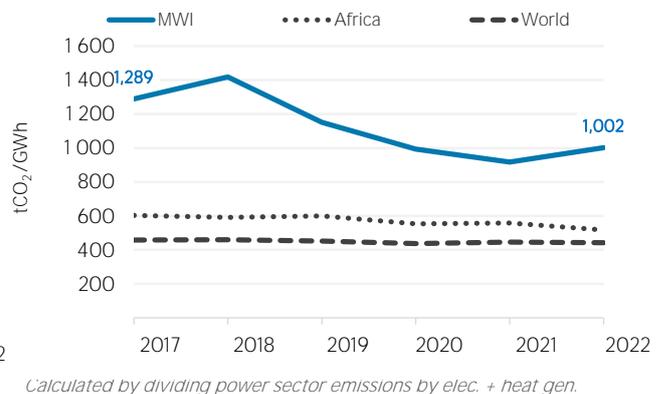
### Elec. & heat generation CO<sub>2</sub> emissions in



### Avoided emissions from renewable elec. & heat



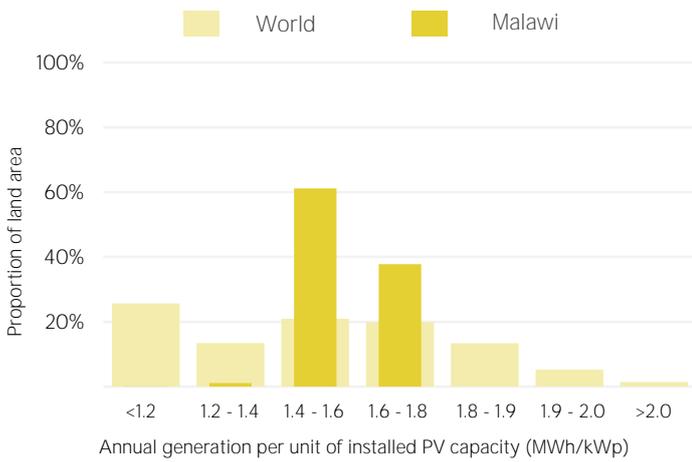
### CO<sub>2</sub> emission factor for elec. & heat generation



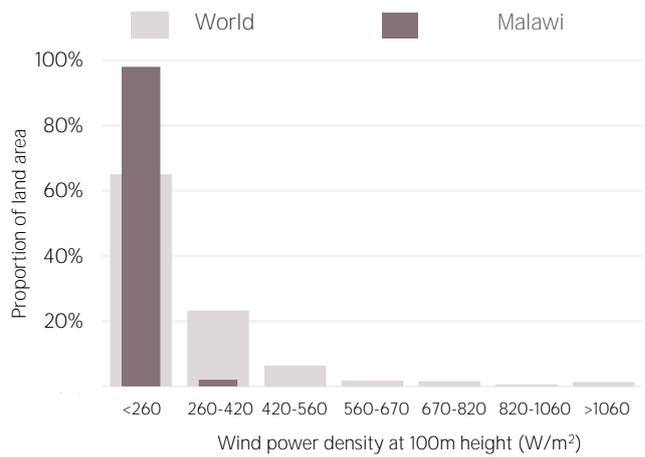
Avoided emissions based on fossil fuel mix used for power

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

Distribution of solar potential



Distribution of wind 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/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 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](mailto:statistics@irena.org)

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