

# Mozambique (Country Report)

- The continental surface is 786,380 km<sup>2</sup>. With an Indian Ocean coastline of 2,740 Km
- Independence from Portugal in 1975
- In 1992 peace agreement
- Subsequent elections from 1999 to 2019 were won by FRELIMO.
- Official language is Portuguese
- Major religions are Christianity, indigenous beliefs and Islam
- Agriculture: cotton, cashew nuts, sugarcane, tea, cassava, corn, coconuts, sisal, citrus and tropical fruits, potatoes, sunflowers; beef, poultry
- Industry: aluminium, petroleum products, chemicals, textiles, cement, glass, asbestos, tobacco, food, beverages
- Our Currency is Metical.
- CO<sub>2</sub> emissions (t CO<sub>2</sub>/capita)- 0.18



## Economic Indicators

GDP **14.02** USD Billion (**2020**) GDP per capita **448.5**USD (**2020**)

For 2022, the government forecasts growth of 2.9%

Unemployment, total (% of total labor force) **4.0** (**2021**)

Inflation, consumer prices (annual %) **3.1** (**2020**)

Foreign direct investment, net inflows (% of GDP) **22.7** (**2020**)

Population, Total **31,255,435** (**2020**) Population growth(annual%) **2.9** (**2020**)

## Organizational Structure

- Ministry of Mineral Resources and Energy (MIREME)
- Center for Gemology and Lapidary
- National Geology Museum
- Energy Regulatory Authority (ARENE)
- National Petroleum Institute(INP)
- National Agency for Atomic Energy (ANEA)
- Energy Fund (FUNAE)
- Technical Unit for the Implementation of Hydroelectric Projects
- National Institute for Mines
- Geologic Institute of Mines
- EDM,EP - Electricity of Mozambique
- HCB,SA - Hydroelectric of Cahora Bassa
- Petromoc, SA - Petroleum of Mozambique, S.A.
- ENH, EP – National Hydrocarbons Enterprise, E.P.

## Reserves of Energy and Mineral Resources

5000 MW of hydropower.

Sedimentary basins of natural gas: onshore reserves (in Pande and Temane) have been discovered and off-shore areas in the Rovuma basin-100 trillion cubic feet of gas.

Massive deposits of coal in Tete- 23 billion tons

39% of households have access to electricity.





# Electricity Generation and Consumption

The projections for 2030 from the Power Sector Master Plan show an expected increase in the total installed capacity to 6,001 MW.

Hydropower is the dominating electricity source with 2,189 MW, 79% of the total energy mix, followed by 442 MW from gas (16%), 108 MW from heavy fuel oil (HFO) (4%) and 41 MW from solar (1%) (2020).[10]

There are six working hydropower stations across the country. HCB is responsible for most of the hydroelectric generation, with a capacity of 2,075 MW. In 2014, it supplied up to 88% of the power consumed in Mozambique. Due to the low electricity, the majority of the generation from HCB is exported to South Africa. Smaller shares are exported to Zimbabwe and Botswana. [4]

In 2018, the total primary energy supply was 10.43 Mtoe, from a total of 20.23 Mtoe produced that year. Final electricity consumption was only 13.63 TWh, however, this number has increased drastically by more than 2000% since 1990

Energy production	20.23 Mtoe
Total primary energy supply	10.43 Mtoe
Total electricity consumption	13.63 TWh
Electricity consumption per capita	0.5 MWh

# Past energy demand and supply

## Energy consumption (2015)

Electricity production	GWh
Coal	0
Oil	152
Gas	2554
Biofuels (solid biofuels)	0
Waste	0
Nuclear	0
Hydro	17207
Geothermal	0
Solar PV	0
Solar thermal	0
Wind	0
Tide	0
Other sources	0
Electricity production	19913

Source IEA Statistics 2015

Final Electricity Consumption	GWh
Industry	9426
Transport	0
Residential	1654
Commercial and Public Services	702
Agriculture/Forestry	30
Fishing	0
Other non-specified	1637
Final Electricity Consumption	13449

Source IEA Statistics 2015

## Demand (2012)

KTOE	2000	2005	2010	2015	2020	2025	2030	Average Annual Growth
								2010-2030
Charcoal	395	602	808	1 159	1 609	2190,6	2 915	6,6%
Electricity	34	41	77	153	229	301,7	372	8,2%
Kerosene	49	32	20	25	31	38,6	49	4,6%
LPG	8	14	16	32	62	103,6	168	12,4%
Wood	3 992	4 263	4 534	4 855	5 036	5092,8	4 962	0,5%
<b>Total</b>	<b>4 478</b>	<b>4 953</b>	<b>5 455</b>	<b>6 224</b>	<b>6 966</b>	<b>7727,3</b>	<b>8 466</b>	<b>2,2%</b>

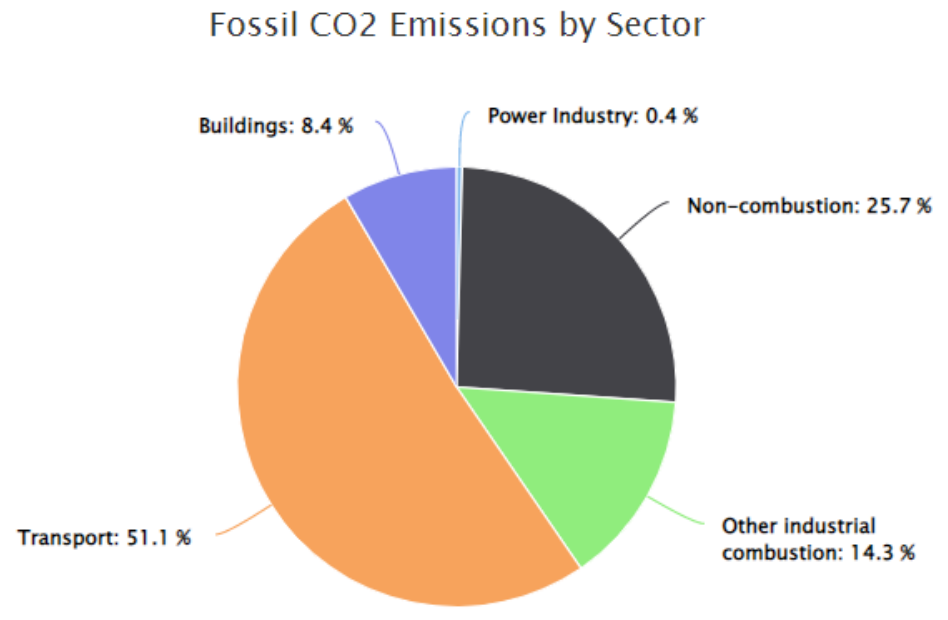
## Energy Demand by Households (Reference Scenario)

Scenario	New Households Connections	<i>Non-Electrified Population</i> (million people with no direct access to the grid)			
		2010	2015	2020	2025
↓	Average/year ↓				
Reference - High	147 000	19,0	18,6	18,1	17,5
Reference	120 000		18,8	19,2	20,0
Reference - Low	108 000		19,0	20,1	22,0

## Households LPG consumption

	2010	2015	2020	2025	2030	Average Annual Growth
<b>Reference - High - Demand (MT)</b>	<b>18,1</b>	<b>38,1</b>	<b>75,4</b>	<b>132,6</b>	<b>224,7</b>	<b>13,4%</b>
Ref - High - Households Using LPG (10 <sup>3</sup> )	137	289	571	1 005	1 702	78
<i>% of Urban Households consuming LPG</i>	<b>6,9%</b>	<b>11,6%</b>	<b>18,7%</b>	<b>26,8%</b>	<b>38,4%</b>	<i>New clients / Year (10<sup>3</sup>)</i>
Ref - High - Total Urban Households (10 <sup>3</sup> )		2500,7	3058,5	3754,4	4433,6	
<b>Reference - Demand (MT)</b>	<b>18,1</b>	<b>36,2</b>	<b>68,7</b>	<b>115,8</b>	<b>187,7</b>	<b>12,4%</b>
Reference - Households Using LPG (10 <sup>3</sup> )	137	274	520	877	1 422	64
<i>% of Urban Households consuming LPG</i>	<b>6,9%</b>	<b>11,1%</b>	<b>17,3%</b>	<b>23,9%</b>	<b>33,0%</b>	<i>New clients / Year (10<sup>3</sup>)</i>
Reference - Total Urban Households (10 <sup>3</sup> )	1999,2	2472,8	3001,9	3668,9	4312,5	4%
<b>Reference - Low - Demand (MT)</b>	<b>18,1</b>	<b>33,9</b>	<b>61,3</b>	<b>99,3</b>	<b>156,1</b>	<b>11,4%</b>
Ref - Low - Households Using LPG (10 <sup>3</sup> )	137	257	464	752	1 182	52
<i>% of Urban Households consuming LPG</i>	<b>6,9%</b>	<b>10,7%</b>	<b>16,1%</b>	<b>21,4%</b>	<b>28,4%</b>	<i>New clients / Year (10<sup>3</sup>)</i>
Ref - Low - Total Urban Households (10 <sup>3</sup> )		2408,9	2882,2	3515,3	4156,4	

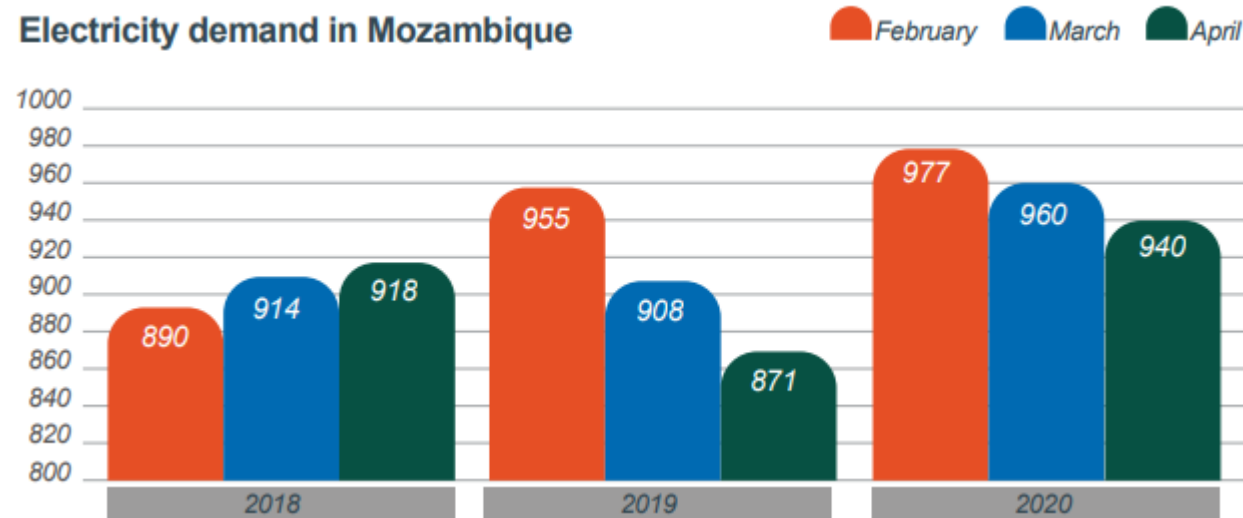
# CO2 Emission



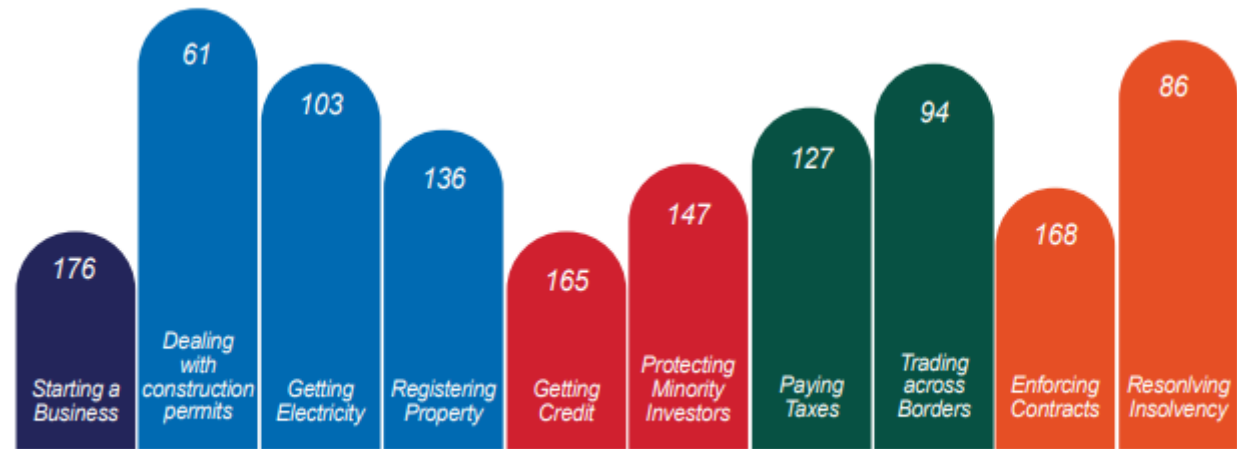
- Fossil CO2 emissions in Mozambique were **5,859,171** tons in 2016.
- CO2 emissions increased by 2.22% over the previous year, representing an increase by **127,381** tons over 2015, when CO2 emissions were **5,731,789** tons.



# COVID Impact on the Energy Supply and Demand



# Challenges



# Appendix

## Electricity Tariffs for different uses in low voltage in 2021

Recorded Consumption (kWh)	Sale Price				Flat Rate (Mt/kWh)
	Social Tariff (Mt/kWh)	Household Tariff (Mt/kWh)	Farming Tariff (Mt/kWh)	General Tariff (Mt/kWh)	
From 0 to 100	1.07				
From 0 to 200		6.63	4.08	10.30	257.97
From 201 to 500		9.39	5.81	14.71	257.97
Above a 500		9.85	6.39	16.10	257.97
Pre-Payment	1.07	8.44	5.65	14.75	

## Electricity Tariffs for Major Consumers of Low, Medium and High Voltage in 2021

Class of Consumers	Sale Price		Flat Rate (Mt)
	(Mt/kWh)	(Mt/kWh)	
Major Consumers of Low Voltage	4.70	361.19	602.28
Medium Voltage	4.06	422.63	2,826.99
Medium Voltage (Agricultural)	2.51	288.59	2,826.99
High Voltage	3.99	510.27	2,826.99

**Thank You!**