# GHANA

### **OBJECTIVES**

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• 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

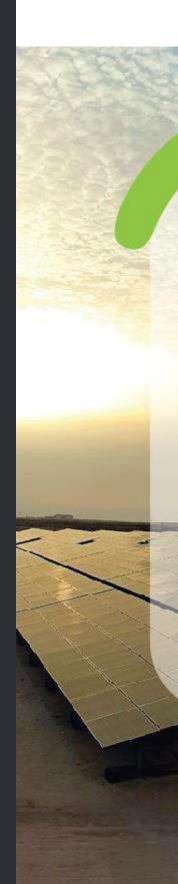
### **SEGMENT REVIEW: C&I**

### **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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