

SEGMENT REVIEW: MG



CREDIT: ARESS Group - Yannick Folly

But 2021 looks significantly more promising and should see some interesting developments once the effects and limitations of COVID become more manageable.

Several tenders are indeed continuing their path, while others have been announced recently. Among the most notable MG efforts on the continent, Togo has a privileged place with the AT2ER tender for 317 mini-grids across the country, backed with West African Development Bank financing.

Neighboring Benin also offers great prospects as 119 MGs have been awarded to bidders and are at different stages of construction.

Nigeria also is a hot destination for MG developers as the Federal Government and its international

partners are betting big on MGs to increase electricity access in the country: more than 100 MGs are already in operation or under construction in the country, and another 300 are said to be under development.

Sierra Leone also does pretty well when it comes to MG as more than 50 MGs are already in operation and another 45 are expected to be commissioned soon.

Finally, some major announcements have been made in a few other countries such as Senegal which recently launched a tender for 133 MGs and wants to have 1,000 villages supplied with MGs across the nation in total.

Cameroon also wants MGs to play an important part in the national electrification strategy with a target of 688 sites.

Last but not least, Madagascar is also seeing great potential in MGs and more than 50 MGs are currently being developed across the island.

On top of this enthusiasm for MG and the solution they will offer for rural electrification, it is also important to note that DFI financing is growingly being mobilized for such projects, with the objective of unlocking private capital to join the effort. The World Bank is one of the main supporters of MG development across the continent, being the primary financier of 60% of the MG programs currently in place across Africa. This and other excellent information [assessing MG incentive programs in sub-Saharan Africa](#) can be found in a research paper authored by Jonathan Phillips, Benjamin Attia and Victoria Plutschak for the Duke University Energy Access Project.

SEGMENT REVIEW: MG

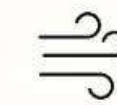
And since this paper, more commitments have been made by several entities, such as AfDB and SEforALL. AfDB has recently announced an \$8M package with the goal to create 80MW of MG capacity. On its side, SEforALL has launched the [Universal Energy Facility](#), a \$3M results-based financing mechanism focusing on MGs in Madagascar, Sierra Leone and Benin.

Another notable development in the MG space to watch in 2021 is the Essor project in DRC. After a demanding tender process, the consortium formed by Eranove, AEE and Gridworks has been awarded the first stage of this landmark MG initiative launched by DFID and supported by AfDB. This stage aims at building mini-grids in 3 remote cities of DRC for a total of 25,000 household and SME connections. These will probably be the largest MGs of the continent, if not the world.

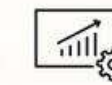
The future of energy runs on trust.

Safety, reliability and innovation in renewable energy

Learn more at [UL.com/Renewables](https://www.ul.com/renewables).



Energy services



Asset advisory



Due diligence



Testing



Inspection



Certification



Empowering Trust[®]

UL and the UL logo are trademarks of UL LLC © 2021.



SIERRA LEONE

OBJECTIVES

- RE to contribute more than 100,000 GWh by 2020 [link](#)
- green mini-grids and isolated systems to account for 37% of the total electricity access target [link](#)

TOTAL PV INSTALLED

LARGE SCALE	0 MWp
C&I	0.4 MWp
MG	3.7 MWp
SHS & RESIDENTIAL	0 MWp

source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0063.	\$0.203	\$0.213
MAX.	\$0.180	\$0.211	\$0.214

source

POLICY / REGULATION

- all SHS are exempted from import duties and VAT [link](#)
- PV equipment and low energy or energy-efficient appliances that meet IEC global standards are exempt from GST [link](#)
- no net-metering, no FiT

ELECTRIFICATION RATE

- 40% of the population has access to electricity [link](#)
- target to reach 92% access to electricity by 2030 [link](#)

NOTEWORTHY DEVELOPMENTS

- Orange telecom towers to be solarize through Escotel [link](#)
- 6 MWp Freetown solar park under construction [link](#)
- 98 MG commissioned or under construction [link](#)



OBJECTIVES

- addition of 200 MW by 2025, of which 50 MW PV [link](#)

TOTAL PV INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.390	\$0.390	\$0.390
MAX.	\$0.390	\$0.390	\$0.390

[source](#)

POLICY / REGULATION

- tax exemptions can be negotiated by both local and foreign investors
- no national electrification policy in place waiving taxes on PV products
- no FiT and no net-metering

ELECTRIFICATION RATE

- 15% of the population has access to electricity [link](#)

NOTEWORTHY DEVELOPMENTS

- BECO planning 92 MWp extension of Mogadishu solar plant [link](#)
- Abu Dhabi fund for development financing construction of 7 MWp Bosaso solar plant [link](#)

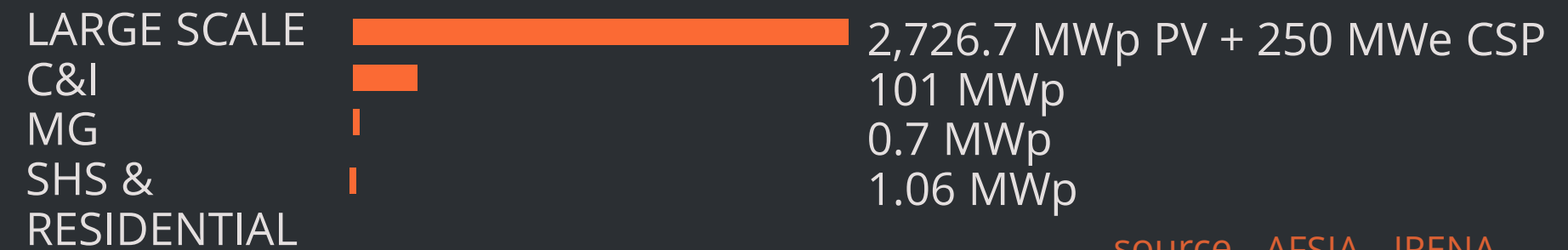


SOUTH AFRICA

OBJECTIVES

- 41% of RE in national energy mix by 2030 [link](#)
- 17,742 MW of wind; 8,288 MW of solar PV; 4,600 MW of hydropower, and 600 MW of CSP by 2030 [link](#)

TOTAL PV / CSP INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.035	\$0.046	\$0.042
MAX.	\$0.289	\$0.286	\$0.277

[source](#)

POLICY / REGULATION

- no import duties [link](#)
- possible for companies to write off 100% solar investment in year 1 [link](#)
- net-metering available in some municipalities [link](#)

ELECTRIFICATION RATE

- 92% of the population has access to electricity [link](#)

NOTEWORTHY DEVELOPMENTS

- South Africa launching large scale procurement for 6.8 GW PV in 3 rounds [link](#)
- Winners of 2,000 MW Risk Mitigation tender to be announced soon [link](#)
- Multitude of C&I projects launched or under tender, among others Sasol 300 MW project [link](#)



SOUTH SUDAN

OBJECTIVES

- country currently developing its Renewable Energy Development Program [link](#)
 - solar expected to be the best option to improve the nation's dependence on fossil fuels [link](#)

TOTAL PV INSTALLED

LARGE SCALE	■	1 MWp
C&I	■	2.2 MWp
MG		0 MWp
SHS & RESIDENTIAL		0 MWp

source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.193	\$0.270	\$0.270
MAX.	\$0.193	\$0.270	\$0.270

[source](#)

POLICY / REGULATION

- PV subject to 10% import duties and 10% VAT [link](#)
- no FiT, no net-metering

ELECTRIFICATION RATE

- 9% of the population has access to electricity

NOTEWORTHY DEVELOPMENTS

- Elsewdy Electric and Asunim Solar to build 20 MWp and 35 MWh hybrid in Juba [link](#)
- Scatec building 4 MW+ C&I project for international agencies [link](#)



SUDAN

OBJECTIVES

- 50% RE excluding hydro in the national energy mix by 2030 [link](#)
- objective to contract 500 MW of PV [link](#)

TOTAL PV INSTALLED

LARGE SCALE	0 MWp
C&I	0 MWp
MG	0 MWp
SHS & RESIDENTIAL	0 MWp

source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.			
MAX.	\$0.114	\$0.180	\$0.180

[source](#)

POLICY / REGULATION

- import duty on PV components is 10% and VAT is 15% [link](#)
- government said to be preparing the launch a FiT Scheme for RE with UNDP support in 2017 [link](#)
- electricity price was increased by 500% on Jan 1, 2021 [link](#)
- no net-metering

ELECTRIFICATION RATE

- 60% of the population has access to electricity [link](#)

NOTEWORTHY DEVELOPMENTS

- UAE government financing 500 MW total capacity in multiple large scale projects [link](#)

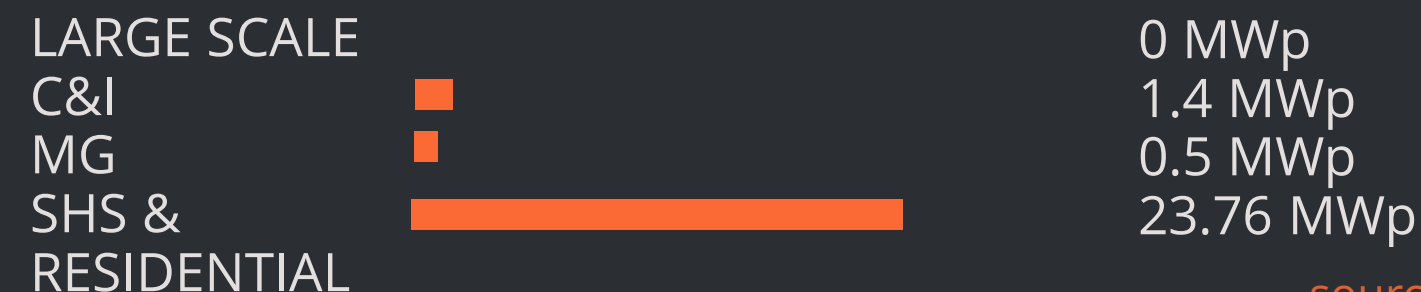


TANZANIA

OBJECTIVES

- Electricity Industry Reform Roadmap planned for 100 MW PV and 200 MW wind by 2024 [link](#)

TOTAL PV INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.043	\$0.084	\$0.065
MAX.	\$0.126	\$0.126	\$0.068

source

POLICY / REGULATION

- PV products and associated components (except solar lights) are exempted from import duties and VAT [link](#)
- FiT of \$0.21/kWh for MG, FiT to systems connected to the national grid at \$0.079/kWh in the dry season, \$0.059/kWh in the wet season [link](#)
- net-metering in application since 2017 [link](#)

ELECTRIFICATION RATE

- 33% of the population has access to electricity [link](#)
- plans to increase connections to 30% by 2015, 50% by 2025 and 75% by 2033 [link](#)

NOTEWORTHY DEVELOPMENTS

- 10 MW Kahama Solar under construction [link](#)
- AFD supporting the development of the 60 MWp Shinyanga Solar Project [link](#)
- Tanesco 50 MW tender results expected still expected [link](#)



TOGO

AFSIA
Africa Solar Industry Association

OBJECTIVES

- target of 4% of PV in the energy mix by 2020 and 10% by 2030 [link](#)
- CIZO Programme to reach 300,000 households with off-grid solar by 2022 [link](#)

TOTAL PV INSTALLED

LARGE SCALE	0 MWp
C&I	3.8 MWp
MG	0.3 MWp
SHS & RESIDENTIAL	0 MWp

source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.152	\$0.084	\$0.065
MAX.	\$0.280	\$0.126	\$0.068

[source](#)

POLICY / REGULATION

- all RE components are exempt from import duties and VAT [link](#)
- CIZO Programme offers subsidies to households to cover the cost of off-grid PV systems [link](#)
- no net-metering, no FiT

ELECTRIFICATION RATE

- 28% of the population has access to electricity [link](#)
- target of 100% electricity access by 2030 [link](#)

NOTEWORTHY DEVELOPMENTS

- AMEA Power building 50 MW Blitta project [link](#)
- Results to be announced for 317 MG tender [link](#)
- AT2ER ranks 3rd for its renewable energy strategy in Ashden Awards 2020 [link](#)



TUNISIA

OBJECTIVES

- 3.6 GW of RE capacity by 2030 [link](#)
- solar plan 2030 targets 1,510 MW of PV and 450 MW of CSP [link](#)

TOTAL PV INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.026	\$0.046	\$0.061
MAX.	\$0.173	\$0.172	\$0.161

[source](#)

POLICY / REGULATION

- imported energy equipment with no locally produced equivalent are subject to minimum customs duties and are exempt from VAT [link](#)
- net-metering and FiT possible [link](#)

ELECTRIFICATION RATE

- 99.8% of the population has access to electricity [link](#)

NOTEWORTHY DEVELOPMENTS

- Tunisia launches 5th round of tender for 70 MWp [link](#)
- Scatec to build 360 MW in Tatouine, Tozeur and Sidi Bouzid [link](#)
- Qair to test floating PV with 200 KWp in Tunis [link](#)



UGANDA

OBJECTIVES

- achieving more than 90% of renewable electricity production by 2030 [link](#)

TOTAL PV INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.203	\$0.106	\$0.063
MAX.	\$0.203	\$0.228	\$0.203

[source](#)

POLICY / REGULATION

- PV panels exempt from import duties and VAT [link](#)
- related solar accessories are subject to import duty up to 35% and VAT up to 18% [link](#)
- analysis being done on net-metering scheme [link](#)

ELECTRIFICATION RATE

- 20% of the population has access to electricity [link](#)
- target 99% electrification rate by 2030 [link](#)

NOTEWORTHY DEVELOPMENTS

- AMEA Power to develop 90 MW [link](#)
- Chinese CEEC to build 500 MW [link](#)
- 113 MG under development with support of various DFI's

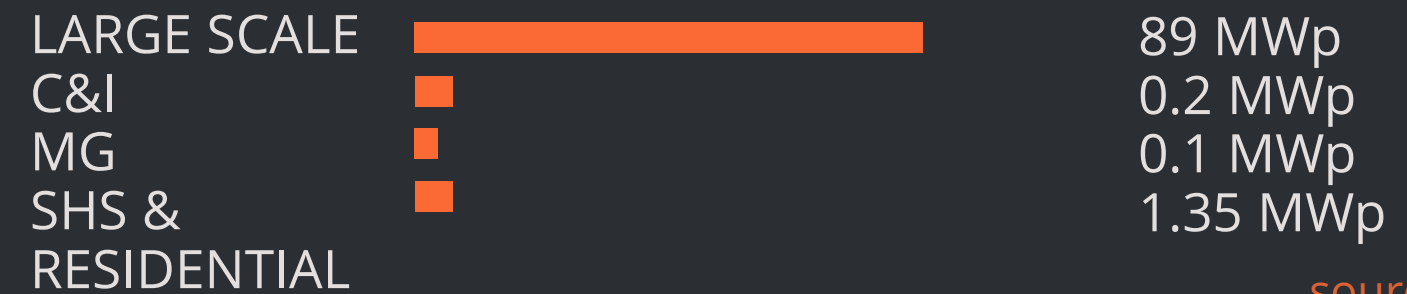


ZAMBIA

OBJECTIVES

- target to generate 600 MW of PV by 2030 [link](#)

TOTAL PV INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.026	\$0.060	\$0.015
MAX.	\$0.109	\$0.103	\$0.043

[source](#)

POLICY / REGULATION

- 0% import duties and 0% VAT on solar products [link](#)
- no permit required for systems <100kW [link](#)
- no FiT
- net-metering is mentioned in 2016 grid code but it has never been applied [link](#)

ELECTRIFICATION RATE

- 36% of the population has access to electricity [link](#)
- target by 2030 to electrify 90% of urban population and 51% of rural [link](#)

NOTEWORTHY DEVELOPMENTS

- Power China to build 3 times 300 MWp for ZESCO [link](#)
- Globeleq and SOLA Group awarded 2 times 20 MW [link](#)
- Toyota Tshusho and Elsewedy electric to build 2 times 50 MW Ac [link](#)



ZIMBABWE

OBJECTIVES

- target 1,575MW of power from solar by 2030 [link](#)
- 1,100 MW RE by 2025 and 2,100MW by 2030 [link](#)

TOTAL PV INSTALLED



source [AFSIA](#) [IRENA](#)

CURRENT TARIFF GRID ELECTRICITY

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN.	\$0.021	\$0.021	\$0.021
MAX.	\$0.201	\$0.201	\$0.201

[source](#)

POLICY / REGULATION

- all PV components are exempt from import duties [link](#)
- net-metering possible with basic registration [link](#)

ELECTRIFICATION RATE

- 39% of the population has access to electricity [link](#)

NOTEWORTHY DEVELOPMENTS

- Zuva Petroleum to solarize 180 service stations [link](#)
- Nhimbe Fresh Factory soon to benefit from hybrid 1.9 MW / 3.9 MWh project under PPA [link](#)
- 240 MW total capacity under development or construction at Zimbabwean mines



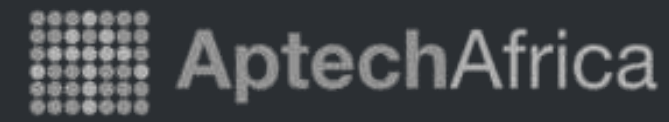
FOUNDING



PARTNER



CORPORATE



STRATEGIC

