



Federal Ministry
for Economic Affairs
and Energy



MITTELSTAND
GLOBAL
ENERGY SOLUTIONS
MADE IN GERMANY

Target Market Analysis - Zambia

Status: August 2018

Information concerning the potential for
Renewable Energy Technologies and
Energy Efficiency

Facilitator

1. Regional Overview

Angola

- GDP = 89.63 bn. USD
- GDP per capita: 6 220 USD
- Population: 28.8 million,
- Access to Electricity: 30%
- Installed: 3 433 MW
- Tariff: \$ 5.4.0 cents/kwh

Botswana

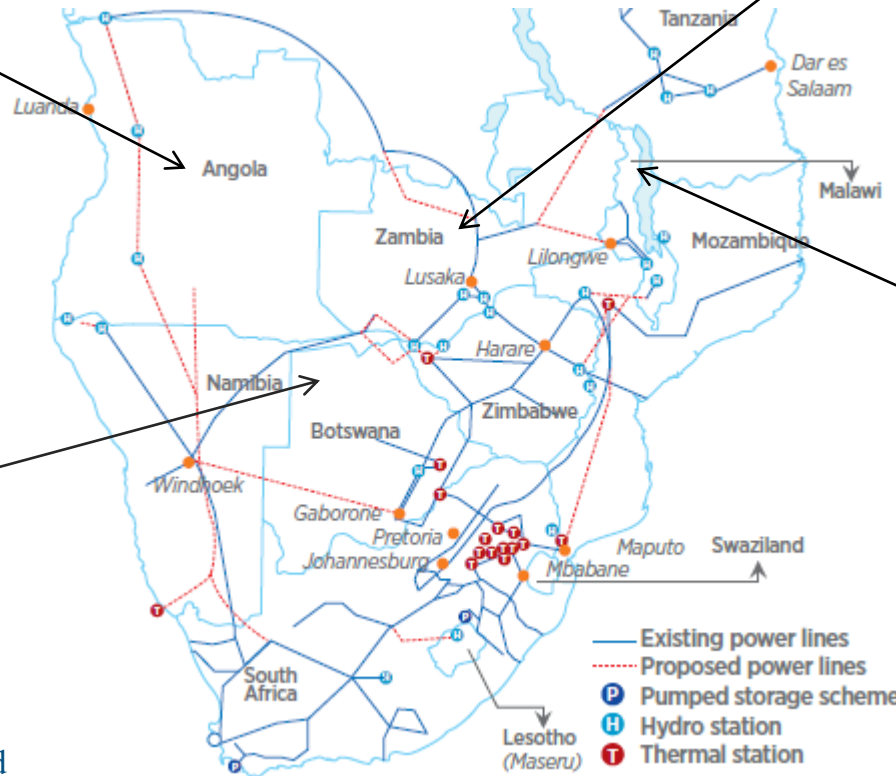
- GDP = 15.3 bn. USD
- GDP per capita: 6 788 USD
- Population: 2.3 million,
- Access to Electricity: 66%
- Installed: 450 MW Coal fired
- Tariff: \$ 6 cents/kwh

Zambia

- GDP = 19.5 bn. USD
- GDP per capita: 3,997 USD
- Population: 16.4 million
- Installed: 2411 MW
- Access to Electricity: 27%
- Tariff: \$ 6 cents

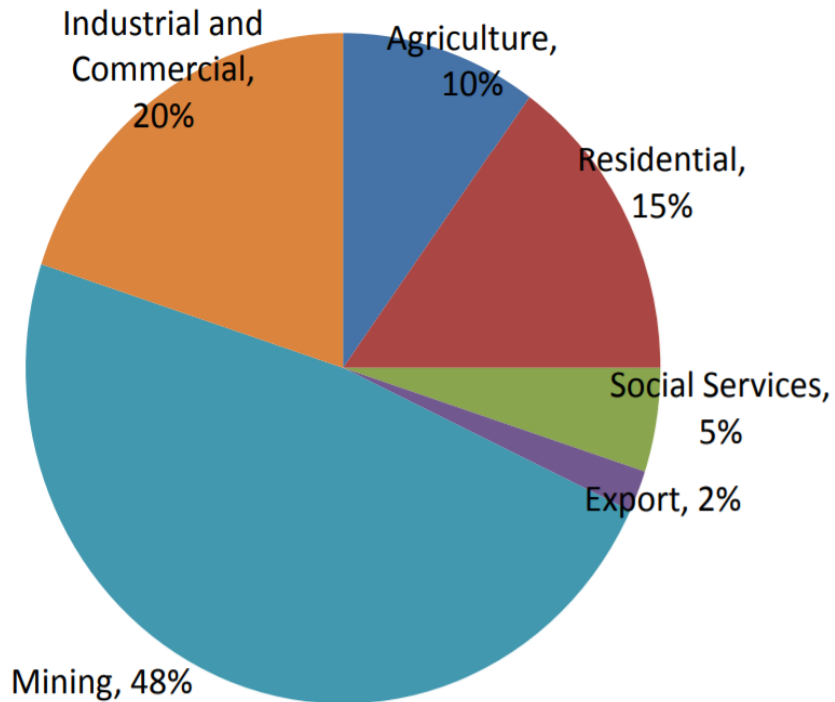
Malawi

- GDP = 5.4 bn. USD
- GDP per capita: 1084 USD
- Population: 18 million
- Installed: 363 MW
- Access to Electricity: 12%
- Tariff: \$ 9 cents



2. Energy Market

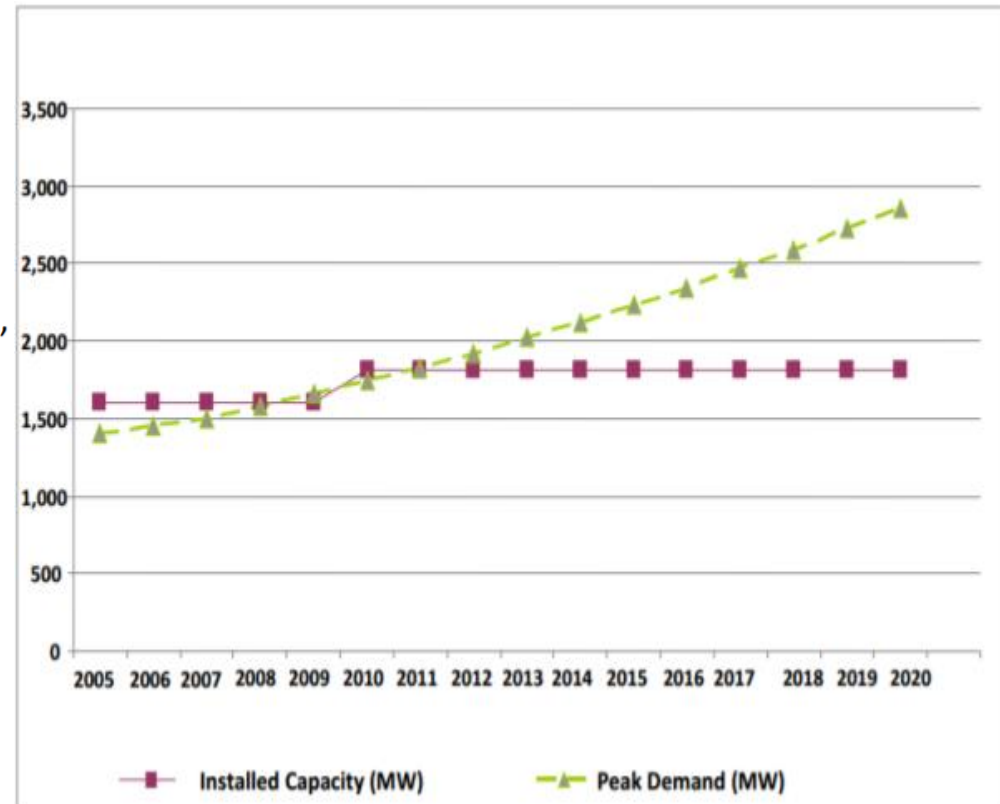
Electricity Consumption Per Sector



Status: 2016

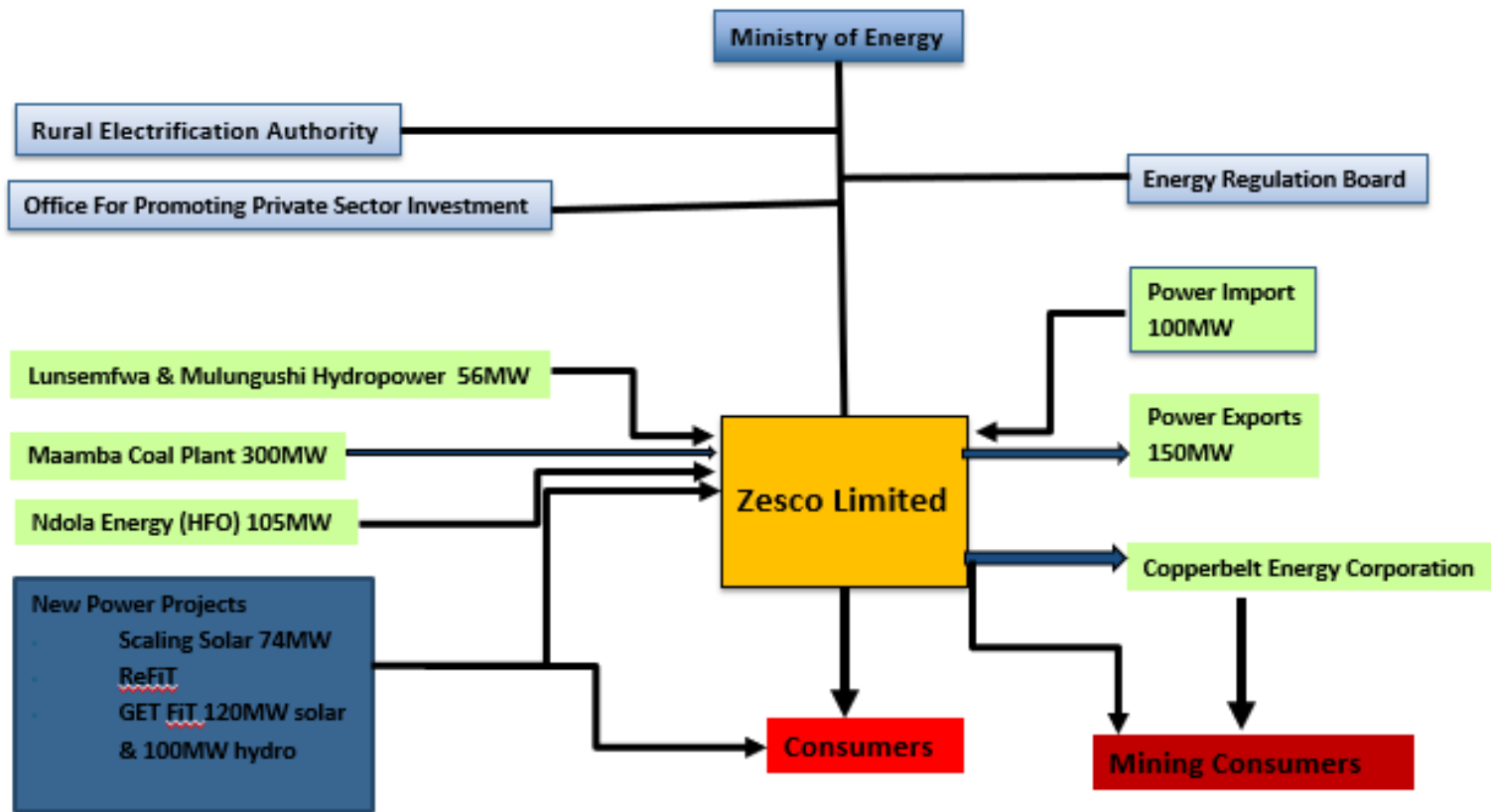
Source: Ministry of Energy, 2016

Electricity demand growth and projections



Source: Zambia Development Agency, 2014

2. Zambia's Electricity System



Zengamina Mini Hydro
0.75MW

Mpata Solar Mini Grid
60KW

Shiwangandu Mini Hydro
1MW

4. Electricity Tariffs - Commercial

Industry	Fixed Charge USD/ Month	Time: 06:00 – 18:00		Time: 18:00 – 22:00		Time: 22:00 – 06:00	
		Energy Charge	MD Charge/ kVA	Peak Energy Charge	Peak MD Charge/kVA	Off Peak Energy Charge	Off Peak MD Charge/kVA
Upto 15 kVA	9.64	0.054	-	-	-	-	-
16 -300 kVA	23.9	0.035	2.45	0.044	3.06	0.026	1.2
301 – 2000 kVA	47.8	0.030	4.5	0.037	5.7	0.023	2.2
2001 – 7,500 kVA	101.5	0.025	7.3	0.03	9.13	0.018	3.6
Above 7500 kVA	202.9	0.021	7.3	0.025	9.18	0.016	3.7

Applies for:

- Factories in the field of: Manufacturing, value addition, processing of goods (including office buildings), agriculture etc.
- Three phase 16 kVA

NOTE; The above tariffs are:-

- (a) Exclusive of 3% Government excise duty**
- (b) Exclusive of 16% Value Added Tax (VAT)**
- (c) In USD**
- (d) MD Charges are paid monthly**

5. Policy Framework

2008

National Energy Policy
(Revised)

- Energy Management- SI No. 32 & 33 Tax waiver offered on energy efficient equipment
- Household Energy- reduce dependence on wood fuel

2017

Vision 2030

- Increasing the levels of national electrification from 25% to 66%, with 90% in urban areas and 50% in rural areas.

2017

Seventh National
Development Plan

- Diversification in energy generation using Renewable energy resources
- Introduction of cost reflective tariffs



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Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Source: mndp.gov.zm

GIZ GmbH | Target Market Analysis Zambia | 24.08.2018

6. RE Promotion

REFiT

- Renewable Energy Feed-In Tariff Regulatory Framework and a corresponding REFiT Pricing Methodology
- power purchase agreements in respect of international, private power projects.

Scaling Solar

- International tender for two utility scale solar power projects of up to 50 MW each.
- 48 developers, of which 11 were
- NEOEN S.A.S. / First Solar Inc. (50 MW) and Enel Green Power S.p.A. (34 MW) at 6.02¢\$/ kWh and 7.84¢\$/ kWh, 25 yrs. PPA.

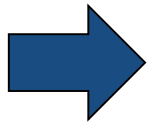
Global Energy Transfer Feed in Tariff ("GET FiT")

- The GET FiT Premium Payment Mechanism,
- Energy & Pele Energy - Bulemu East & West– 20MWac each at USDc 3.999/kWhac.
- Globeleq & Aurora Power Solutions - Aurora Sola One & Two - 20MWac each at USDc 4.52/kWhac.
- InnoVent & CEC - Garneton North & South Solar 20MWac each at USDc 4.80/kWhac..

Beyond the Grid Fund for Zambia

- 2016-2020, €20m, 1 million Zambians to benefit
- <https://www.bgfz.org/>

7. Power Outages 2015



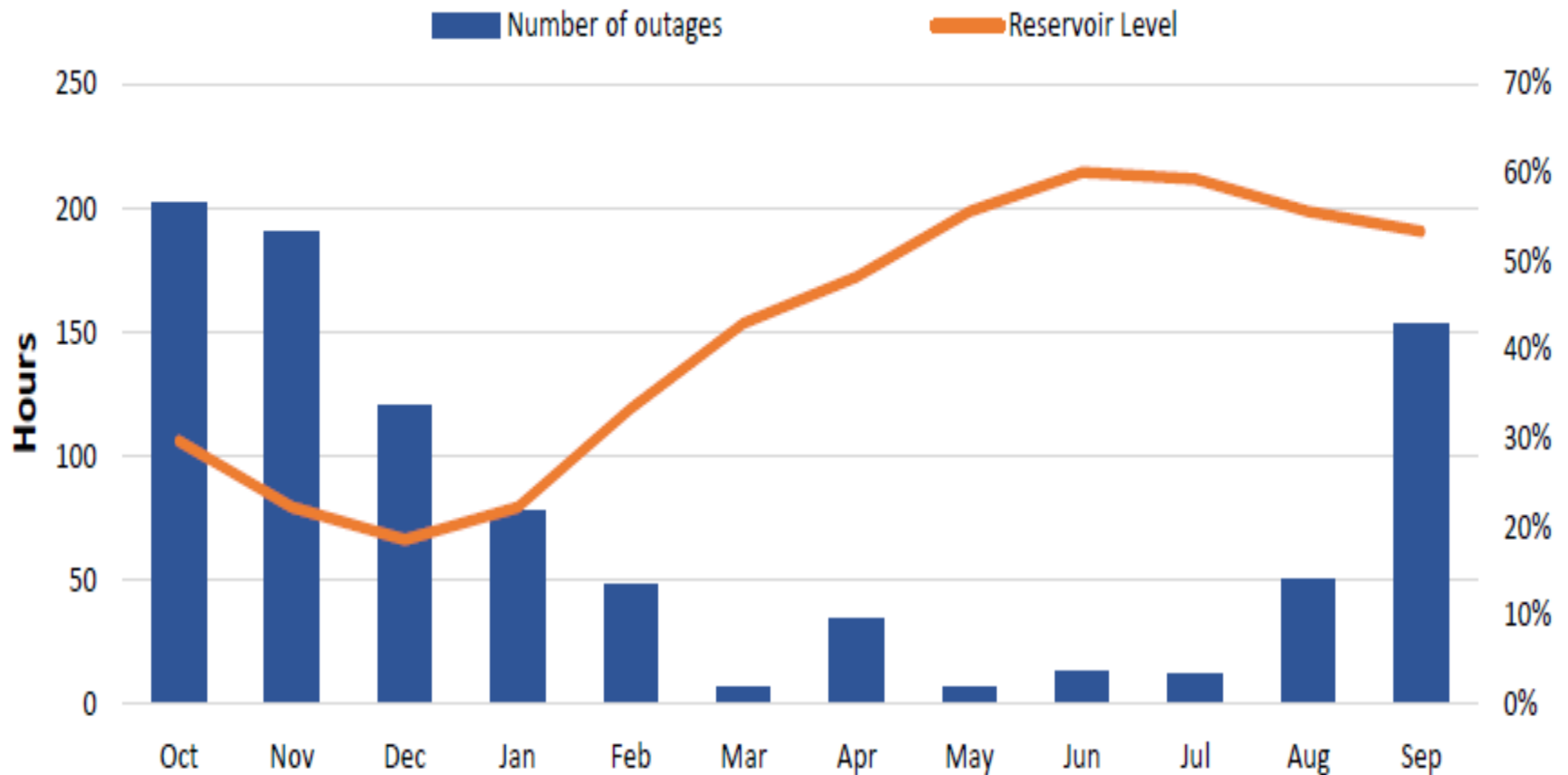
83 % of Zambia's firms mention electricity as the major constraint for their business

Indicator	
Percentage of firms experiencing electrical outages [%]	83.1
Average Load shedding hours per day	4
Duration of a typical electrical outage [h]	8
Average losses due to electrical outages [% of annual sales]	25
Percentage of firms owning of using a generator [%]	29.9
If generator is used, average proportion of electricity from a generator [%]	40

Source: Impact of load shedding on small scale enterprises,. Energy Regulation Board.

Status: 2015

7. Power Outages



Source: PDP Zambia, 2017

8. PDP Success in Zambia

- Initiation of Zambia's largest solar park (1MW, Kitwe, Copperbelt Energy, implemented by BayWa R.E.)
- Development of solar energy curriculum with Copperbelt University
- Subsector analysis: Agriculture sector fact sheets for Zambia
- Training of 30 private and public sector employees on solar project development (German Solar Training Week)
- Copperbelt Energy Business Excursion Trip to German (September, 2018).



9. Potential for PDP in Zambia

Agriculture sector- Massive investment

Tourism sector -off the grid

Manufacturing sector-High energy demand

Frequent power cut- Over dependence of grid electricity

Drying Kariba dam: Major source of electricity for Zambia





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Thank you for your attention!

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