Guatemala

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)

98%
48%
0%

7.a.1 Public flows to renewables

7.b.1 Per capita renewable capacity

163.1

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

■ Urban ■ Average ■ Rural — WHO safe

| | 25.4 | 25.0 | 23.8 | 21.7 | 20.7 | 0.0 |
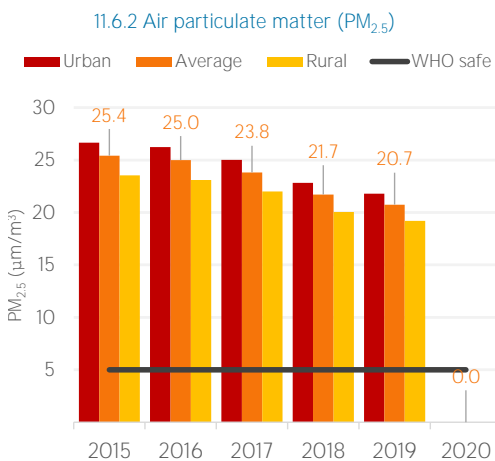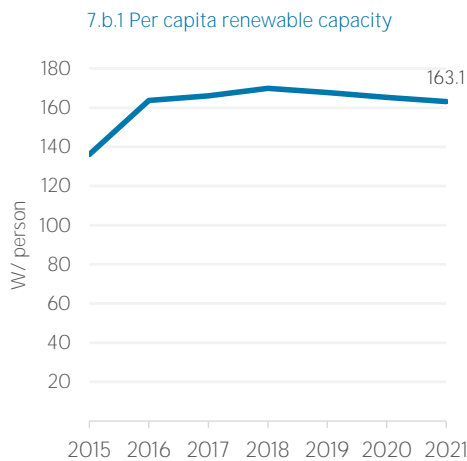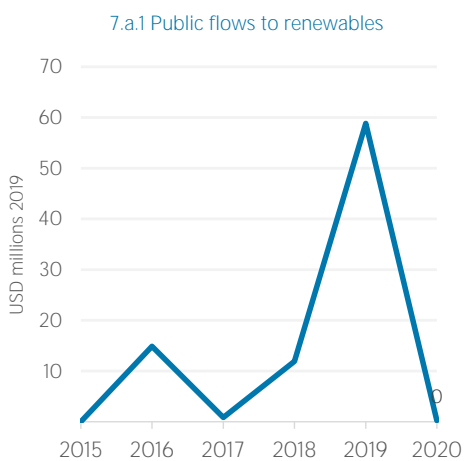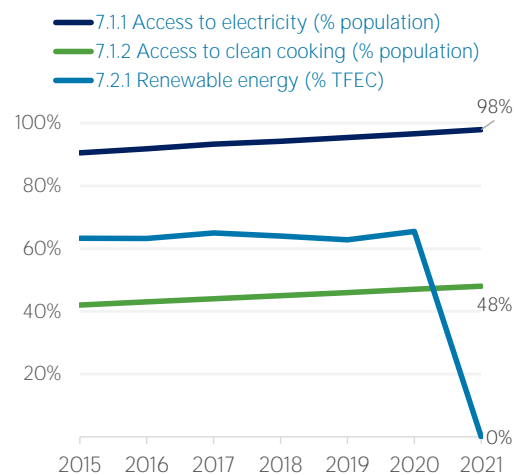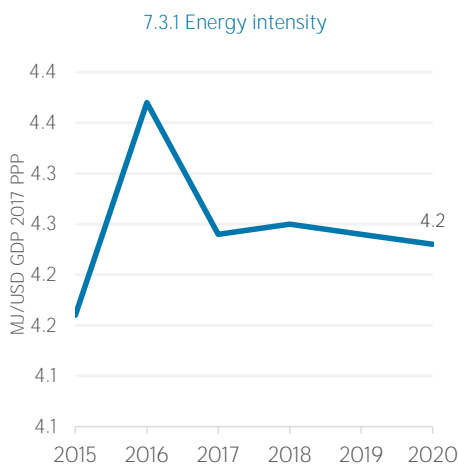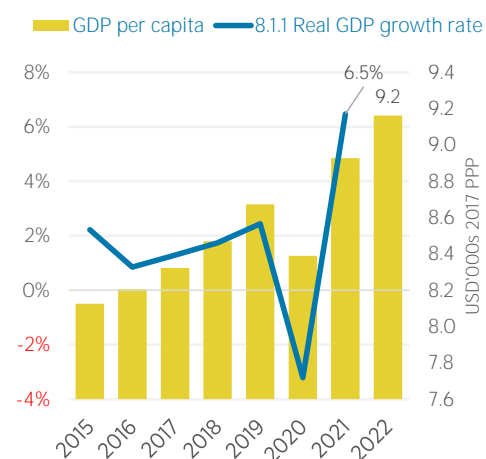
TOTAL ENERGY SUPPLY (TES)

Total Energy Supply (TES)	2015	2020
Non-renewable (TJ)	190 398	214 714
Renewable (TJ)	291 497	341 512
Total (TJ)	481 895	556 226
Renewable share (%)	60	61

Growth in TES	2015-20	2019-20
Non-renewable (%)	+12.8	-11.9
Renewable (%)	+17.2	+3.1
Total (%)	+15.4	-3.3

Primary energy trade	2015	2020
Imports (TJ)	249 417	238 859
Exports (TJ)	38 432	22 255
Net trade (TJ)	- 210 985	- 216 604
Imports (% of supply)	52	43
Exports (% of production)	12	6
Energy self-sufficiency (%)	65	64

Total energy supply in 2020

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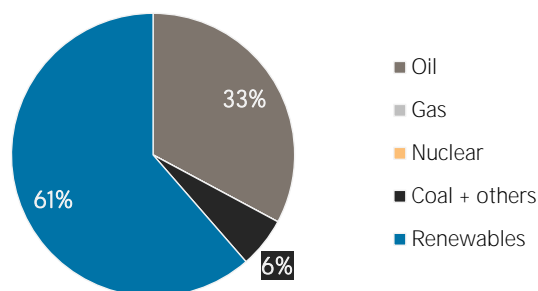
Renewable energy supply in 2020

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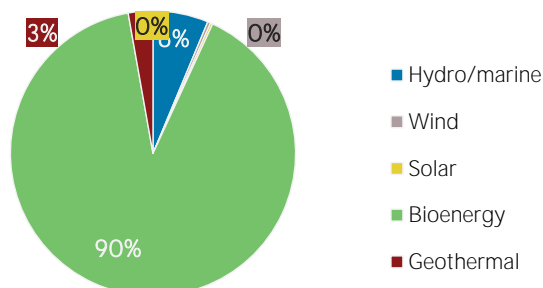
RENEWABLE ENERGY CONSUMPTION (TFEC)

Renewable TFEC trend

Legend: Electricity, Commercial heat, Bioenergy

Values (Petajoules, PJ): 318 (2015), 367 (2016), 355 (2017), 355 (2018), 363 (2019), 378 (2020)
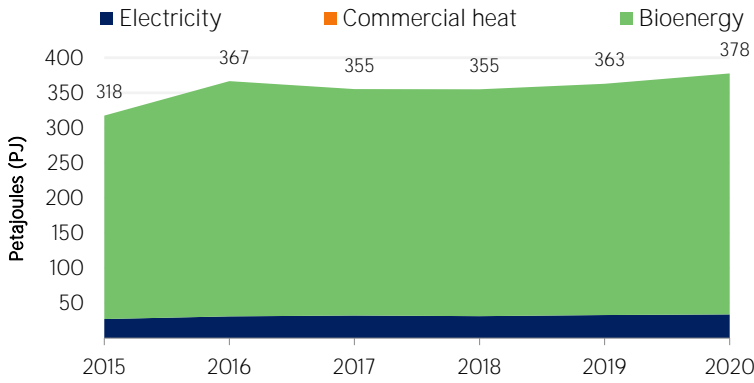
Consumption by sector	2015	2020
Industry (TJ)	10 163	11 715
Transport (TJ)	0	0
Households (TJ)	210 943	256 744
Other (TJ)	96 442	109 190

Renewable energy consumption in 2020

Legend: Geothermal, Solar direct

9%, 91%

3%, 29%, 68%

n.a.

Legend: Industry, Transport, Households, Other
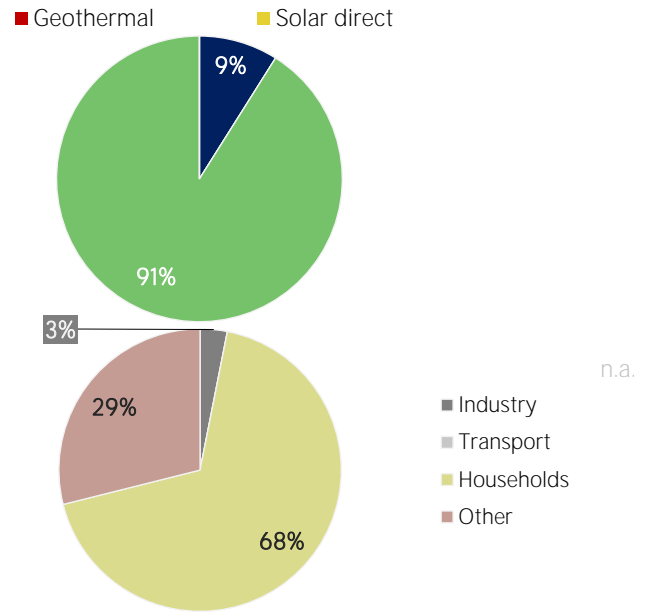
ELECTRICITY CAPACITY

Installed capacity trend

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

Values (Gigawatts, GW): 3.7 (2015), 4.2 (2016), 4.1 (2017), 4.1 (2018), 4.1 (2019), 4.1 (2020), 3.8 (2021), 3.8 (2022)

Renewable share: 71%

Net capacity change in 2022 (MW)

Non-renewable 0	**Hydro and marine** + 2
Solar + 4	**Wind** 0
Bioenergy 0	**Geothermal** 0
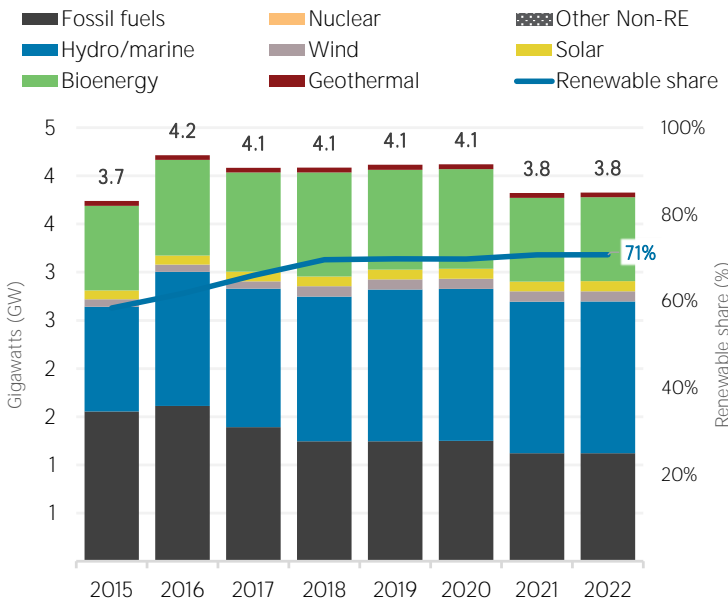
Renewable capacity in 2022

2%, 32%, 4%, 4%, 58%

Legend: Hydro/marine, Solar, Wind, Bioenergy, Geothermal

Net capacity change (GW)

Legend: Fossil fuels, Renewable

Year	Fossil fuels	Renewable
2017	- 0.2	0.1
2018	- 0.1	0.1
2019		0.0
2020	0.0	0.0
2021	- 0.1	-0.2
2022	0.0	0.0
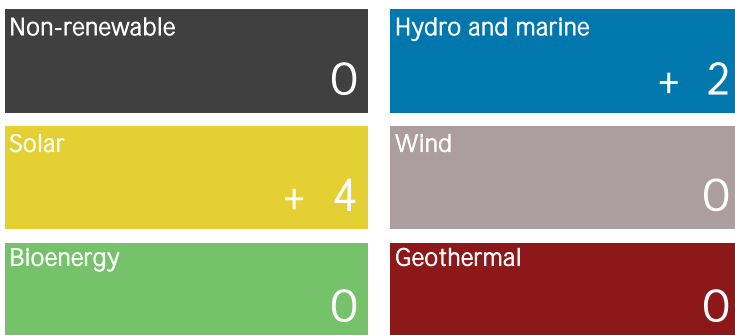
Capacity utilisation in 2021 (%)

Fossil fuels	33%
Nuclear	
Hydro/Marine	43%
Solar	27%
Wind	34%
Bioenergy	31%
Geothermal	61%
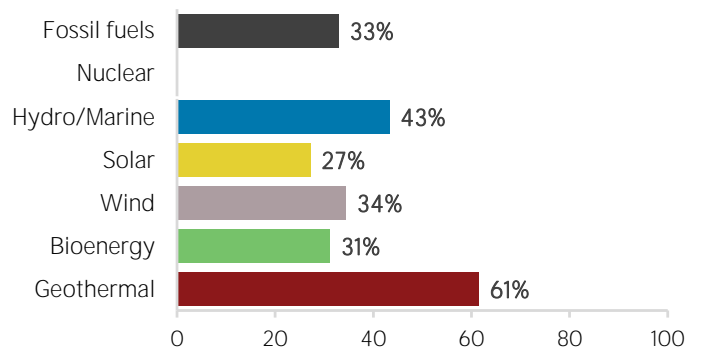
ELECTRICITY GENERATION

Generation in 2021	GWh	%
Non-renewable	3 419	27
Renewable	9 393	73
Hydro and marine	5 960	47
Solar	241	2
Wind	324	3
Bioenergy	2 603	20
Geothermal	265	2
Total	12 812	100

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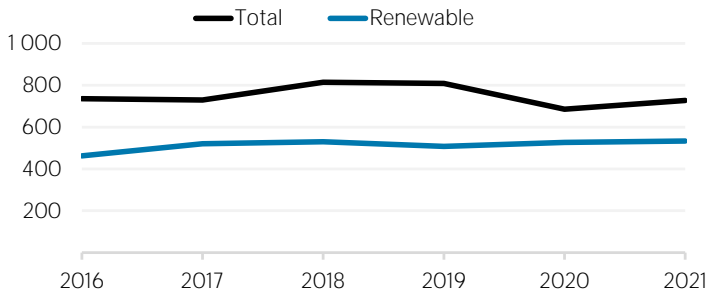
Electricity generation trend
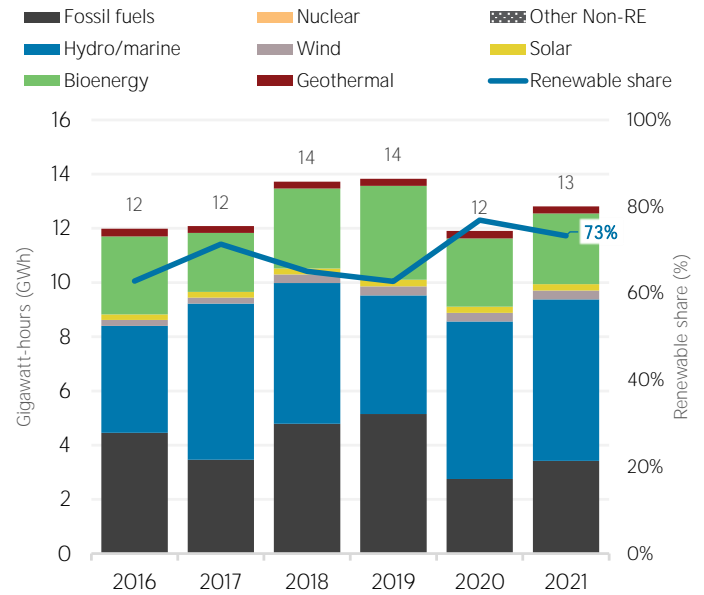
# LATEST POLICIES, PROGRAMMES AND LEGISLATION

|		
1	2022 Diesel subsidy	2022
2	Temporary Social Support for Propane consumers Law- 2021/2022 Temporary propane subsidy	2021
3	Indicative Plans of Generation and Transmission (Planes Indicativos de Generacion y Transmision)	2016
4	Technical Standard for Renewable Distributed Generation and Auto Producers with Excess of Energy - Net Metering (Norma técnica de generación distribuida renovable y usuarios autoproductores con excedentes de energía)	2014
5	National Energy Policy 2013-2027 (Politica Energetica 2013-2027)	2013

ENERGY AND EMISSIONS

Energy-related CO_2 emissions by sector
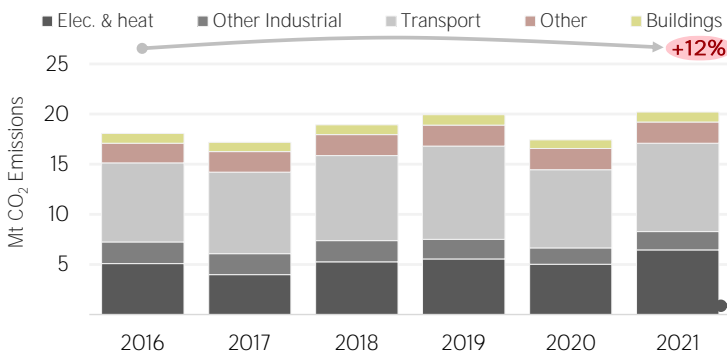
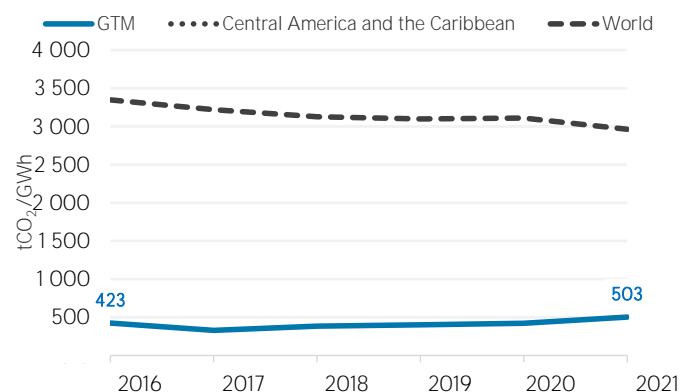## Elec. & heat generation CO_2 emissions in
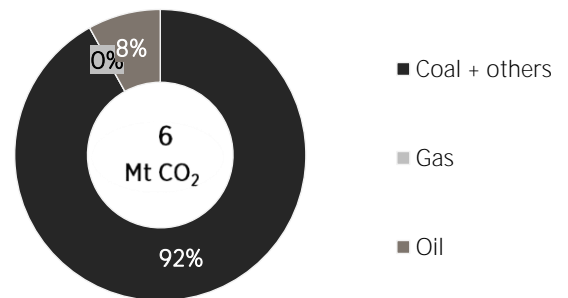
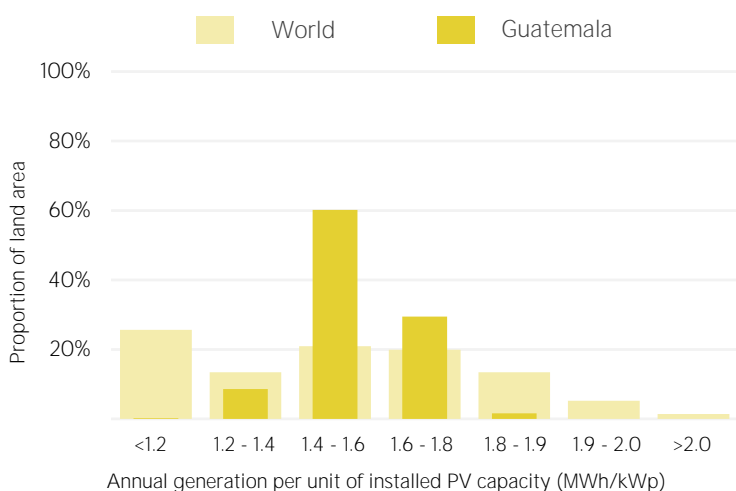## Avoided emissions from renewable elec. & heat
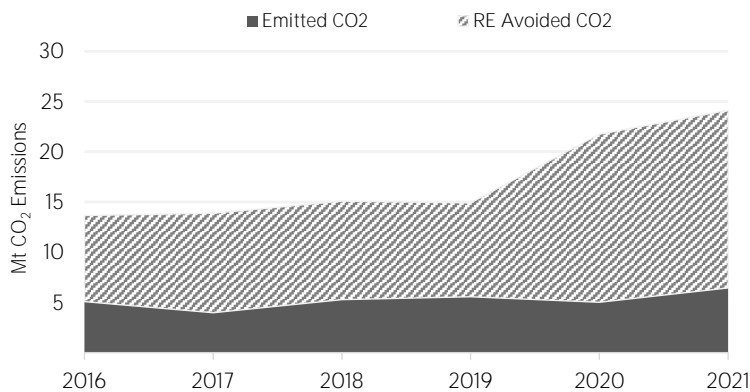
Avoided emissions based on fossil fuel mix used for power
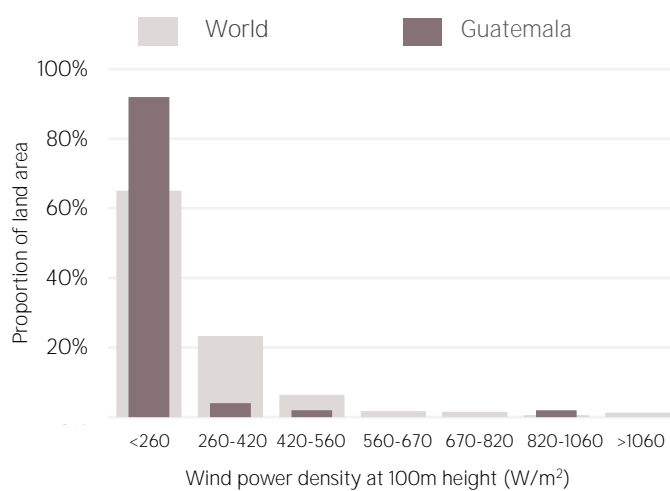
CO_2 emission factor for elec. & heat generation

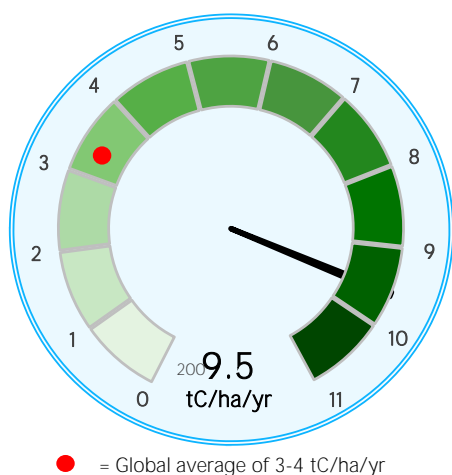*Calculated by dividing power sector emissions by elec. + heat gen.*

Distribution of solar potential

Proportion of land area

Legend: World (light yellow), Guatemala (dark yellow)

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

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

Distribution of wind potential

Proportion of land area

Legend: World (light grey), Guatemala (dark brown)

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

Wind power density at 100m height (W/m²)

Biomass potential: net primary production

9.5
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/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

IRENA
International Renewable Energy Agency

IRENA Headquarters
Masdar City
P.O. Box 236, Abu Dhabi
United Arab Emirates
www.irena.org