GHANA

OBJECTIVES

00

• goal to reach a 10% contribution of RE in the electricity generation mix by 2020 link

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.055	\$0.136	\$0.135
MAX.	\$0.160	\$0.228	\$0.449

source

ELECTRIFICATION RATE

• 86% of the population has access to electricity <u>link</u>

TOTAL PV INSTALLED

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

- VAT <u>link</u>
- being applied link

NOTEWORTHY DEVELOPMENTS

link



54 MWp 11 MWp 0 MWp 0.35 MWp

source AFSIA IRENA

• PV panels are exempted from import duties and VAT <u>link</u> • other PV plant components are exempt of import duty but subject to

• FiT for large-scale plants exists (\$11.58/kWh since 2016) but is not

• 245 MW floating solar at Bui dam still to be built <u>link</u> • Kotoka international airport planning 6 MW C&I project link • PEG Africa to electrify 91 health centers with Power Africa's support

GUINEA

OBJECTIVES

• quadruple installed capacity from 658MW to 2,600MW by 2025 <u>link</u>

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
N.	\$0.009	\$0.097	\$0.151
λХ.	\$0.028	\$0.151	\$0.151

source

MI

M

ELECTRIFICATION RATE

• 35% of the population has access to electricity <u>link</u> • target was to achieve 35% electrification by 2020 <u>link</u> • target is to achieve 100% electrification by 2030 link

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

• tax exemptions vary between projects <u>link</u> • no regulatory framework developed for PV, financial support through subsidies <u>link</u>

NOTEWORTHY DEVELOPMENTS

- various companies



TOTAL PV INSTALLED

0 MWp 0.8 MWp 0 MWp 0 MWp

source AFSIA IRENA

• 33 MW at Lefa mine developed by Norgold link • more than 200 MW large scale projects under development by

GUINEA BISSAU

OBJECTIVES

INDUSTRIAL

• no specific RE target but desire to reduce dependence on fossil fuels and conduct energy transformation by 2030 through link

CURRENT TARIFF GRID ELECTRICITY

COMMERCIAL

RESIDENTIAL

MIN.

data could not be verified

MAX.

NOTEWORTHY DEVELOPMENTS

link

ELECTRIFICATION RATE

• 26% of the population has access to electricity <u>link</u> • target to have 72% of the population gain access to the electricity grid by 2030 link

TOTAL PV INSTALLED

LARGE SCALE **C&I** MG SHS & RESIDENTIAL

POLICY / REGULATION

• solar panels are exempted from VAT but other components of a solar kit are not link no FiT, no net-metering policy



0 MWp 0 MWp 0.3 MWp 0.25 MWp

source AFSIA IRENA

• 22 MW across 3 projects under construction developed by ABREC



• in 2018, the target was to achieve a 100% green energy mix by 2020 link • in 2020, the target is to achieve a 100% green energy mix by 2030 link

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
N.	\$0.135	\$0.113	\$0.113
λХ.	\$0.177	\$0.175	\$0.175

source

M

ELECTRIFICATION RATE

- 75% of the population has access to electricity <u>link</u>
 - target to reach universal access by 2022 <u>link</u>

TOTAL PV INSTALLED

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

NOTEWORTHY DEVELOPMENTS

55.6 MWp 27.6 MWp 2.3 MWp 16.18 MWp

source IRENA AFSIA

• all PV equipment and batteries subject to 14% VAT <u>link</u> • FiT is \$0.12/kWh bu registration procedures are complex link • net-metering could be launched in the near future <u>link</u>

• 30 MW Tatu City industrial zone development <u>link</u> • Multiple large scale projects at different stages of development



• additional renewable energy generation capacity of 200 MW by 2030 link

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
N.	\$0.052	\$0.018	\$0.018
.Χ.	\$0.105	\$0.118	\$0.020

source

MI

M

ELECTRIFICATION RATE

- 37% of the population has access to electricity <u>link</u>
- achieve 75% household electrification by 2030 link

TOTAL PV INSTALLED

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

NOTEWORTHY DEVELOPMENTS

- scheduled link
- grants link



0 MWp 0 MWp 0 MWp 0 MWp

> source AFSIA IRENA

• all PV components subject to a reduced VAT rate of 5% link • net-metering for systems below 500kW <u>link</u> • FiT for systems above 500 kW, to be negotiated <u>link</u>

• Mafeteng 30 MW phase 1 under construction and 40 MW phase 2

• OnePower developing 10 MG with REPP's support link • OnePower electrifying 7 healthcare centers through Power Africa



• no RE target • most focus on increasing the electricity access rate in rural areas

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
IN.	\$0.390	\$0.390	\$0.390
AX.	\$0.390	\$0.390	\$0.390

source

ELECTRIFICATION RATE

• 22% of the national population has access to electricity <u>link</u> • target to reach 20% electrification outside of Monrovia by 2025 link • target to reach 35% electrification outside of Monrovia by 2030 link

TOTAL PV INSTALLED

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

- reduction link
- verified solar products <u>link</u>

NOTEWORTHY DEVELOPMENTS

- by GigaWatt Global link



0 MWp 0.1 MWp 0 MWp 0 MWp

> source AFSIA IRENA

• Solar companies registered under LIRENAP are eligible for a duty

• RREA looking to create permanent duty waiver for all quality-

• 20 MW mount coffee Liberia large scale project under development

• Orange telecom towers to be solarized through Escotel link

• UNDP solarizing 12 health centers through MG link



• government launches a National Plan for Developing RE (2013-2025)

• achieve 10% renewable contribution to the electricity mix by 2025, with 400 MW CSP, 800 MW PV and 450 MW solar water heating link

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.046	\$0.156	\$0.071
MAX.	\$0.115	\$0.156	\$0.097

source

ELECTRIFICATION RATE

• 70% of the population has access to electricity link

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

- duty) <u>link</u>
- there is no VAT in Libya <u>link</u>
- no net-metering, no FiT

NOTEWORTHY DEVELOPMENTS

• construction of 100 MW Kufra solar plant link

TOTAL PV INSTALLED

0 MWp 5 MWp 0 MWp 0 MWp

> AFSIA source IRENA



• all PV components are subject to 4% port services tax (no import

MADAGASCA

OBJECTIVES

• double total installed capacity to reach 800 MW by 2023 link • RE to represent 85% of energy mix by 2030 link • solar to represent 5% of energy mix by 2030 <u>link</u>

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
ЛIN.	\$0.037	\$0.043	\$0.023
ЛАХ.	\$0.236	\$0.308	\$0.282

source

ELECTRIFICATION RATE

• 15 % of the population has access to electricity <u>link</u> • target to connect 70% of the population by 2030 link

TOTAL PV INSTALLED

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

- link
- no net-metering, no FiT link

NOTEWORTHY DEVELOPMENTS



24.3 MWp 13.1 MWp 0.2 MWp 1.78 MWp

> source AFSIA IRENA

• no import duties and no VAT on solar panels and lithium batteries

• other equipment subject to 20% import duties and 20% VAT link

• Filatex to develop a 170 MW total capacity link • ANKA Madagascar rolling out 60 MG link

• no specific RE or solar targets

CURRENT TARIFF GRID ELECTRICITY

MAL

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.054	\$0.124	\$0.052
MAX.	\$0.125	\$0.143	\$0.161

source

ELECTRIFICATION RATE

• 39% of the population has access to electricity <u>link</u> • target to increase electricity access rate to 80% by 2035 <u>link</u>

TOTAL PV INSTALLED

LARGE SCALE	
C&I	
MG	
SHS &	
RESIDENTIAL	

POLICY / REGULATION

- project using FiT yet link

NOTEWORTHY DEVELOPMENTS



0 MWp 1.1 MWp 0 MWp 0 MWp

AFSIA

IRENA

source

• solar lighting products exempt from import duty link

• 0% VAT on all solar product and components <u>link</u>

• FiT available since 2012 for projects between 500 kW and 10 MW at \$0.10/kWh without storage and \$0.20/kWh with storage but no single

• JCM Power finishing construction on 75 MW Salima project link • Phanes Group starting work on 37 MWac Nkhotakota project link • Resolve Capacity electrifying 85 health care facilities link

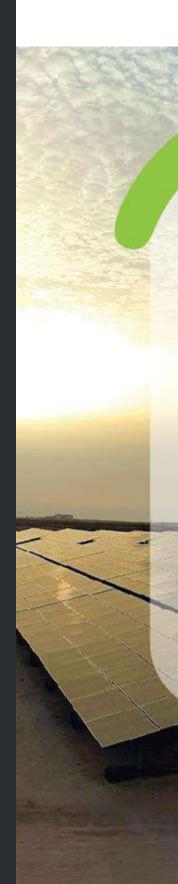
SEGMENT REVIEW: C&I

BOOMING C&I SEGMENT

AFSIA has been tracking solar projects in Africa for several years and conducts a daily surveillance of new projects being announced, awarded and commissioned.

So far we have identified more than 6,200 largescale, C&I and mini-grid project across the continent. Out of these 6,200, 2,400 are already in operation and are composed by C&I projects for more than 80%!

Not so long ago, the solar market was naturally dominated by large-scale projects which have been developed and built in a handful of countries across the continent.





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