



# AFRICA SOLAR OUTLOOK 2026

A country-by-country review of the status  
of solar energy in Africa



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# Words of gratitude

It is with great pleasure that I present the sixth edition of the **Africa Solar Outlook**, AFSIA's flagship annual publication. In a sector where information is abundant but time is limited, accessing reliable, relevant, and actionable insights remains a challenge for many professionals. The **Africa Solar Outlook** is designed precisely to respond to this need, offering a concise and pragmatic overview of the realities shaping the solar sector across the African continent. At the same time, for readers wishing to explore specific topics in greater depth, the report includes a curated selection of short articles addressing key trends and developments influencing the industry. In this regard, the **Africa Solar Outlook** continues to serve as a unique and valuable reference throughout the year for anyone seeking to stay informed about solar markets in Africa.

As with every edition, we remain fully aware that this report and the data it contains are not flawless. Nevertheless, we are committed to continuously improving its accuracy and depth through the systematic collection, validation, and cross-checking of thousands of data points and information sources throughout the year. In a context where official and verifiable data is often scarce, particularly across African markets, this report draws on nearly a decade of dedicated research and data gathering. It is today one of the most comprehensive and credible sources of solar market intelligence available to our industry, and this achievement is the result of the sustained efforts of many contributors.

# Words of gratitude

I would like to extend my sincere congratulations to Aline Uwimana for the outstanding work delivered once again this year. Producing the **Africa Solar Outlook** requires patience, rigor, and persistence, combining long periods of independent research with extensive verification and validation processes. As deadlines approach, this effort evolves into a collective undertaking involving close collaboration with the wider AFSIA team and external partners. Over the years, Aline has demonstrated exceptional ability in managing this complex process, and this sixth edition further confirms her role in delivering one of the industry's most authoritative reference reports.

I would also like to acknowledge Bill Mvumvaneza, who has continued to strengthen our market intelligence efforts. His attention to detail and rapid adaptation to the demanding timeline of this report have been instrumental, and I am confident that his contribution will further enhance the quality and scope of AFSIA's analytical work going forward.

This edition also reflects the invaluable contribution of our peer reviewers. A growing network of experts generously dedicated their time to reviewing, validating, and, where necessary, correcting country-level information. Their commitment and professionalism play a crucial role in ensuring the credibility and relevance of this publication, and I would like to express my sincere appreciation for their support.

Finally, I wish to express my deepest gratitude to our partners. Their generous support enables us to uphold the high standards of quality and accessibility that define the **Africa Solar Outlook**. Beyond supporting the publication, our partners have also shared valuable insights into emerging trends and opportunities shaping Africa's solar industry. JA Solar, Echosys Invest, CrossBoundary Energy, SAPVIA, Intersolar Africa, ZARENA : thank you for your continued commitment to advancing solar energy across Africa alongside us.

John van Zuylen  
CEO, AFSIA



# Getting the most out of this report

Solar energy in Africa holds significant social and economic potential and continues to inspire professionals around the world. As a result, a growing volume of content is published regularly on solar and renewable energy across the continent. However, navigating this wealth of information or finding the time to review it all can often be challenging.

Each year, the **Africa Solar Outlook** report by AFSIA seeks to address this challenge by offering a distinctive format and perspective on solar energy in Africa. The report is structured around **four core themes**, which can be read as a single narrative or consulted selectively depending on time constraints and areas of interest.

First, the report presents a series of topical articles that reflect on the most significant developments of the past year while highlighting key trends to monitor going forward. These articles are not intended to serve as scientific analyses of the sector, but rather to share observations based on the developments and patterns that stood out over the course of the year. Where possible, these insights are supported by data drawn from our projects database, which now includes **40,000+ projects** at various stages of development.



The Africa Solar Outlook also features a collection of concise country profiles covering every nation on the continent. These vignettes allow readers to quickly extract critical information throughout the year in response to specific needs. This section provides fast access to verified and sourced data, helping readers understand the solar landscape in individual countries and identify potential business opportunities.

In addition, summary tables enable quick comparisons of country performance across several key drivers shaping solar development in Africa.

Finally, several AFSIA partners share their perspectives through thought-provoking opinion articles, drawing on years of hands-on experience in the field.

The information presented in this report is based on publicly available sources as well as numerous discussions with industry stakeholders. AFSIA recognizes that some solar developments across Africa may not always be captured. Nevertheless, we firmly believe that this report offers the most comprehensive overview of the solar sector on the continent, underpinned by data collection efforts spanning more than a decade and continuously cross-checked and updated on a daily basis.

That said, even the most comprehensive report remains a snapshot in time, while the solar industry continues to evolve rapidly. For access to continuously updated information throughout the year, we encourage readers to consider becoming AFSIA members. Membership provides access to our full suite of online platforms, including the industry's most extensive databases, updated daily. Members also benefit from additional support services from the AFSIA team, including tailored research and introductions to potential partners and clients. For further details on membership, please feel free to contact our team to request a [demo](#). Should you identify any inaccuracies in this report, we would appreciate you reaching out to [Aline](#), our Market Intelligence Manager, so they can be addressed.

This year, we are pleased to once again make the full report freely available, thanks to the generous support of our partners. We strongly believe that transparent and reliable information is essential to accelerating the growth of solar energy and electricity access across Africa. Our conviction is that accurate information leads to better decision-making; better decision-making enables stronger project development; and stronger projects ultimately expand electricity access for millions across the continent. We therefore hope this report contributes meaningfully to the continued advancement of the solar industry in Africa. The support of our partners is crucial in making this publication accessible to all, and we would like to extend our sincere gratitude to them.



# Solar continues to grow at impressive rate across the globe

The world had added between 544 and 660 GW of solar in 2025, once again the most it has ever added in history

As mentioned in our previous reports, no official figures exist for global PV installations unfortunately. But a comparison of various sources can help us identify a range of potential capacities and define a reasonably acceptable figure for each year.

Here is an overview of the various sources we have taken into account:

Organization	2025 GW estimate	Source
Ember	626	<a href="#">link</a>
Bloomberg NEF	655	<a href="#">link</a>
SolarPower Europe	655	<a href="#">link</a>
IEA	580 - 650	<a href="#">link</a>
Rystad	544	<a href="#">link</a>
Wood McKenzie	577	<a href="#">link</a>
InfoLink	660	<a href="#">link</a>
Range / average	544-660 / 618	

## Installed capacity increased by 23% YoY

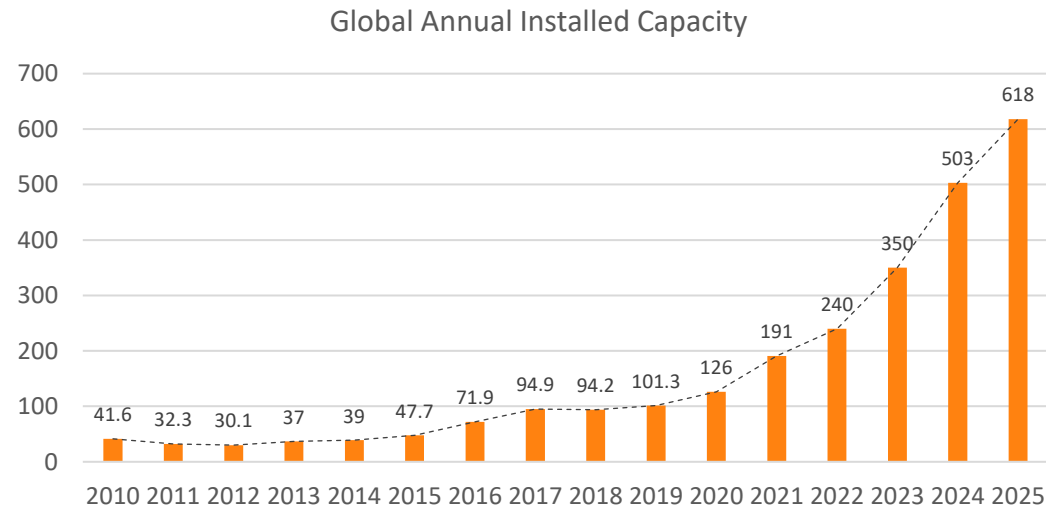
In 2025, an estimated 618 GWp were added globally. This marks another record year for solar capacity additions. As in previous years, it is remarkable to note that the past year of solar installations has represented an addition of roughly 30% of all historically installed solar capacity. This has been the case for the past 5 years. As a result, the global total installed capacity has almost tripled since 2021 and almost quadrupled since 2020!

Solar has once again experienced a solid growth in 2025, albeit lower than the 2 previous years. In 2025, the growth rate was 23% (618 GWp vs. 503 GWp), while it was 44% in 2024 (503 GWp vs. 350 GWp) and 46% in 2023 (350 GWp vs. 240 GWp).

World	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Annual Installed	71.9	94.9	94.2	101.3	126	191	240	350	503	618
y-o-y Growth	51%	32%	-1%	8%	24%	52%	26%	46%	44%	23%
Cumulative	300	395	489	590	716	907	1,147	1,497	2,000	2,618
Growth vs History	32%	32%	24%	21%	21%	27%	26%	31%	34%	31%

## Slower growth, but maybe on track on track to meet 2030 targets

2025 may have seen a lower growth rate than in previous years, but the industry remains on an exponential growth trajectory identified in previous reports.



For many years, all industry experts have agreed that not enough was being done to achieve the 2030 targets. However, 2025 may represent a turning point as the exponential growth of renewables and solar in particular seems to generate some divergent opinions about leading industry voices.

In its most recent digital story called "[Renewables Recap 2025: The Good, the Bad and the Ugly](#)" IRENA highlights that we are still falling short if the world is to reach the 11.2 TW of renewables required by 2030. IRENA identifies that global renewables are currently growing at an annual rate of 15%, and if this rate is maintained over the next 4 years, that would take us to a total capacity of only 10.3 TW by 2030, leaving a gap of 0.9 TW.

## Slower growth, but maybe on track on track to meet 2030 targets

On the other hand, energy think tank Ember's analysis is a lot more positive about our ability to reach the 2030 target. Based on capacity additions of the last 3-5 years, Ember believes that there is a reasonable hope of meeting the objective of tripling renewable capacity between 2023 and 2030. This growth of solar, combined with the even steeper growth curve of storage, could significantly redefine the global energy landscape. Ember specifically estimates that global solar capacity will reach between 7 and 8 TWp by 2030. And if this is achieved, it means solar power would represent 25% of all power generated by 2030. Given the growth of the most recent years, Ember calculated that it would only require a modest 6% CAGR of solar over the period 2026-2030 to reach the projected necessary installed capacity.

But while 6% CAGR today sounds even more achievable than 1 year ago, some major (non-solar) challenges remain. Adding significant solar capacities will have a non-neglectable impact on power systems and grids. In many parts of the world, these will require important upgrades to absorb all the solar power expected to be added. BESS solutions can greatly soften this impact, but grid upgrades are inevitable. These upgrades are relatively costly and lengthy and it remains to be seen if they can be performed on time to meet target in various parts of the globe.

## Renewables overtook coal in the global power generation mix for the first time in 2025, solar's domination further confirmed

In yet another cutting-edge analysis in October 2025, energy think tank Ember identified ground-breaking facts about global solar and wind performance.

During the first half of 2025, it appears that solar and wind have grown faster than the global electricity demand. Over the first 6 months of 2025, solar and wind have generated an additional 403 TWh of power (compared to same period in 2024) while electricity demand has only grown by 369 TWh over the same period of time. Solar and wind growth has therefore represented 109% of the global electricity demand growth



## Renewables overtook coal in the global power generation mix for the first time in 2025, solar's domination further confirmed



As **Małgorzata Wiatros-Motyka**, Senior Electricity Analyst, Ember puts it

*"We are seeing the first signs of a crucial turning point. Solar and wind are now growing fast enough to meet the world's growing appetite for electricity. This marks the beginning of a shift where clean power is keeping pace with demand growth. As costs of technologies continue to fall, now is the perfect moment to embrace the economic, social and health benefits that come with increased solar, wind and batteries."*

More importantly, renewables also contributed more than coal to the global energy mix for the first time ever in 2025 H1. Renewables grew by 363 TWh (+7.7%) to reach 5,072 TWh, while coal generation fell by 31 TWh to 4,896 TWh. As a result, renewables' share of global electricity rose to 34.3% (from 32.7%), while coal's share fell to 33.1% (from 34.2%). This was made possible through a strong rise in solar (+306 TWh) and to a lesser extent wind (+97 TWh) while other renewables have slightly decreased. At the same time, coal also slightly decreased by -0.6%. The immediate result that that CO2 emissions from the power sector have not increased in this period.

Another noteworthy fact is that contrarily to popular belief, fossil generation fell in China and India, but grew in the EU and the US. Ember estimates that the decrease in India may be temporary, while in China it signals a more structural shift in the power generation mix.

## What may be expected for the years to come?

As highlighted in several AFSIA reports and events over the past 18 months, the major change in the solar industry is driven by ... storage solutions. The new technological developments and price points of storage solutions are pushing back the boundaries of viable solar projects, almost totally deleting the intermittent aspect of solar while remaining cost-competitive with other traditional power generation technologies. Africa is now home to several astonishing projects that were long considered as impossible (baseload PV+BESS project at copper mine in DRC and 100 MWp/290MWh project in Mauritius at \$0.07/kWh).

This trend is unlikely to change and it is reasonable to believe that PV+BESS will soon be the cheapest power generation option anywhere in the world.

As a result, we may reasonably expect annual solar capacities to soon surpass 1 TWp/year.



# Thriving to provide the most accurate data about solar in Africa

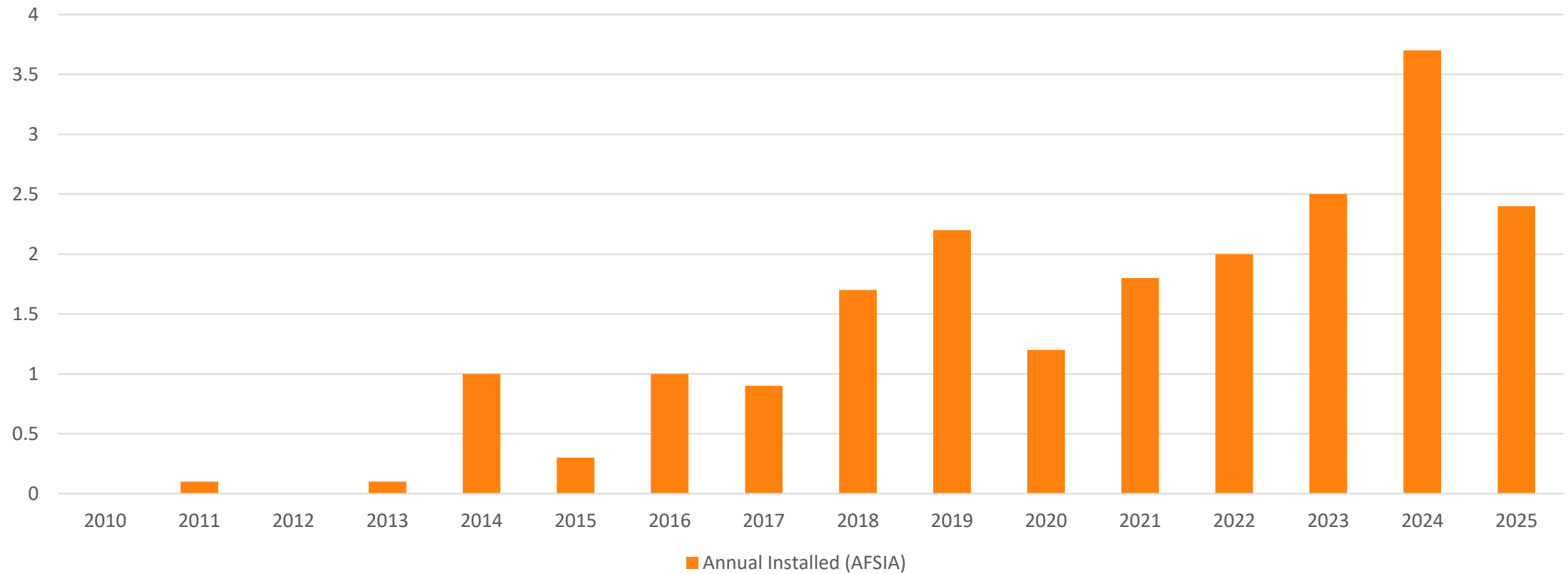
Since its very early days, AFSIA has been focusing on data about solar in Africa as we believe that good business and policy decisions can only be made based on good data. In more mature markets, institutions are in place to collect correct and independent data, and make it available to the public and professionals. However, in many African countries, such institutions are simply missing or do not yet have the bandwidth to collect and report on solar. This is why AFSIA has humbly embarked on this mission in 2019 with the hope to provide the clearest possible picture of the reality and evolution of solar in Africa.

But data collection, particularly for such a vast and diversified region as Africa, is a daunting and never-ending task. Since 2019, the AFSIA team has relentlessly been searching for and collecting every available piece of information about solar projects of all types in Africa. This is what is called a “bottom-up” approach, in which we have collected information at the lowest possible level of detail and then add each piece of information to build a global picture.

At the end of 2025, based on this bottom-up approach, we managed to identify and monitor 42,000+ different projects individually. AFSIA believes this is the most-comprehensive dataset in the African solar industry. The 2025 total represents an increase of approximately 40% more projects identified compared to end of 2024. And from a capacity point of view, these projects represent a total of 296 GWp, out of which 23.4 GWp are in operation (26% increase of MWp in operation compared to 2024).

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Annual Installed (AFSIA)	1.0	0.9	1.7	2.2	.2	1.8	2.0	2.5	3.7	2.4
y-o-y Growth	194%	-11%	89%	31%	-45%	47%	14%	25%	46%	-36%
Unassigned to Year										2.4
Total Cumulative	2.5	3.4	5.1	7.3	8.5	10.3	12.4	14.9	18.6	23.4
Growth vs History	66%	35%	49%	43%	17%	21%	20%	21%	25%	26%
% of global capacity	1.4%	0.9%	1.8%	2.2%	1.0%	0.9%	0.8%	0.7%	0.7%	0.4%

## Africa Annual Installed Capacity

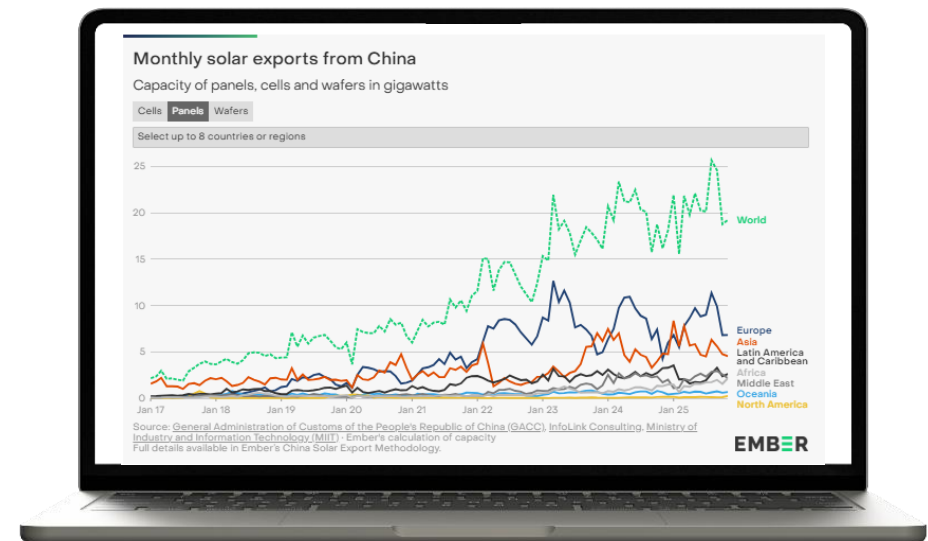


## Knowing what we don't know

But for many years, AFSIA's approach has had 1 major shortfall: our data is only based on what we have been able to identify. And we have always been aware that many projects, especially the smaller ones, were yet to be identified, and hence were not captured in our database nor in the figures that we presented every year. This approach, however limited and likely reducing the real size of solar in Africa, was selected for lack of a better alternative at that point in time.

This year however, a new and very interesting source of information has become available thanks to energy think tank Ember. Ember has managed to collect solar export data from China since 2017. These export figures are available month by month and are labeled in USD value. By applying an evolutive average cost per Wp, Ember was able to estimate how many MWp were shipped to any country of the world, month by month, since 2017. China is of course not the only country exporting solar, but it is arguably the most important one (representing roughly 90% of the market).

Hence, the Chinese export figures provide a pretty accurate picture of how much solar must be present in any given country with a relatively small margin of error. This approach can then be considered as a “top-down”, as it provides the total volume of solar in a specific country, but without providing the granular detail of where nor for which use these panels are being installed.

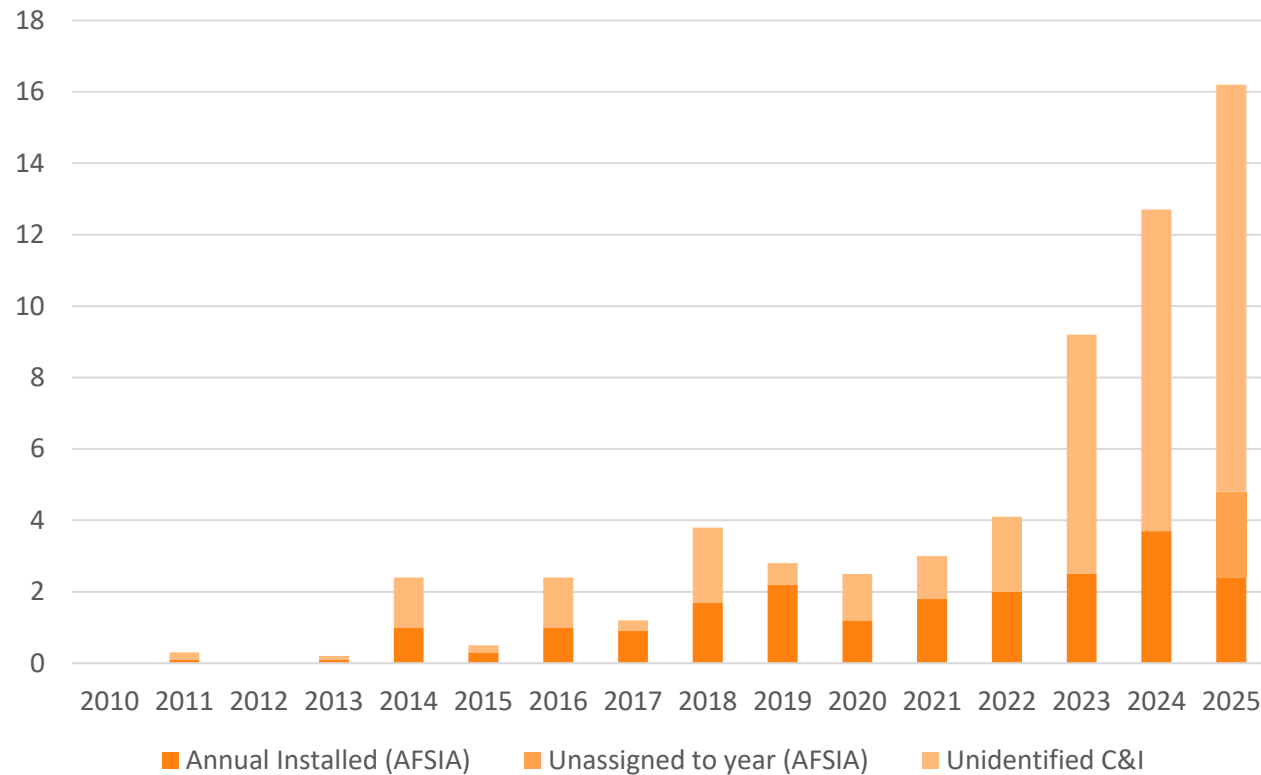


## New data fundamentally change the picture of solar in Africa

When cross-checking both this bottom-up and top-down approaches, albeit with their respective limitations, we manage to obtain a very different picture of solar in Africa than what has been portrayed in the past. For many years, most industry analysts (including AFSIA) appear to have very much underestimated the scale of solar in Africa. At the end of 2025, AFSIA has uniquely identified 23.4 GWp worth of operational projects in Africa. However, Chinese export data indicate that 58.1 GWp have been exported to African nations since 2017. Extrapolating for export before 2017 (official data not available before 2017) adds another 10% of capacity, bringing the likely total capacity installed in Africa to 63.9 GWp. This means that solar may in fact be 2.75x more prevalent in Africa than most professionals may believe (including AFSIA pre-2025)!

imported (Ember)	0.3	0.3	2.4	0.5	2.4	1.2	3.8	2.8	2.5	3.0	4.2	9.3	12.7	16.1
annual installed (AFSIA)	0.0	0.1	0.0	0.1	1.0	0.3	1.0	0.9	1.7	2.2	1.2	1.8	2.0	2.4
unassigned to year (AFSIA)														2.4
unidentified C&I and resi	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.1	0.6	1.3	1.2	2.1	11.4
annual installed	0.0	0.3	0.0	0.3	2.4	0.5	2.4	1.2	3.8	2.8	2.5	3.0	4.2	16.1
total cumulative	0.0	0.3	0.3	0.7	4.1	4.9	8.3	9.5	13.4	16.2	18.7	21.7	25.9	63.9
y-o-y growth		1013%	2%	105%	488%	21%	69%	14%	40%	21%	15%	16%	19%	34%
growth vs history		833%	0%	74%	346%	12%	49%	14%	40%	21%	15%	16%	19%	34%
% of global capacity	0.0%	0.8%	0.0%	0.7%	6.2%	1.0%	3.3%	1.3%	4.1%	2.8%	2.0%	1.6%	1.7%	2.6%

## Africa Annual Installed Capacity



These new figures illustrate that Africa, while still representing a minor fraction of the global solar business, is actually 3 to 4 times more important than the narrative may have conveyed over the years (from 0.7% to 2.6% of global capacity in 2023-2025).

In a further section of this report, we will also highlight that Africa is the region of the world with the fastest growth. It is therefore not surprising that the major global manufacturers have now set their eyes on Africa as the next growth market, several of them even establishing manufacturing facilities on the continent.

## Impact on weight of segments

Taking this new volume into consideration, some assumptions must be made to assign this additional solar capacity to specific countries and specific segments, in order to give the most accurate possible picture of solar.

Export data is luckily broken down by country, so it is easy to assign precise volumes to each African country.

However, when it comes to the final use of these panels, and which segments they are being used in, AFSIA made the following assumptions:

- All utility-scale are documented officially, and no utility-scale project goes below the radar. Hence, it is very unlikely that a utility-scale project would be missing in the AFSIA database
- Mini-grids are most often government-led programs, and these are also documented officially. Hence it is very unlikely that mini-grid projects would be missing in the AFSIA database.
- SHS and PUE systems have been consistently reported on GOGRA over the years, and it is assumed that the volumes mentioned are fairly accurate.

## Impact on weight of segments

- Even if some mini-grids, SHS, and PUE applications may have been missed, their overall weight in MWp compared to other solar applications (utility-scale, C&I and residential) is actually marginal and any reporting error would actually not make for a big difference in the overall picture
- All the “unidentified” solar must be found in the C&I and residential segments
- Based on numerous conversations and interviews with C&I and residential installers across Africa, it is assumed that this unidentified capacity should be split 85/15 between C&I and residential respectively to provide a fairly accurate estimate

As a result, you may expect to see some important changes in the country vignettes in the second part of this report. Specifically, in the section “Total PV installed”, the figures for operational C&I and residential installations will rise sharply. For ease of understanding, a distinction will be made between the MWp uniquely identified by AFSIA and those added through the unidentified imports.

# Africa grows faster than any other region in 2025

Despite the caveats identified earlier, the Chinese export data can help us identify global and regional trends. It can also help us compare Africa “apple to apple” with other regions. And in 2025, this analysis identifies Africa as the globe’s fastest growing region for solar.

	2017	2018	2019	2020	2021	2022	2023	2024	2025	Grand Total
China	52,780	44,260	30,220	48,750	53,130	87,410	216,880	277,170	312,500	<b>1,123,100</b>
Africa	1,199.5	3,828.4	2,845.8	2,487.8	3,025.1	4,166.2	9,255.5	12,670.0	14,794.3	<b>54,272.8</b>
Asia	19,056.5	22,413.1	26,104.8	33,138.1	33,389.8	29,088.7	47,283.3	60,575.9	59,080.0	<b>330,130.0</b>
Europe	2,528.9	7,588.9	23,160.1	29,499.3	43,280.3	84,940.3	101,433.4	96,524.4	84,324.4	<b>473,230.0</b>
Latin America and Caribbean	4,140.4	3,320.7	2,964.1	3,018.8	4,026.2	8,033.0	13,788.8	27,174.9	21,939.5	<b>158,840.2</b>
Middle East	1,970.2	3,320.7	2,964.1	3,018.8	4,026.2	8,033.0	13,788.8	27,174.9	21,939.5	<b>86,236.2</b>
North America	2,289.3	335.7	982.2	2,201.3	654.8	434.5	629.1	1,155.4	1,216.2	<b>9,898.3</b>
Oceania	2,036.6	5,010.9	4,644.8	4,379.8	4,908.8	4,932.4	7,431.2	6,887.0	6,224.4	<b>46,456.0</b>
<b>Grand Total</b>	<b>86,001.4</b>	<b>96,161.4</b>	<b>101,455.9</b>	<b>133,370.8</b>	<b>158,464.5</b>	<b>243,167.1</b>	<b>426,139.1</b>	<b>514,406.3</b>	<b>522,997.2</b>	<b>2,282,163.5</b>

The above table presents a combination of solar installations in China as well as official Chinese PV export data to all regions of the world (excluding China of course) between 2017 and 2025. Figures for 2025 are still estimates and/or partial as the latest official figures have not been published at the time of compiling this report. The total indicates 2.3 TWp of solar, to which an approximate 10% should be added to account for panels produced in other countries than China, bringing the total to 2.5-2.6 TWp globally.

Next to confirming that China hosts almost 50% of all global solar capacity, this table also helps us identify trends. The below table computes the annual growth rates per region:

Growth Rate	2017	2018	2019	2020	2021	2022	2023	2024	2025	CAGR since 2021
China		-16%	-32%	61%	9%	65%	148%	28%	13%	56%
Africa		219%	-26%	-13%	22%	38%	122%	37%	17%	49%
Asia		18%	16%	27%	1%	-13%	63%	28%	-2%	15%
Europe		200%	205%	27%	47%	96%	19%	-5%	-13%	18%
Latin America and Caribbean		127%	12%	-6%	61%	51%	22%	10%	-29%	9%
Middle East		69%	-11%	2%	33%	100%	72%	97%	-19%	53%
North America		-85%	193%	124%	-70%	-34%	45%	84%	5%	17%
Oceania		146%	-7%	-6%	12%	0%	51%	-7%	-10%	6%
Grand Total		12%	6%	31%	19%	53%	75%	21%	2%	35%

From this table, we can truly track the massive fluctuations of global growth over the past few years. Europe experienced solid growth in the period 2018-2022, but this growth has now drastically reduced and the European solar market even started to experience a negative growth recently.

Over the same period, North America has experienced alternate waves of strong growth and shrinking and appears to be somewhat stable in 2025.

But the most notable element from this table is undoubtedly the performance of Africa. Between 2019 and 2022, Africa was positioned among the least growing regions of the world. 2023 gave the continent a major boost, pushed by the power crisis in South Africa, and brought the region to the 2<sup>nd</sup> fastest growing region that year (+122%). This performance was then further sustained in 2024 and 2025, albeit with more moderate growth rates (+37% and +17% respectively). And when zooming in on 2025, it appears that only 3 regions have increased their imports compared to 2024: China, Africa and the Middle East. And among those 3, Africa has grown the most with a 17% increase.

Zooming out a little bit and widening the analysis over the entire post-COVID period, Africa also performs extremely well with an honorable 3<sup>rd</sup> best compounded growth rate, very closely behind China and the Middle East.

Over the past decade, Africa has repetitively been presented as one of the least attractive solar regions, representing a mere 0.5% to 1% of the market. But with the latest info collected, this perception is quickly changing. First, it appears that Africa represented a much bigger market share, but this simply was not properly tracked and measured (and a lot still needs to be done to obtain accurate data). But more importantly, Africa now appears to be experiencing one of the fastest growths on the globe and therefore becoming a key market to tap into for all types of industry stakeholders. The next few years will show if this growth is only temporary or is based on strong foundations that make solar the unavoidable way forward to electrify the African continent.

**John van Zuylen**  
CEO, AFSIA



## Storage supports the growth of solar in Africa

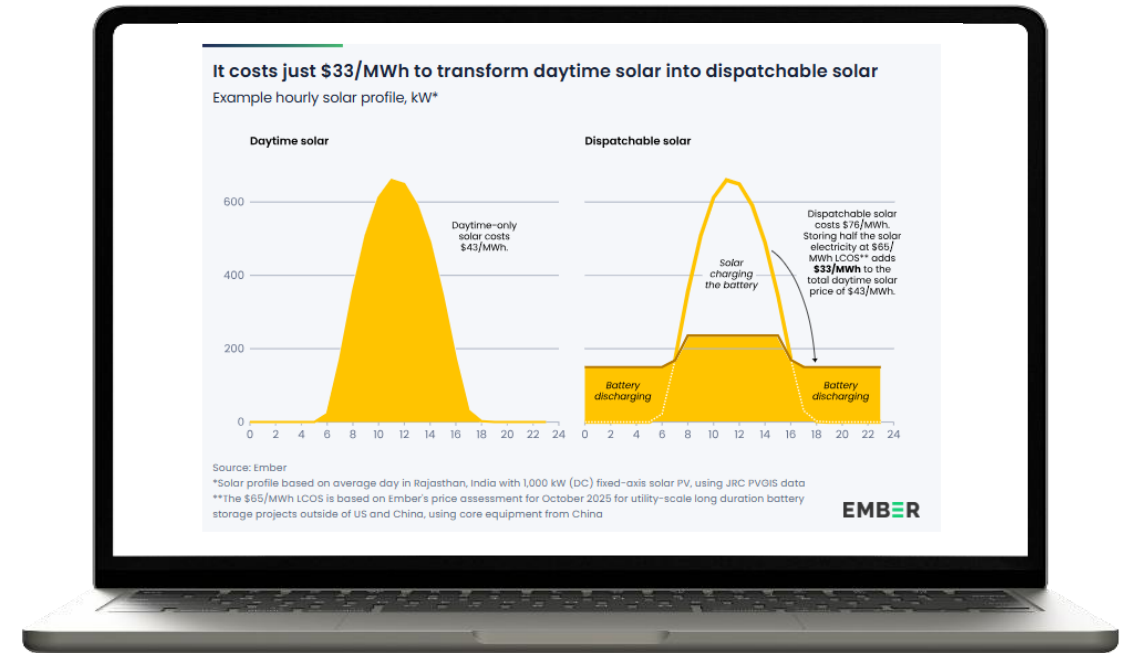
In last year's report we already identified how storage was experiencing a hockey stick growth curve in Africa, with 3, 10 and 11-fold annual increases. This growth was mainly due to a sustained cost reduction, combined with technology improvements making the solutions more flexible and longer-lasting.

Real 2025 \$/kWh	2017	2018	2019	2020	2021	2022	2023	2024	2025
Pack	79	61	57	42	36	34	33	37	36
Cell	187	157	132	123	119	132	111	78	76
Total	266	218	189	165	155	166	144	115	112
YoY %		-18%	-13%	-13%	-6%	7%	-13%	-20%	-3%

**CAGR = -10%**

This ever-decreasing price of storage has game-changing implications for a region like Africa with a dire need for stable and baseload power. Indeed, solar has for long been one of the cheapest and most versatile sources of power, but its intermittency and the fact that it is produced only during the day have limited its use in the African energy mix.

But at an affordable cost, storage can help solar overcome these limitations and become the main contributor in the African power generation scene (more so than in many other regions of the world, thanks to the excellent solar irradiation of the continent). Energy think tank Ember provided an excellent demonstration of this by analyzing the latest cost storage and identifying how much it would cost to transform “daytime solar” to “fully dispatchable solar” thanks to storage. The answer is “it costs just \$33/MWh to transform daytime solar into dispatchable solar”



The analysis looked at such a scenario in Rajasthan, a sunny region of India, but many countries in Africa enjoy similar solar irradiation.

Based on this analysis, it now costs only \$33/MWh to make solar dispatchable (e.g: this is the cost of storing excess solar electricity and releasing it when needed later during the evening, night or early morning).

Adding the cost of generating the solar electricity in Rajasthan, evaluated at \$43/MWh, it brings around-the-clock solar energy at a total cost of only \$76/MWh, which is already competitive with other forms of firm generation in many markets and for example cheaper than a new gas power plant, especially if the country relies on expensive LNG imports.

### The Ember study concludes:

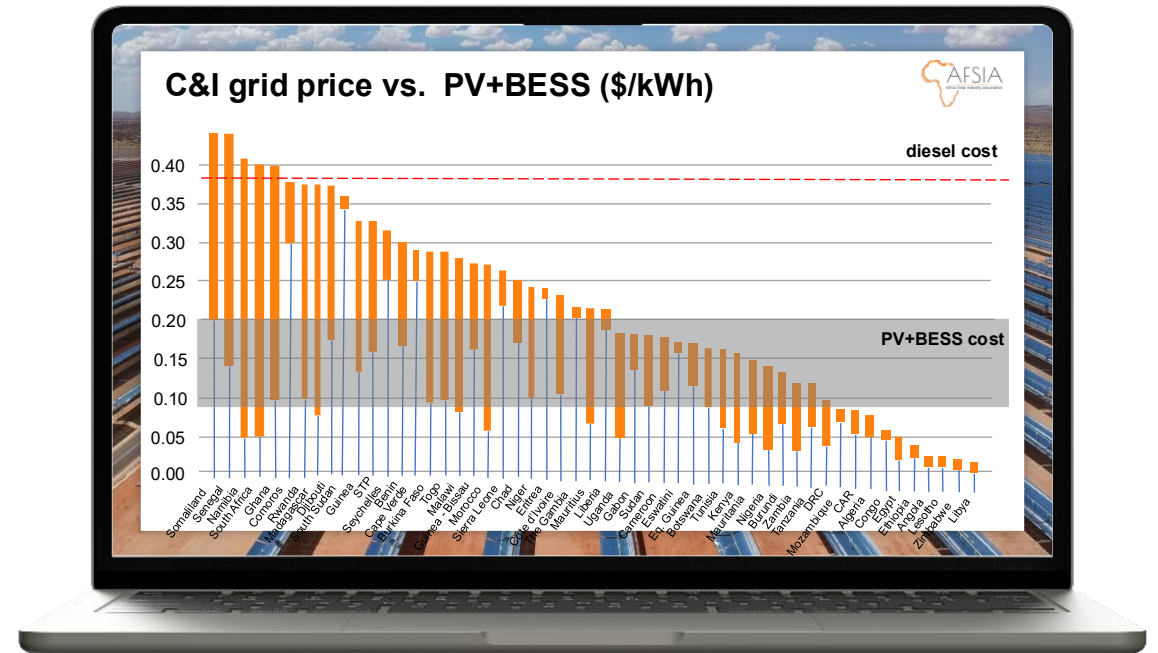
Cheap batteries do not just complement solar — they unlock its full potential. Solar is no longer just cheap daytime electricity; with storage, it becomes dispatchable, anytime electricity. Together, solar and batteries are on track to meet much of the world's energy demand growth over the next decade.

The graph above plots the ranges of electricity prices for C&I customers across each African country (orange bars). The grey area identifies the cost range of PV+BESS around 2021. At that time, PV+BESS was still significantly more expensive than most grid tariffs, but also than diesel-generated electricity.



Fast-forward to 2025, grid tariffs have not fundamentally changed in USD terms (and if they have, they have increased). But solar generation combined with storage has significantly decreased. Taking into this new cost of storage, the grey range has moved down to somewhere between \$0.07 and \$0.20 (taking into imperfect load curves and solar electricity consumption). At this price point, PV+BESS has become extremely competitive with C&I grid prices, let alone diesel generators, as depicted in the graph below:

Moreover, the above graph does not even take into account grid outages which would force the end-users to either use diesel generators or simply pause their business activity (causing losses). In reality, PV+BESS may already be more competitive than the grid in almost all African countries. And there all reason to believe that this trend and the adoption of PV+BESS is going to accelerate over the next few years, as grid prices are invariably increasing over time, while PV+BESS continues its downward slope.





**Peter Wamalwa**

Digital Business Manager Africa, JA Solar



## JA Solar's BESS Solution: Revolutionizing On/Off-Grid C&I Microgrids

In an era where energy reliability and sustainability are paramount for commercial and industrial (C&I) operations, JA Solar Technology Co., Ltd. introduces its advanced Battery Energy Storage System (BESS) solution tailored for on/off-grid C&I microgrids. This integrated PV-storage-generator system addresses key pain points in energy management, offering a robust framework for businesses facing unreliable power supplies. By combining solar photovoltaic (PV) generation, energy storage, and backup generators, the solution ensures seamless power delivery, cost savings, and environmental benefits.

The challenges in C&I energy landscapes are multifaceted. Unreliable grids and frequent load-shedding lead to costly downtime, disrupting business operations and productivity. Volatile electricity prices, coupled with the reliance on polluting diesel backups, make cost control unpredictable and environmentally harmful. Additionally, solar generation often mismatches demand patterns, resulting in low self-consumption rates and high energy waste through curtailment. These issues not only inflate operational expenses but also hinder sustainable practices.

JA Solar's BESS solution counters these challenges with innovative features. It supports both AC and DC coupling, allowing multi-parallel Power Conversion Systems (PCS) up to 3MW. This enables a seamless transition from grid-connected to island mode in  $\leq 20\text{ms}$  using PQ/VF control modes, guaranteeing uninterrupted supply to critical loads during grid failures. The site Energy Management System (EMS) intelligently coordinates PV arrays, storage units, and generators to optimize energy dispatch. This reduces diesel dependence while maintaining continuous power for essential operations. Furthermore, the system's black start capability facilitates autonomous power restoration and energy reconstruction, ensuring quick recovery from outages.

The benefits are tangible and multifaceted. The integrated PV-storage-generator approach enhances power reliability and system stability, mitigating the impacts of grid failures and load shedding. Energy storage enables peak-valley arbitrage, allowing users to store low-cost energy during off-peak hours and use it during high-demand periods, reducing electricity costs by 6%-12% and minimizing reliance on expensive backup power. By regulating renewable energy fluctuations, the system boosts self-consumption and curtails waste, promoting efficient use of solar resources.

Delving into the advantages, safety stands out as a core pillar. JA Solar implements comprehensive cell screening with multi-dimensional battery cell selection and testing protocols. Multi-layer protection integrates electrical, structural, and explosion-proof safeguards, including a three-level fire protection design. The company boasts zero safety incidents, underscoring a proven track record of no accidents. For cost efficiency, the solution offers an integrated control for PV-storage-generator systems that optimizes overall energy costs. It features low auxiliary energy consumption, high system-wide efficiency, and a modular design that streamlines operation and maintenance.

Reliability is equally emphasized. The system supports seamless grid-connected/off-grid transitions and black-start capabilities. It exhibits strong environmental adaptability and immunity to interference, aided by an isolated transformer. JA Solar provides one-stop service and full lifecycle intelligent operations and maintenance (O&M) support, ensuring long-term performance.

The technical specifications highlight a range of models: JAP-100kW, JAP-150kW, JAP-250kW, JAG-500kW, and JAG-1000kW. On the AC side, nominal powers range from 100kW to 1000kW, with corresponding nominal currents from 144A to 1445A. All models share a nominal voltage of 400V (3W+N+PE), a voltage range of 320-460V, and a nominal frequency of 50/60Hz. Power factor is adjustable from 1.0 leading to 1.0 lagging, with overload capacity at 110% long-term and 120% for 1 minute. On/off-grid switching is supported in 20ms, and isolation transformers vary slightly: 270/400V for JAP-100kW, and 315/400V for the others.

PV integration is optional, with MPPT trackers numbering 2 for the smaller models, up to 16 for JAG-1000kW. MPPT rated powers span 150kWp to 1200kWp. Batteries use 3.2V/280Ah LFP cells in configurations from 1P240S to 10P240S, with cluster counts from 1 to 10. Nominal energies range from 215kWh to 2150kWh, all with a max C-rate of 0.5P at 25°C.

Basic parameters include IP54 protection level across all models. Maximum off-grid parallel quantities are 6 for most, dropping to 3 for JAG-1000kW. All operate up to 2000m altitude (with derating above), use intelligent air cooling, and support EMS communication via RS485 and TCP/IP. Fire suppression systems employ Aerosol for smaller models and HFC-227ea for larger ones. Notably, the number of MPPT trackers and battery clusters is customizable to suit specific project needs.

JA Solar's BESS solution exemplifies a forward-thinking approach to C&I microgrids, blending reliability, efficiency, and safety. For inquiries, contact [africa@jasolar.com](mailto:africa@jasolar.com) or visit [www.jasolar.africa](http://www.jasolar.africa). This innovation not only stabilizes energy supply but also drives economic and ecological advantages, positioning businesses for a resilient future.

# Assessing national solar performance on a comparable basis

In the solar sector, performance is most often assessed using absolute metrics: higher installed capacity is equated with stronger performance. While useful, this approach tends to produce a repetitive narrative that consistently highlights the same large or more advanced markets. However, Africa is characterized by significant diversity in country size, population, economic structure, and power-sector maturity. As a result, national starting points in the solar transition vary widely, making comparisons based solely on installed megawatts inherently limited.

## Assessing national solar performance on a comparable basis

For the third consecutive year, the Africa Solar Outlook therefore applies a complementary, relative framework to assess national solar performance. By examining indicators such as installed capacity in relation to population, country size, or existing power generation, this approach places solar development in its proper national context. The resulting rankings differ markedly from those based on absolute figures alone, offering greater visibility to countries that are achieving tangible solar progress relative to their scale, while moderating the prominence of larger markets whose performance may appear less significant when viewed proportionally.

We will look at 3 specific relative metrics:

1. “Wp/capita” (already mentioned in 2025 report)
2. “solar % in the overall generation mix” (already mentioned in 2025 report)

# Wp/capita (AFSIA data)

Ranking 2025	Country	Population 2025 (31 Dec)	MWp 2025	Wp/Capita	Movement vs. 2024
1	South Africa	65,103,183	11673.05	179.30	+1
2	Seychelles	133,903	23.36	174.44	-1
3	Mauritius	1,266,740	169.21	133.58	-
4	Namibia	3,122,815	390.84	125.16	-
5	Cape Verde	528,503	40.89	77.37	-
6	Tunisia	12,382,923	903.46	72.96	+8
7	Botswana	2,582,115	170.67	66.10	+12
8	Morocco	38,598,310	1216.30	31.51	-1
9	Mauritania	5,385,601	169.04	31.39	-1
10	Egypt	119,217,492	3369.38	28.26	-4
11	Eswatini (formerly Swaziland)	1,262,917	28.93	22.91	+2
12	Senegal	19,142,433	378.31	19.76	-2
13	Zambia	22,206,135	392.67	17.68	-2

14	Comoros	890,771	12.97	14.56	+14
15	Lesotho	2,376,064	30.38	12.78	-3
16	Zimbabwe	17,107,668	208.97	12.21	+7
17	Kenya	58,071,206	622.39	10.72	+4
18	Angola	39,602,046	419.79	10.60	-3
19	Burkina Faso	24,330,732	257.07	10.57	-1
20	The Gambia	2,852,342	27.70	9.71	-4
21	Algeria	47,734,166	461.68	9.67	-4
22	Togo	9,822,599	83.52	8.50	-2
23	Central African Republic	5,602,026	43.61	7.78	-1
24	Mali	25,551,050	172.95	6.77	+1
25	Eritrea	3,643,677	24.17	6.63	+11
26	Sierra Leone	8,906,330	56.86	6.38	+6
27	Malawi	22,489,709	141.42	6.29	-3

# Wp/capita (AFSIA data)

Ranking 2025	Country	Population 2025 (31 Dec)	MWp 2025	Wp/Capita	Movement vs. 2024
28	Ghana	35,375,189	192.47	5.44	-1
29	Sao Tome and Principe	242,566	1.28	5.27	-3
30	South Sudan	12,307,775	59.36	4.82	+5
31	Gabon	2,619,549	11.62	4.44	-2
32	Mozambique	36,113,746	154.99	4.29	-2
33	Somalia	19,965,478	85.64	4.29	-2
34	Sudan	52,446,879	190.75	3.64	+10
35	Chad	21,271,325	75.65	3.56	+16
36	Madagascar	33,119,151	107.05	3.23	-2
37	Benin	14,986,592	48.39	3.23	-4
38	Niger	28,347,486	82.16	2.90	+2
39	Equatorial Guinea	1,960,823	5.21	2.66	+13
40	Djibouti	1,191,463	3.15	2.65	-31

41	Guinea	15,266,884	35.83	2.35	-3
42	Cameroon	30,247,871	70.18	2.32	-5
43	Uganda	52,050,973	112.37	2.16	-4
44	Nigeria	239,910,392	488.41	2.04	-1
45	Cote d'Ivoire	33,091,726	64.27	1.94	-3
46	Rwanda	14,727,783	23.76	1.61	-5
47	Libya	7,497,050	9.47	1.26	+6
48	Liberia	5,788,768	5.25	0.91	+1
49	Burundi	14,554,811	12.52	0.86	-2
50	Guinea-Bissau	2,273,118	1.85	0.81	-5
51	Republic of the Congo	6,558,560	4.58	0.70	-5
52	Tanzania	71,517,935	38.05	0.53	-4
53	Democratic Republic of the Congo	114,565,332	51.59	0.45	+1
54	Ethiopia	137,130,638	40.05	0.29	-4

## In the Wp/capita ranking, we notice that

- The Top 5 remains almost unchanged this year, with South Africa, Seychelles, Mauritius, Namibia, and Cape Verde all retaining their positions among the leading performers.
- The cut-off rate for the Top 5 remains stable, standing at 77 Wp/capita, unchanged from last year.
- A shift at the top of the ranking is observed this year. South Africa takes the number one position from Seychelles, driven by a significant increase in its Wp/capita to 179 Wp/capita, up from 145 Wp/capita last year. Seychelles remains close behind in second place with 174 Wp/capita.
- Chad records the largest jump in this year's ranking, climbing 16 positions, mainly following the commissioning of the 50 MW solar power plant in N'Djamena.
- Other notable rising stars of 2025 include Comoros, Equatorial Guinea, and Botswana, which moved up 14, 13, and 12 positions respectively.

# Wp/capita (AFSIA data adjusted using Chinese export data)

Ranking 2025	Country	Population 2025 (31 Dec)	MWp 2025	Wp/Capita	Movement vs. 2024
1	Namibia	3,122,815	1462.84	468.44	+3
2	Seychelles	133,903	43.36	323.80	-1
3	South Africa	65,103,183	18159.05	278.93	-1
4	Mauritius	1,266,740	317.21	250.41	-1
5	Tunisia	12,382,923	2354.46	190.14	+9
6	Djibouti	1,191,463	165.15	138.61	+3
7	Cape Verde	528,503	58.89	111.43	-2
8	Morocco	38,598,310	4254.30	110.22	-1
9	Senegal	19,142,433	2052.31	107.21	+1
10	Egypt	119,217,492	8255.38	69.25	-4
11	Botswana	2,582,115	176.67	68.42	+8
12	Togo	9,822,599	637.52	64.90	+8
13	Mauritania	5,385,601	319.04	59.24	-5

14	Algeria	47,734,166	2467.68	51.70	+3
15	Comoros	890,771	45.97	51.60	+13
16	Kenya	58,071,206	2435.39	41.94	+5
17	Zambia	22,206,135	908.67	40.92	-6
18	The Gambia	2,852,342	98.70	34.60	-2
19	Zimbabwe	17,107,668	558.97	32.67	+4
20	Mozambique	36,113,746	1016.99	28.16	+10
21	Benin	14,986,592	411.39	27.45	+12
22	Cameroon	30,247,871	827.18	27.35	+15
23	Ghana	35,375,189	948.47	26.81	+4
24	Eritrea	3,643,677	87.17	23.92	+12
25	Eswatini (formerly Swaziland)	1,262,917	29.93	23.70	-12
26	Liberia	5,788,768	127.25	21.98	+23
27	Sudan	52,446,879	1073.75	20.47	+17

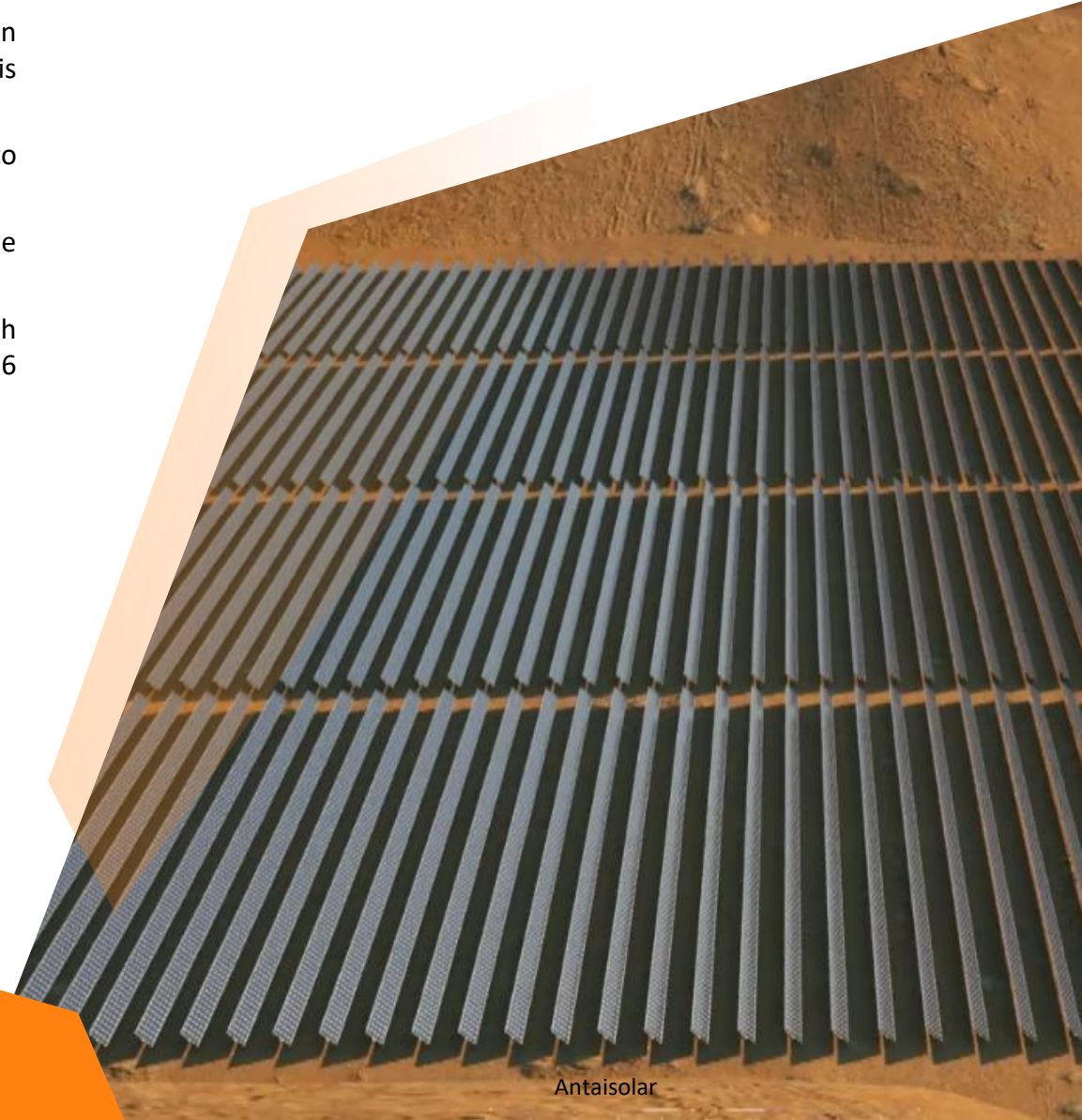
# Wp/capita (AFSIA data adjusted using Chinese export data)

Ranking 2025	Country	Population 2025 (31 Dec)	MWp 2025	Wp/Capita	Movement vs. 2024
28	Nigeria	239,910,392	4816.41	20.08	+15
29	Cote d'Ivoire	33,091,726	660.27	19.95	+13
30	Guinea	15,266,884	301.83	19.77	+8
31	Somalia	19,965,478	381.64	19.12	-
32	Tanzania	71,517,935	1317.05	18.42	+16
33	Sao Tome and Principe	242,566	4.28	17.64	-7
34	Burkina Faso	24,330,732	428.07	17.59	-16
35	Madagascar	33,119,151	565.05	17.06	-1
36	Mali	25,551,050	428.95	16.79	-11
37	Central African Republic	5,602,026	90.61	16.17	-15
38	Lesotho	2,376,064	34.38	14.47	-26
39	Malawi	22,489,709	323.42	14.38	-15
40	Angola	39,602,046	465.79	11.76	-25

41	Gabon	2,619,549	29.62	11.31	-12
42	Chad	21,271,325	232.65	10.94	-9
43	Democratic Republic of Congo	114,565,332	1128.59	9.85	+11
44	Uganda	52,050,973	451.37	8.67	-5
45	Libya	7,497,050	59.47	7.93	+8
46	Equatorial Guinea	1,960,823	13.21	6.74	+6
47	Sierra Leone	8,906,330	56.86	6.38	-15
48	Niger	28,347,486	155.16	5.47	-8
49	South Sudan	12,307,775	67.36	5.47	-14
50	Republic of Congo	6,558,560	35.58	5.43	-4
51	Guinea-Bissau	2,273,118	8.85	3.89	-6
52	Rwanda	14,727,783	45.76	3.11	-11
53	Burundi	14,554,811	36.52	2.51	-6
54	Ethiopia	137,130,638	184.05	1.34	-4

Following the integration of the additional Chinese export data source to refine installed solar capacity estimates, the Wp/capita ranking has been updated. This revised view leads to several notable changes, which are:

- The Top 5 sees a notable change this year, with Tunisia joining the group for the first time in the past three years, alongside Namibia, Seychelles, South Africa, and Mauritius. This entry is also largely driven by the commissioning of the 120 MWp Kairouan Solar PV plant
- The cut-off rate for the Top 5 increases sharply in 2025, reaching 190 Wp/capita, compared to 77 Wp/capita last year, reflecting a higher overall level of identified installed capacity
- A change at the top of the ranking is observed this year, with Namibia taking the number one position, overtaking Seychelles, now ranked #2, while South Africa moves to #3
- Outside the leading group, several countries record significant upward movements, with Liberia, Sudan, and Tanzania emerging as the rising stars of 2025, climbing 23, 17, and 16 positions respectively



## Solar contribution in electricity mix

The share of solar in the overall electricity mix remains a particularly relevant metric, as installed solar capacity does not translate into electricity production in the same way as other generation technologies such as hydro, coal, gas, or nuclear. Comparing installed capacities across technologies therefore provides a distorted picture of their respective contributions. For instance, while 1 MW of hydropower can generate around 5,000 MWh of electricity per year depending strongly on site-specific conditions, 1 MW of solar capacity in Africa produces on average approximately 1,500 MWh annually, with significant variation from one country to another. Expressing contributions in terms of electricity generated (MWh or GWh), rather than installed megawatts, therefore allows for a more meaningful like-for-like comparison.

This indicator is also essential from a policy perspective. Many African governments have publicly committed, often within the framework of their COP engagements, to achieving a defined share of renewable energy and/or solar within their national electricity mix. Without a clear estimate of how much electricity solar actually produces in a given country, it is not possible to meaningfully track progress toward these objectives.

As in previous editions, this analysis relies on the comprehensive electricity generation [database of the African Energy Commission \(AFREC\)](#), an institution of the African Union, to assess overall national electricity figures. To reflect actual electricity consumption more accurately, the methodology focuses on total available electricity, rather than gross production alone. Total available electricity is calculated by taking gross national electricity production, adding imported electricity, and subtracting exported electricity. This approach ensures that countries with significant cross-border electricity exchanges are assessed on the basis of electricity effectively available for domestic use.

For solar generation, AFSIA continues to rely on its latest database of installed solar capacities in each country, combined with average national solar yield assumptions to estimate annual solar electricity generation in GWh. In line with the approach used for total available electricity, a corresponding adjustment is applied in cases where solar-generated electricity is exported. Taken together, these assumptions provide AFSIA's best approximation of the share of solar in national electricity consumption and allow for a consistent comparison of relative performance across countries.

# Solar % in power generation mix (AFSIA data)

Ranking 2025	Country	Available 2023 GWh	Solar gene-ration (GWh)	Solar % in energy mix	Movement vs. 2024
1	Central African Republic	185	70	37.3%	-
2	Chad	402	148	36.7%	+36
3	Somalia	489	158	32.4%	+1
4	Sierra Leone	456	82	18.1%	+5
5	Namibia	4,099	762	17.7%	-2
6	Mauritania	1,774	296	16.7%	-4
7	Comoros	110	18	16.5%	+13
8	South Sudan	713	95	13.3%	+2
9	Burkina Faso	3,491	411	11.8%	-1
10	Malawi	2,162	240	11.0%	-5
11	South Africa	203,483	22,762	10.7%	+2
12	Eritrea	421	45	10.6%	+9
13	Cape Verde	659	70	10.5%	-6

14	Kenya	13,116	1,151	8.8%	+1
15	Niger	1,795	152	8.5%	-1
16	Madagascar	2,525	193	7.6%	+1
17	Mauritius	3,265	245	7.5%	-6
18	Senegal	8,334	605	7.3%	-6
19	Tunisia	23,772	1,581	6.6%	+23
20	Botswana	4,695	324	6.6%	+20
21	Seychelles	613	40	6.5%	-2
22	Togo	1,978	121	6.1%	-6
23	Lesotho	952	56	5.9%	-5
24	Morocco	45,398	2,250	4.9%	-2
25	Angola	15,830	672	4.2%	-
26	Burundi	461	18	3.9%	+3
27	The Gambia	1,122	42	3.7%	-21

# Solar % in power generation mix (AFSIA data)

Ranking 2025	Country	Available 2023 GWh	Solar gene-ration (GWh)	Solar % in energy mix	Movement vs. 2024
28	Zimbabwe	10,506	366	3.4%	+4
29	Mali	7,911	303	3.4%	-5
30	Zambia	23,660	668	3.3%	-2
31	Benin	2,078	63	3.0%	-1
32	Egypt	227,820	6,570	2.9%	-9
33	Uganda	5,738	174	2.8%	-6
34	Eswatini (formerly Swaziland)	1,631	42	2.6%	-
35	Rwanda	1,264	31	2.4%	-9
36	Guinea	3,273	61	1.9%	-3
37	Sudan	20,345	353	1.7%	+4
38	Nigeria	49,052	757	1.5%	-3
39	Ghana	27,021	289	1.2%	-8
40	Cameroon	9,038	105	1.2%	-1

41	Sao Tome and Principe	118	1	1.1%	-4
42	Guinea-Bissau	293	3	0.9%	-6
43	Algeria	93,186	877	0.9%	-
44	Mozambique	17,191	240	0.8%	-
45	Cote d'Ivoire	12,787	96	0.7%	-
46	Djibouti	825	5	0.7%	+5
47	Tanzania	11,538	67	0.5%	-1
48	Democratic Republic of the Congo	16,387	85	0.5%	+1
49	Equatorial Guinea	1,580	7	0.4%	+4
50	Ethiopia	15,985	74	0.4%	-2
51	Liberia	2,168	7	0.3%	-4
52	Republic of the Congo	2,785	6	0.2%	-2
53	Gabon	9,693	15	0.2%	-1
54	Libya	37,172	18	0.0%	-

## In this ranking we observe:

- African countries continue to demonstrate strong performance in terms of solar penetration in their electricity mix, with 23 countries now generating 5% or more of the electricity they consume from solar
- The upper end of the ranking continues to deepen, with 7 countries already exceeding 15% solar penetration, and 13 countries reaching more than 10% of solar in their total electricity consumption
- The Top 3 records notable changes this year, with the Central African Republic retaining the leading position, albeit with a slight decrease in its solar share, while Chad and Somalia emerge as newcomers, ranking 2nd and 3rd respectively
- The largest upward movement in this year's ranking is observed in Chad. Following the commissioning of a 50 MW solar plant in N'Djamena, the country climbs 36 positions, securing 2nd place overall
- Tunisia records the second biggest improvement of 2025, rising 23 positions to reach 19th place, largely driven by the commissioning of the 120 MWp Kairouan Solar PV plant
- Other countries showing notable progress in this year's ranking include Comoros, Botswana, and Eritrea

# Solar % in power generation mix (AFSIA data adjusted using Chinese export data)

Ranking 2025	Country	Available 2023 GWh	Solar gene-ration (GWh)	Solar % in energy mix	Movement vs. 2024
1	Somalia	489	706	144.4%	+3
2	Chad	402	454	112.9%	+36
3	Central African Republic	185	145	77.5%	-2
4	Namibia	4,099	2,853	66.4%	-1
5	Comoros	110	64	58.5%	+15
6	Togo	1,978	924	46.7%	+10
7	Madagascar	2,525	1,017	40.3%	+10
8	Senegal	8,334	3,284	39.4%	+4
9	Eritrea	421	161	38.3%	+12
10	Kenya	13,116	4,505	34.3%	+5
11	Djibouti	825	281	34.0%	+40
12	Mauritania	1,774	558	31.5%	-10
13	Benin	2,078	535	25.7%	+17

14	Malawi	2,162	550	25.3%	-9
15	Burkina Faso	3,491	685	19.6%	-7
16	Tanzania	11,538	2,305	19.0%	+30
17	Sierra Leone	456	82	18.1%	-8
18	Tunisia	23,772	4,120	17.3%	+24
19	Morocco	45,398	7,870	17.2%	+3
20	South Africa	203,483	35,410	16.6%	-7
21	Niger	1,795	287	16.0%	-7
22	Guinea	3,273	513	15.7%	+11
23	Cape Verde	659	100	15.2%	-16
24	South Sudan	713	108	15.1%	-14
25	Nigeria	49,052	7,465	14.5%	+10
26	Mauritius	3,265	460	14.1%	+15
27	Cameroon	9,038	1,241	13.7%	+12

# Solar % in power generation mix (AFSIA data adjusted using Chinese export data)

Ranking 2025	Country	Available 2023 GWh	Solar gene-ration (GWh)	Solar % in energy mix	Movement vs. 2024
28	The Gambia	1,122	148	13.1%	-22
29	Seychelles	613	74	12.0%	-10
30	Burundi	461	53	11.5%	-1
31	Democratic Republic of the Congo	16,387	1,862	11.3%	+18
32	Uganda	5,738	700	11.2%	-5
33	Sudan	20,345	1,986	9.8%	+8
34	Zimbabwe	10,506	978	9.0%	-2
35	Mali	7,911	751	8.3%	-11
36	Liberia	2,168	178	8.2%	+11
37	Zambia	23,660	1,545	7.7%	+9
38	Cote d'Ivoire	12,787	990	7.2%	+7
39	Egypt	227,820	16,098	7.0%	-16
40	Botswana	4,695	336	6.8%	-

41	Lesotho	952	64	6.6%	-23
42	Ghana	27,021	1,423	5.8%	-11
43	Mozambique	17,191	1,576	5.5%	+1
44	Algeria	93,186	4,689	4.9%	-1
45	Angola	15,830	745	4.7%	-20
46	Rwanda	1,264	59	4.7%	-20
47	Guinea-Bissau	293	13	4.5%	-11
48	Sao Tome and Principe	118	4	3.8%	-11
49	Eswatini (formerly Swaziland)	1,631	43	2.7%	-15
50	Ethiopia	15,985	340	1.9%	-2
51	Republic of the Congo	2,785	44	1.5%	-1
52	Equatorial Guinea	1,580	18	1.1%	+1
53	Gabon	9,693	39	0.4%	-1
54	Libya	37,172	116	0.3%	-


Building on the updated capacity assessment introduced above with the introduction of a new data source, the analysis of solar generation has also been revisited, resulting in several notable shifts:

- The composition of the top three changes significantly. While the Central African Republic remains among the leading performers, it moves from first to third place. Chad consolidates its strong position in second place, while Somalia now takes the top spot, rising from third place under the previous data set.
- The overall level of solar penetration appears markedly higher, with 14 countries now exceeding the 25% threshold and 32 countries producing more than 10% of their electricity from solar, highlighting a broader and deeper contribution of solar across the continent.
- Djibouti records the largest upward movement in the ranking, climbing 40 positions to reach 11th place. Chad follows as the second strongest mover, advancing 36 spots to second place, supported by the commissioning of GSU's 50 MW solar plant in N'Djamena. Tunisia also posts a notable rise, moving up 24 positions following the commissioning of its 120 MWp solar power plant in Kairouan.

- Additional upward shifts are observed in Tanzania, the Democratic Republic of Congo, Benin, Mauritius, and Comoros, reflecting an involvement of solar in their respective electricity mixes.
- While reading you may have noticed Somalia and Chad show solar penetration exceeding **100%**. This is likely caused by two factors may be taken into account: AFREC's national electricity data may underestimate total solar generation by accounting for the on-grid values and dismissing the off-grid ones, while our estimates based on Chinese solar panel export data could slightly overestimate the installed capacity, as not all recorded exported panels may have been used solely for local electricity generation. These figures should be interpreted as indicating very high solar contribution, rather than literal excess production.

# Country Comparison Tables

Country Comparison Tables / Duties & Taxes




Country	Import Duties	VAT on import	VAT
Algeria	Import duties range from 0 to 60%		The standard VAT is 19% reduced to 9%
Angola	Import duty rate ranges from 2 to 50%		The standard VAT rate applies at 14%
Benin	Duties for off-grid solar products range from 5-20%	VAT exemptions on solar equipment import	2% of VAT applies to off-grid solar products
Botswana	Customs duty exemptions on imported solar technologies		Zero-rated VAT on solar equipment
Burkina Faso	Solar equipment is import duty-free		No VAT on solar equipment
Burundi	Solar equipment is duty free, SHS components are taxed at 10%-35%		Solar equipment is VAT-free and SHS components are taxed at 18%
Cameroon	No custom duty on solar products		No VAT on solar equipment
Cape Verde	No import duties on equipment used to produce RE	Solar equipment import is VAT free	A 15.5% VAT rate is applied on solar water heaters

If you want to compare how countries perform in relation to their neighbors, the **summary tables** are exactly what you need!

They give a quick, easy-to-navigate overview of the key information for each country about:

- Electrification rate
- Electricity tariffs
- Import duties
- VAT on import
- VAT
- Availability or absence of special policy (FiT, net-metering, wheeling)

Country Comparison Tables / Electrification Rate & Electricity Tariffs



Country	Electrification Rate	Electricity Tariffs				Source
		Residential	Commercial	Industrial		
Algeria	99%	0.311 TO 0.311	0.008 TO 0.067	0.005 TO 0.051		<a href="#">Link</a>
Angola	51%	0.004 TO 0.021	0.011 TO 0.021	0.011 TO 0.018		<a href="#">Link</a>
Benin	40%	0.158 TO 0.266	0.164 TO 0.295	0.158 TO 0.270		<a href="#">Link</a>
Botswana	75.6%	0.052 TO 0.109	0.086 TO 0.168	0.092 TO 0.092		<a href="#">Link</a>
Burkina Faso	21%	0.135 TO 0.297	0.097 TO 0.288	0.126 TO 0.252		<a href="#">Link</a>
Burundi	12%	0.028 TO 0.186	0.066 TO 0.136	0.066 TO 0.136		<a href="#">Link</a>
Cameroon	74%	0.090 TO 0.178	0.151 TO 0.178	0.11 TO 0.128		<a href="#">Link</a>
Cape Verde	96%	0.286 TO 0.403	0.252 TO 0.291	0.252 TO 0.291		<a href="#">Link</a>
Central African Republic (CAR)	15.7%	0.104 TO 0.254	0.049 TO 0.068	0.049 TO 0.068		<a href="#">Link</a>
Chad	12%	0.153 TO 0.225	0.255 TO 0.255	0.255 TO 0.255		<a href="#">Link</a>
Comoros	75%	0.380 TO 0.380	0.270 TO 0.330	0.270 TO 0.330		<a href="#">Link</a>



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Afrigreen Debt Impact Fund



## Efficient Capital Deployment for C&I Solar Projects in Africa

Africa's commercial and industrial (C&I) solar market could save businesses billions in energy and business interruption costs – yet its growth is still well below potential. While solar photovoltaic (PV) systems offer undeniable cost advantages over diesel generators and grid electricity, the industry's growth is constrained by a critical challenge: access to affordable, timely capital. For project developers, securing financing is not just about availability – it's about aligning funding with the unique dynamics of C&I clients and risks of African markets. Without tailored solutions, the potential of C&I solar to drive economic and environmental progress across the continent will remain untapped.

# The Capital Challenge

## Timing Mismatch: Slow Decisions, Fast Execution

C&I clients often take months – or even years – to commit to a solar project. Yet, once a contract is signed, they demand rapid execution. This creates a funding gap: developers need capital certainty the moment they commit to building, but traditional financing processes are rarely agile enough to keep pace. For example, two of Afrigreen's clients, Odasco in Morocco and Empower in Nigeria, secured commercial agreements with Orange Maroc and Justrite Ltd, respectively, before even initiating debt funding discussions. The deciding factor for these developers? The speed of due diligence and execution offered by Afrigreen – a rare commodity in African financial markets.

## Long-Term Returns in Uncertain Markets

Solar C&I projects promise attractive returns, but these materialize over 10 to 20 years – a long timeline considering the political and economic instability in many African countries. Financial markets and private investors hesitate to commit to long-term financing, leaving developers facing a mismatch between contract tenors and terms of the financing sources.

## Market Size still Too Small

Despite its potential, the C&I solar market in Africa remains fragmented and relatively small. Major financial hubs like Lagos, Abidjan, Nairobi, and Casablanca lack specialized financing products for solar projects. Instead, banks treat C&I solar as a corporate lending exercise, demanding parent company guarantees or collaterals – requirements that many local developers cannot meet.

# Keys to Efficient Capital Deployment

## Availability and Timing: Funds When They Matter

For C&I projects, capital certainty is non-negotiable. Developers must either raise funds in advance or secure firm commitments from financial partners before breaking ground. Delays in funding can derail projects, especially when equipment lead times – often months for imports from Asia – are factored in.

Some developers are turning to inventory financing and trade financing to pre-stock critical equipment like PV modules, inverters, and batteries. In 2025, Afrigreen pioneered these solutions for players like SolarX and westa.solar, reducing the lag between contract signature and project initiation.

## Size Matters: Flexible Financing for Modest Investments

Most C&I projects range from a few hundred kilowatts to a few megawatts, translating to investments of \$1 million or less. Efficient capital deployment requires financing mechanisms that can mobilize modest amounts repeatedly – despite different clients / counterparties, scaling with the pace of business development.

## Reducing the Cost of Capital: The Power of Leverage

Equity is expensive in Africa, with investors demanding double-digit returns to offset perceived risks. To remain competitive and offer energy prices below 10 cts\$/kWh, developers need debt financing at single-digit interest rates, with leverage ratios of 70% or higher. This structure improves returns on investment and avoids costly shareholder dilution.

## Currency Dilemma: USD vs. Local Currency Funding

Developers face a tough choice. USD or EUR funding is cheaper and long-term but can expose projects to foreign exchange risks when power purchase agreements (PPAs) are denominated in local currency. This is a major issue in countries like Nigeria and Egypt, where currency volatility has been extremely challenging in recent years. Local currency funding is more expensive but eliminates FX exposure, provided the cost is sustainable and revenues are indexed to local inflation.

Afrigreen's local currency financing in Nigeria with Watt Renewables, westa.solar, and Empower proved that such funding can work, enabling developers to offer competitive energy prices without bearing FX risks.

# A Bright Future, If Funded Right



The C&I solar market in Africa is poised for growth – especially when associated with storage - but its success hinges on one critical factor: efficient capital deployment. By addressing the challenges of timing, cost, and currency, stakeholders can harness the full potential of solar energy and make it one of the pillars of Africa's electricity networks. The tools and strategies exist – what's needed now is to implement them on a large scale.

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Algeria	<a href="#">customs duty rate of 5% on products for the manufacture of solar panels</a>		<a href="#">The standard VAT is 19% ,reduced to 9%</a>
Angola	<a href="#">Import duty rate ranges from 2 to 50%</a>		<a href="#">The standard VAT rate applies at 14%</a>
Benin	<a href="#">Duties for off-grid solar products range from 5-20%</a>	<a href="#">VAT exemptions on solar equipment import</a>	<a href="#">21% of VAT applies to off-grid solar products</a>
Botswana	<a href="#">Customs duty exemptions on imported solar technologies</a>		<a href="#">Zero-rated VAT on solar equipment</a>
Burkina Faso	<a href="#">Solar equipment is import duty-free</a>		<a href="#">No VAT on solar equipment</a>
Burundi	<a href="#">Solar equipment is duty free, SHS components are taxed at 10%-35%</a>		<a href="#">Solar equipment is VAT-free and SHS components are taxed at 18%</a>
Cameroon	<a href="#">No custom duty on solar products</a>		<a href="#">No VAT on solar equipment</a>
Cape Verde	<a href="#">No import duties on equipment used to produce renewable energy</a>	<a href="#">Solar equipment import is VAT free</a>	<a href="#">A 15.5% VAT rate is applied on solar water heaters</a>

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Central African Republic (CAR)	<a href="#">Customs duty ranges from 5% to 20%</a>		<a href="#">The standard VAT rate is 19%</a>
Chad	<a href="#">Import duties are waived for solar energy products</a>	<a href="#">Imported RE equipment is exempt from VAT</a>	<a href="#">Equipment for RE projects are VAT exempt</a>
Comoros	<a href="#">Renewable equipment is exempt from both import duties and VAT</a>		
Democratic Republic of the Congo	<a href="#">Import duty is waived on solar equipment</a>	<a href="#">No VAT on imports of solar equipment</a>	<a href="#">16% VAT applies to off-grid solar products</a>
Djibouti	<a href="#">Renewable energy equipment is import duty-free</a>		<a href="#">The standard VAT rate on goods and services is 10%</a>
Egypt	<a href="#">2% customs duty on equipment used for RE production</a>		<a href="#">5% VAT applies to solar plant equipment</a>
Equatorial Guinea	<a href="#">Standard customs duty ranges from 5% to 30%</a>		<a href="#">Prevailing VAT rate is 15%, with a reduced rate of 5%</a>
Eritrea	<a href="#">Solar panels and renewable energy equipment are duty-free</a>		<a href="#">5-12% sales tax applies on goods and services</a>

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Eswatini (formerly Swaziland)	<a href="#">Solar panels are subject to a 0% import duty</a>		<a href="#">VAT is 15% on most goods and services</a>
Ethiopia	<a href="#">Off-grid solar products are Import duty free</a>		<a href="#">VAT exemption on off-grid solar products</a>
Gabon	<a href="#">Import duty exemptions for solar equipment</a>		<a href="#">5% VAT on RE generation equipment</a>
Ghana	<a href="#">Import tax exemption for solar and RE equipment</a>		<a href="#">Solar equipment is VAT exempt</a>
Guinea	<a href="#">Import of solar panels is taxed at a 5% rate</a>		<a href="#">Equipment for production of RE is VAT exempt</a>
Guinea-Bissau	<a href="#">Exempted import duty on RE equipment</a>		<a href="#">The standard VAT is 19% , with a reduced rate of 10%</a>
Ivory Coast/Cote d'Ivoire	<a href="#">Renewable energy equipment is exempt from import duties</a>		<a href="#">Equipment for production of solar energy is VAT exempt</a>
Kenya	<a href="#">Solar products are exempt from import duty</a>		<a href="#">16% VAT is levied on solar products</a>

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Lesotho	<a href="#">Import duties range between 0-30%</a>		<a href="#">A reduced VAT rate of 5% applies on renewable energy equipment</a>
Liberia	<a href="#">No import tariffs on off-grid solar products</a>		<a href="#">The new standard VAT is 18%</a>
Libya	<a href="#">No general customs duties on imports; most goods pay a 5% service fee plus 0.5% minor import charges</a>		<a href="#">Solar equipment is VAT-exempt</a>
Madagascar	<a href="#">Import duty waived for RE equipment (policy may change in 2026)</a>	<a href="#">No VAT on imported RE equipment</a>	<a href="#">Solar equipment is VAT-exempt</a>
Malawi	<a href="#">Import duty exemption for solar products</a>		<a href="#">Solar products are levied at a rate of 16.5%</a>
Mali	<a href="#">Solar equipment is customs duty-free</a>		<a href="#">Off-grid solar products are VAT-free</a>
Mauritania	<a href="#">Customs duties and VAT exemption on import of equipment used for RE power generation</a>	<a href="#">Green hydrogen equipment imports are VAT-exempt</a>	<a href="#">Local goods are subject to a 16% VAT rate</a>
Mauritius	<a href="#">PV systems are exempted from customs duty</a>	<a href="#">Most imported goods are subject to a 15% VAT</a>	<a href="#">No VAT for renewable energy systems</a>

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Morocco	<a href="#">Solar panels have a 10% import duty, rising to 25% in 2026</a>		<a href="#">A reduced VAT rate of 10% for solar equipment</a>
Mozambique	<a href="#">7.5% import duty applies on solar products</a>		<a href="#">The standard VAT is 16% , but solar panel materials for rural electrification exempt until the end of 2025</a>
Namibia	<a href="#">Import duties exemption on RE equipment</a>		<a href="#">15% VAT is levied on most goods</a>
Niger	<a href="#">Import duty exemption for RE products</a>		<a href="#">VAT exemption for RE products</a>
Nigeria	<a href="#">5% Import duties and 5% VAT on imported solar components</a>		<a href="#">Solar panels are VAT exempt</a>
Republic of the Congo	<a href="#">The SNE 2025 commits to fully exempting customs duties and VAT on imported RE equipment</a>		<a href="#">The standard VAT is 18.9%</a>
Rwanda	<a href="#">No customs duty on solar equipment</a>		<a href="#">Solar equipment is VAT exempt</a>
Sao Tome and Principe	<a href="#">Solar components are exempt from customs duty</a>		<a href="#">The standard VAT is 15%, reduced to 7.5%</a>

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Senegal	<a href="#">3% duty on solar panels, 27% on batteries</a>		<a href="#">RE equipment are VAT exempt</a>
Seychelles	<a href="#">PV systems are duty-free</a>	<a href="#">Imported goods for RE generation are VAT free</a>	
Sierra Leone	<a href="#">Duty-free import of renewable energy products</a>		<a href="#">VAT exemption on a case-by-case basis for RE equipment</a>
Somalia	<a href="#">Solar equipment eligible for duty-free import</a>		<a href="#">The standard VAT is 5%</a>
Somaliland	<a href="#">100% exemption for solar panels</a>		<a href="#">5% Standard VAT applies on goods and services</a>
South Africa	<a href="#">10% import duty on solar panels</a>	<a href="#">The standard VAT on imported solar panels is 15%</a>	<a href="#">VAT on solar panels range between 15-16%</a>
South Sudan	<a href="#">0%-25% duties on solar products</a>		<a href="#">Solar products are exempt from VAT</a>
Sudan	<a href="#">PV components exempt from import duties</a>		<a href="#">Zero VAT on PV system components</a>

# Country Comparison Tables

/ Duties & Taxes



Country	Import Duties	VAT on import	VAT
Tanzania	<a href="#">Solar components are duty-free</a>		<a href="#">VAT exemption for solar components</a>
The Gambia	<a href="https://www.zhengbackpack.com/gambia-import-tax/">https://www.zhengbackpack.com/gambia-import-tax/</a>		<a href="#">Import VAT is charged at a rate of 15%</a>
Togo	<a href="#">Non-CIZO licensees faces 5-20% of import duty</a>		<a href="#">Solar products face a VAT rate of 18%</a>
Tunisia	<a href="#">Import duty rate of 30% on solar panels</a>		<a href="#">Standard VAT of 19%, with reduced rates of 13% and 7%</a>
Uganda	<a href="#">No import duty on solar equipment</a>	<a href="#">VAT free imports of specialized solar equipment</a>	<a href="#">Zero VAT rate on solar equipment</a>
Zambia	<a href="#">Import duty exemption for solar PV products</a>		<a href="#">Solar products are VAT-free</a>
Zimbabwe	<a href="#">Solar equipment is exempt from import duty</a>		<a href="#">A 15% VAT rate on solar equipment</a>

# Country Comparison Tables

/ Electrification Rate &  
Electricity Tariffs



Country	Electrification Rate	Electricity Tariffs									
		Residential			Commercial			Industrial			Source
Algeria	<a href="#">99%</a>	0.009	TO	0.062	0.009	TO	0.067	0.005	TO	0.051	<a href="#">Link</a>
Angola	<a href="#">46%</a>	0.004	TO	0.021	0.011	TO	0.021	0.011	TO	0.018	<a href="#">Link</a>
Benin	<a href="#">40%</a>	0.158	TO	0.266	0.164	TO	0.295	0.158	TO	0.270	<a href="#">Link</a>
Botswana	<a href="#">76.6%</a>	0.052	TO	0.109	0.086	TO	0.168	0.092	TO	0.092	<a href="#">Link</a>
Burkina Faso	<a href="#">34.2%</a>	0.135	TO	0.297	0.097	TO	0.288	0.126	TO	0.252	<a href="#">Link</a>
Burundi	<a href="#">12%</a>	0.028	TO	0.186	0.066	TO	0.136	0.066	TO	0.136	<a href="#">Link</a>
Cameroon	<a href="#">74%</a>	0.090	TO	0.178	0.151	TO	0.178	0.11	TO	0.128	<a href="#">Link</a>
Cape Verde	<a href="#">96%</a>	0.286	TO	0.403	0.252	TO	0.291	0.252	TO	0.291	<a href="#">Link</a>
Central African Republic (CAR)	<a href="#">15.7%</a>	0.104	TO	0.254	0.049	TO	0.068	0.049	TO	0.068	<a href="#">Link</a>
Chad	<a href="#">12%</a>	0.153	TO	0.225	0.255	TO	0.255	0.255	TO	0.255	<a href="#">Link</a>
Comoros	<a href="#">75%</a>	0.380	TO	0.380	0.270	TO	0.330	0.270	TO	0.330	<a href="#">Link</a>

# Country Comparison Tables

/ Electrification Rate &  
Electricity Tariffs



Country	Electrification Rate	Electricity Tariffs									
		Residential			Commercial			Industrial			Source
Democratic Republic of the Congo	<a href="#">21%</a>	0.039	TO	0.087	0.095	TO	0.098	0.044	TO	0.057	<a href="#">Link</a>
Djibouti	<a href="#">65%</a>	0.150	TO	0.310	0.235	TO	0.375	0.185	TO	0.230	<a href="#">Link</a>
Egypt	<a href="#">100%</a>	0.014	TO	0.048	0.018	TO	0.049	0.034	TO	0.037	<a href="#">Link</a>
Equatorial Guinea	<a href="#">66.9%</a>	0.099	TO	0.099	0.126	TO	0.153	0.108	TO	0.126	<a href="#">Link</a>
Eritrea	<a href="#">53%</a>	0.240	TO	0.240	0.240	TO	0.240	0.240	TO	0.240	<a href="#">Link</a>
Eswatini (formerly Swaziland)	<a href="#">88%</a>	0.089	TO	0.328	0.177	TO	0.177	0.177	TO	0.177	<a href="#">Link</a>
Ethiopia	<a href="#">55.4%</a>	0.005	TO	0.033	0.032	TO	0.032	0.016	TO	0.020	<a href="#">Link</a>
Gabon	<a href="#">93%</a>	0.094	TO	0.2028	0.129	TO	0.162	0.129	TO	0.162	<a href="#">Link</a>
Ghana	<a href="#">89%</a>	0.071	TO	0.212	0.113	TO	0.216	0.172	TO	0.452	<a href="#">Link</a>
Guinea	<a href="#">53%</a>	0.012	TO	0.05	0.129	TO	0.306	0.201	TO	0.281	<a href="#">Link</a>
Guinea-Bissau	<a href="#">33%</a>	0.230	TO	0.441	0.232	TO	0.29	0.184	TO	0.23	<a href="#">Link</a>

# Country Comparison Tables

/ Electrification Rate &  
Electricity Tariffs



Country	Electrification Rate	Electricity Tariffs									
		Residential			Commercial			Industrial			Source
Ivory Coast/Cote d'Ivoire	<a href="#">71%</a>	0.046	TO	0.222	0.109	TO	0.235	0.106	TO	0.154	<a href="#">Link</a>
Kenya	<a href="#">75%</a>	0.095	TO	0.145	0.052	TO	0.148	0.044	TO	0.105	<a href="#">Link</a>
Lesotho	<a href="#">53%</a>	0.056	TO	0.125	0.02	TO	0.022	0.02	TO	0.022	<a href="#">Link</a>
Liberia	<a href="#">32.7%</a>	0.150	TO	0.240	0.190	TO	0.220	0.190	TO	0.220	<a href="#">Link</a>
Libya	<a href="#">73.2%</a>	0.004	TO	0.006	0.008	TO	0.012	0.006	TO	0.008	<a href="#">Link</a>
Madagascar	<a href="#">36%</a>	0.151	TO	0.755	0.093	TO	0.376	0.070	TO	0.229	<a href="#">Link</a>
Malawi	<a href="#">25.9%</a>	0.037	TO	0.09	0.125	TO	0.147	0.05	TO	0.163	<a href="#">Link</a>
Mali	<a href="#">53%</a>	0.106	TO	0.275	0.139	TO	0.239	0.123	TO	0.239	<a href="#">Link</a>
Mauritania	<a href="#">55%</a>	0.061	TO	0.148	0.148	TO	0.148	0.054	TO	0.148	<a href="#">Link</a>
Mauritius	<a href="#">100%</a>	0.048	TO	0.193	0.065	TO	0.220	0.065	TO	0.119	<a href="#">Link</a>
Morocco	<a href="#">100%</a>	0.099	TO	0.247	0.056	TO	0.226	0.057	TO	0.272	<a href="#">Link</a>

# Country Comparison Tables

/ Electrification Rate &  
Electricity Tariffs



Country	Electrification Rate	Electricity Tariffs									
		Residential			Commercial			Industrial			Source
Mozambique	<a href="#">40%</a>	0.096	TO	0.143	0.076	TO	0.076	0.075	TO	0.075	<a href="#">Link</a>
Namibia	<a href="#">59.4%</a>	0.08	TO	0.189	0.168	TO	0.273	0.052	TO	0.431	<a href="#">Link</a>
Niger	<a href="#">20.1%</a>	0.107	TO	0.246	0.173	TO	0.246	0.101	TO	0.246	<a href="#">Link</a>
Nigeria	<a href="#">61.2%</a>	0.003	TO	0.145	0.031	TO	0.145	0.031	TO	0.145	<a href="#">Link</a>
Republic of the Congo	<a href="#">32%</a>	0.056	TO	0.088	0.052	TO	0.052	0.046	TO	0.046	<a href="#">Link</a>
Rwanda	<a href="#">84.6%</a>	0.061	TO	0.255	0.076	TO	0.259	0.067	TO	0.121	<a href="#">Link</a>
Sao Tome and Principe	<a href="#">84%</a>	0.078	TO	0.18	0.18	TO	0.33	0.161	TO	0.161	<a href="#">Link</a>
Senegal	<a href="#">84%</a>	0.164	TO	0.307	0.165	TO	0.447	0.129	TO	0.26	<a href="#">Link</a>
Seychelles	<a href="#">100%</a>	0.128	TO	0.333	0.297	TO	0.436	0.296	TO	0.36	<a href="#">Link</a>
Sierra Leone	<a href="#">36%</a>	0.105	TO	0.264	0.265	TO	0.276	0.248	TO	0.293	<a href="#">Link</a>
Somalia	<a href="#">49%</a>	0.450	TO	1.00	0.450	TO	1.00	0.450	TO	1.00	<a href="#">Link</a>

# Country Comparison Tables

/ Electrification Rate &  
Electricity Tariffs



Country	Electrification Rate	Electricity Tariffs									
		Residential			Commercial			Industrial			Source
Somaliland	<a href="#">50.3%</a>	0.200	TO	0.500	0.200	TO	0.500	0.200	TO	0.500	<a href="#">Link</a>
South Africa	<a href="#">94.7%</a>	0.075	TO	0.498	0.063	TO	0.419	0.054	TO	0.388	<a href="#">Link</a>
South Sudan	<a href="#">15%</a>	0.271	TO	0.285	0.320	TO	0.320	0.348	TO	0.348	<a href="#">Link</a>
Sudan	<a href="#">66%</a>	0.068	TO	0.128	0.077	TO	0.153	0.085	TO	0.085	<a href="#">Link</a>
Tanzania	<a href="#">48.3%</a>	0.08	TO	0.10	0.08	TO	0.10	0.06	TO	0.08	<a href="#">Link</a>
The Gambia	<a href="#">75%</a>	0.18	TO	0.188	0.194	TO	0.194	0.207	TO	0.207	<a href="#">Link</a>
Togo	<a href="#">70%</a>	0.108	TO	0.261	0.133	TO	0.257	0.09	TO	0.22	<a href="#">Link</a>
Tunisia	<a href="#">100%</a>	0.026	TO	0.119	0.055	TO	0.157	0.061	TO	0.1334	<a href="#">Link</a>
Uganda	<a href="#">57%</a>	0.07	TO	0.212	0.078	TO	0.182	0.052	TO	0.12	<a href="#">Link</a>
Zambia	<a href="#">54%</a>	0.032	TO	0.176	0.028	TO	0.117	0.028	TO	0.073	<a href="#">Link</a>
Zimbabwe	<a href="#">62%</a>	0.05	TO	0.25	0.06	TO	0.23	0.06	TO	0.23	<a href="#">Link</a>

# Country Vignettes Explained



## OBJECTIVES

This section contains information on the objectives of a country to include renewable energy in its energy mix. Targets are set for the next 5 years, 10 years or maybe more. These objectives are only the targets officially announced by the country and do not constitute a guarantee of future solar development. It may be interesting to compare these various announcements with actual solar that has been developed a few years later.



## POLICY / REGULATION

Lists all applicable rules in terms of duties, taxes, exemptions, net-metering, wheeling, feed-in tariffs or any special government program that supports or restricts the deployment of solar or renewables in general in a country.



## ELECTRIFICATION RATE

This shows the percentage of people in each country that has access to the grid and/or electricity. It also highlights electrification rate objectives in the near future. Please keep in mind that different countries count “electrification” differently. In some countries it means “connected to the grid”, in some other it means “has access to lighting, even through SHS”.

# Country Vignettes Explained



## TOTAL PV INSTALLED

Displays figures of the currently installed capacity as identified by AFSIA for each solar segment. We only display figures of projects that have been verified by AFSIA and are recorded as such in AFSIA projects database.



## CURRENT TARIFF GRID ELECTRICITY

Represents the tariff charged to different types of consumers classified by residential, commercial, and industrial depending on their electricity consumption. This tariff provides the range between the minimum and the maximum \$/kWh charged per category in this country. The prices shown are exclusive of VAT.



## NOTEWORTHY DEVELOPMENTS

Identifies bigger projects/programs that are either under development, construction, tendering or any other phase of development and which are expected to significantly contribute to the solar opportunity in a given country.

## Key Institutions

This section gives you direct links to the nation's key electricity institutions including the Ministry, the regulator, the national utility company and the rural electrification agency if any.

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# Algeria



## Objectives

- Add 22 GW of renewable energy capacity by 2030 [link](#)
- Install 13.5 GW of solar PV and 2 GW of CSP by 2030 [link](#)
- Reach 30% RE share in the energy mix, equating to 15 GW by 2035 [link](#)



## Policy / Regulation

- Reduced customs duty rate of 5% on the products for the manufacture of solar panels [link](#)
- The standard VAT is 19%, reduced to 9% [link](#)
- FiT applies to solar plants of 1 MW and above [link](#)
- No net metering policy in place [link](#)



## Electrification Rate

- 99% of the population has access to electricity [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.009	\$ 0.009	\$ 0.005
MAX	\$ 0.062	\$ 0.067	\$ 0.051



## Noteworthy Developments

- Sonelgaz re-launched the tender for three PV projects totaling 520 MW [link](#)
- 200 MW under construction at Gara Djebilet mining site [link](#)
- Sonatrach and VNG AG to co-develop 50 MW green hydrogen plant [link](#)
- The country is set to commission 400 MW solar under its 3,200 renewable energy flagship program [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	Rural Electrification Agency



# Angola



## Objectives

- Boost renewable energy production to 73% of installed capacity (including hydropower) by 2027 and 94% of installed capacity by 2050 [link](#)
- Grow the electricity sector's installed capacity to 10 GW by 2027 and 33 GW by 2050 [link](#)



## Policy / Regulation

- Import duty rate ranges from 2 to 50% [link](#)
- The standard VAT rate applies at 14% [link](#)
- Net metering and FiT policies apply to projects with a capacity of 10 MW or more [link](#)



## Electrification Rate

- 46% of the population has access to electricity [link](#)
- 44% in urban and less than 10% in rural areas [link](#)



## Total PV Installed

• Utility-scale	<div></div>	394.05 MWp
• C&I	<div></div>	2.11 MWp
• MG	<div></div>	25.03 MWp
• SHS	<div></div>	0 MWp
• Residential	<div></div>	22.64 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.004	\$ 0.011	\$ 0.011
MAX	\$ 0.021	\$ 0.021	\$ 0.018



## Noteworthy Developments

- EXIM Bank financing two 600 MW projects [link](#)
- AMEA Power developing a 150 MW solar project [link](#)
- Construction started on the 35 MWp Quilemba solar by TotalEnergies, Sonangol and Greentech [link](#)
- Masdar developing the 150 MW Quipungo solar power project [link](#)
- MCA developing 256 MW of solar in the Eastern province [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Benin



## Objectives

- Reach 150 MW of solar power generation by 2026 [link](#)
- Make renewable energy the main power source by 2030 [link](#)
- Attain 30% of renewable energy share in the electricity mix by 2030 [link](#)



## Policy / Regulation

- Duties for off-grid solar products range from 5–20% [link](#)
- 21% of VAT applies to off-grid solar products [link](#)
- VAT exemptions on solar equipment import [link](#)
- Net metering is prohibited [link](#) , FiT is not in place [link](#)



## Electrification Rate

- Total electrification rate stands at 40% [link](#)
- Targets 100% of electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	27.25 MWp
• C&I	<div></div>	8.43 MWp
• MG	<div></div>	3.81 MWp
• SHS	<div></div>	8.90 MWp
• Residential	<div></div>	61.05 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.158	\$ 0.164	\$ 0.158
MAX	\$ 0.266	\$ 0.295	\$ 0.270



## Noteworthy Developments

- Axian launched 4 solar projects totaling 50 MWac [link](#)
- EXIM Bank supporting the installation of 750 rooftop solar systems [link](#)
- Govt developing a 300 MW solar plant and 100 MW rooftop solar at the GDIZ [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Botswana



## Objectives

- Boost RE to 50% of its mix by 2030 [link](#)
- Install 200 MW of CSP by 2026 [link](#)
- Add 8 GW of solar power by 2030 [link](#)



## Policy / Regulation

- Customs duty relief for imported solar technologies [link](#)
- Zero-rated VAT on solar equipment [link](#)
- Feed-in Tariff is not yet in effect [link](#) , Net metering exists [link](#)
- Permit required for C&I systems between 100 KW and 1 MW [link](#)



## Electrification Rate

- 76.6% of the population is electrified [link](#)
- Universal electricity access targeted by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	150.10 MWp
• C&I	<div></div>	20.53 MWp
• MG	<div></div>	0.01 MWp
• SHS	<div></div>	0.03 MWp
• Residential	<div></div>	21.14 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.052	\$ 0.086	\$ 0.092
MAX	\$ 0.109	\$ 0.168	\$ 0.092



## Noteworthy Developments

- AAAS Energy developing 250 MW+400 MWh data center campus [link](#)
- A 1.5 GW solar tender has been announced by the Government [link](#)
- Solarcentury developing a 100 MW Lotsane Solar [link](#)
- Government signed deal to develop a 500 MW solar PV project [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Burkina Faso



## Objectives

- Achieve a 50% share of renewable energy in the national energy mix by 2030 [link](#)
- National solar target of approximately 1,000 MW of capacity by 2030 [link](#)



## Policy / Regulation

- Solar equipment is import duty-free [link](#)
- No VAT for solar equipment [link](#)
- No FiT provision in place [link](#)
- No formal net metering mechanism currently exists [link](#)



## Electrification Rate

- National access to electricity stands at 34.2% [link](#)
- Plans to achieve 90% of electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		230.70 MWp
• C&I		19.87 MWp
• MG		1.15 MWp
• SHS		5.35 MWp
• Residential		54.18 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.135	\$ 0.097	\$ 0.126
MAX	\$ 0.297	\$ 0.288	\$ 0.252



## Noteworthy Developments

- Gutami developing 150 MWp solar + 40 MWh BESS [link](#)
- Tenders have been reopened for the 75 MWp/75 MWh Konéan project and the 45 MWp/45 MWh Kouritenga project [link](#)
- Agreement signed for the construction of the 50 MWp Komsilga Solar [link](#)
- SEFA backing the development of 18 MW Dedougou Solar plant [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Burundi



## Objectives

- No national renewable energy targets were identified



## Policy / Regulation

- Solar equipment is duty free, SHS components are taxed at 10%-35% [link](#)
- Solar equipment is VAT-free and SHS components are taxed at 18% [link](#)
- Authorization required for generation systems >500 kW [link](#)
- No net metering [link](#) and no FiT policies in place [link](#)



## Electrification Rate

- 12% of the population is electrified [link](#)
- Targets universal electricity access by 2030 [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.028	\$ 0.066	\$ 0.066
MAX	\$ 0.186	\$ 0.136	\$ 0.136



## Noteworthy Developments

- Government committed to expand the 7.5 MW Mubuga solar [link](#)
- 65,000 homes to benefit from the Soleil-Nyakiriza off-grid project [link](#)
- SOLAR23 to power 316 health centers via Soleil-Nyakiriza Project [link](#)
- Multiplex Partners to electrify 45 health centers and 256 schools under Soleil-Nyakiriza

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Cameroon



## Objectives

- Achieve 25% of renewable energy, excluding large hydro by 2035 [link](#)
- Solar in the energy mix to reach 250 MW by 2030 [link](#)
- Increase installed generation capacity to 3 GW, with 10% sourced from RE by 2030 [link](#)
- Connect an additional 8 million people to the grid by 2030 [link](#)



## Policy / Regulation

- No custom duty on solar products [link](#)
- No VAT on solar equipment [link](#)
- IPPs requires licenses to generate electricity [link](#)
- Net metering and FiT policies in place [link](#)



## Electrification Rate

- Total electrification rate stands at 74% [link](#)
- 94% in urban and 25% in rural areas [link](#)
- Seeks to achieve 100% electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	37.37 MWp
• C&I	<div></div>	2.98 MWp
• MG	<div></div>	14.33 MWp
• SHS	<div></div>	15.50 MWp
• Residential	<div></div>	122.48 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.090	\$ 0.151	\$ 0.110
MAX	\$ 0.178	\$ 0.178	\$ 0.128



## Noteworthy Developments

- Work started to expand Maroua and Guider solar plants to 64.4 MWp [link](#)
- The Govt. plans to deliver 6 solar mini-plants totaling 7.2 MWp [link](#)
- 35 MW Dang solar Plant under development by Afreenergy [link](#)
- Government launched the construction on 87 new mini-grids, advancing its goal to commission 1,000 rural solar plants [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>

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# Cape Verde



## Objectives

- Raise the share of renewable energy in the energy mix to 30% by 2026, 50% by 2030 and over 80% by 2040 [link](#)
- Reach 100% of RE penetration by 2050 [link](#)
- Achieve over 160 MW of new solar projects by 2030 [link](#)



## Policy / Regulation

- No import duties on equipment used to produce renewable energy [link](#)
- Solar equipment import is VAT free [link](#)
- A 15.5% VAT rate is applied on solar water heaters [link](#)
- Net metering available [link](#) , FiT in place [link](#)



## Electrification Rate

- 96% of the population is electrified [link](#)
- Aims for universal electricity coverage by 2026 [link](#)



## Total PV Installed

• Utility-scale		39.82 MWp
• C&I		0.78 MWp
• MG		0.29 MWp
• SHS		0 MWp
• Residential		3.74 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.286	\$ 0.252	\$ 0.252
MAX	\$ 0.403	\$ 0.291	\$ 0.291



## Noteworthy Developments

- Palmarejo solar plant to be expanded to 10 MW [link](#)
- Tender launched for 10 MW solar in Cidade da Praia [link](#)
- WinPower developing 26 MWh BESS across 3 islands [link](#)
- Africa Investment Contracting developing a 15 MW solar plant [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Central African Republic



## Objectives

- Provide reliable electricity services to 1 million people by 2027 [link](#)
- Expand renewable energy to promote a sustainable, climate-resilient green economy by 2028 [link](#)



## Policy / Regulation

- Customs duty ranges from 5% to 20% [link](#)
- The standard VAT rate is 19% [link](#)
- A withholding tax rate of 15% [link](#)
- No net metering and FiT available [link](#)



## Electrification Rate

- National electrification rate stands at 15.7% [link](#)
- Aims to increase the electricity access to 50% by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	40.00 MWp
• C&I	<div></div>	2.53 MWp
• MG	<div></div>	1.08 MWp
• SHS	<div></div>	0 MWp
• Residential	<div></div>	7.67 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.104	\$ 0.049	\$ 0.049
MAX	\$ 0.258	\$ 0.068	\$ 0.068



## Noteworthy Developments

- Government launched a 60 MW solar plant to boost electricity supply [link](#)
- World Bank supporting installation of 5 MGs totaling 10 MW [link](#)
- World Bank financing 15 MWp expansion for Danzi Solar Farm [link](#)
- Global South Utilities began 50 MW/10 MWh solar plant construction [link](#)
- Aptech Africa and MDERH to electrify 240 health centers, 240 schools, 80 administrative buildings and 10,200 solar streetlights

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> Regulator	<div></div> Rural Electrification Agency



# Chad



## Objectives

- Achieve 30% of renewable energy in the mix by 2030 [link](#)
- Deliver 886 MW of total new installed power capacity by 2030 [link](#)
- Solar energy planned to contribute 520 MW of the overall capacity [link](#)



## Policy / Regulation

- Import duties are waived for solar energy products [link](#)
- Equipment for RE projects is VAT exempt [link](#)
- Imported RE equipment are exempt from VAT [link](#)
- No established net metering policy [link](#), no FiT [link](#)



## Electrification Rate

- 12% of the population has access to electricity [link](#)
- Targeting 90% of electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		63.00 MWp
• C&I		1.19 MWp
• MG		11.31 MWp
• SHS		0.15 MWp
• Residential		34.71 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.153	\$ 0.225	\$ 0.225
MAX	\$ 0.225	\$ 0.225	\$ 0.225



## Noteworthy Developments

- Axian Energy to develop 100 MW + 50 MWh project in N'Djamena [link](#)
- 60 MW Gaoui solar plant under development by AMEA Power [link](#)
- Elsewedy electric building the 36 MW D'jermaya solar [link](#)
- 120 MW is under development by Convalt Energy in N'Djamena [link](#)
- 36 MW + 20 MWh project under construction by Release by Scatec in Klessoum [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Comoros



## Objectives

- Reach 45% of RE in the energy mix by 2030 [link](#)
- Raise the RE share in the energy mix to 33 MW by 2030 [link](#)
- Achieve 55% renewable electricity generation by 2033 [link](#)



## Policy / Regulation

- Renewable energy equipment is exempt from both import duties and VAT [link](#)
- No Feed-in Tariff (FIT) legislation in place [link](#)
- No formal net metering policy [link](#)



## Electrification Rate

- 75% of the population is electrified [link](#)
- Plans to achieve universal electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		12.56 MWp
• C&I		0.21 MWp
• MG		0.18 MWp
• SHS		0.03 MWp
• Residential		6.40 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.423	\$ 0.309	\$ 0.309
MAX	\$ 0.423	\$ 0.377	\$ 0.377



## Noteworthy Developments

- 5 MW Mitsamiouli solar under development by Innovent Group [link](#)
- Government plans to build 1 MW of solar in Mwali [link](#)
- World Bank supporting 3 solar PV plants of 9 MW Solar + 19 MWh BESS [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Democratic Republic Of Congo



## Objectives

- Mobilize USD 20 billion in private investment by 2030 for power production, transport, distribution and renewable energies [link](#)
- Raise the renewable energy capacity to 42.7 MW through solar, wind and hydroelectric energy by 2030 [link](#)



## Policy / Regulation

- Import duty is waived on solar equipment [link](#)
- No VAT on imports of solar equipment [link](#)
- 16% VAT applies to off-grid solar products [link](#)
- No net metering policy in place [link](#)
- Feed-In Tariff currently unavailable [link](#)



## Electrification Rate

- 21% of the population has access to electricity [link](#)
- Aims to reach 62% of electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		0 MWp
• C&I		29.34 MWp
• MG		12.84 MWp
• SHS		9.42 MWp
• Residential		168.48 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.039	\$ 0.095	\$ 0.044
MAX	\$ 0.087	\$ 0.098	\$ 0.057



## Noteworthy Developments

- 233 MWp + 526 MWh Kamoa Copper plant under construction by CBE [link](#)
- Soleos Energy is building a 200 MW solar plant [link](#)
- AFC and SkyPower to develop 200 MW (Phase 1 of 1 GW) [link](#)
- 100 MW solar plant under development by Gigawatt Global [link](#)
- Sun Africa launched a 4000 MW renewable energy project [link](#)
- Green World to add 200 MWp + 581 MWh storage at Kamoa Copper [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



**Gracia Munganga**

Project Development Director, CrossBoundary Energy



## Solar Power is reshaping mining investment and operations in the DRC

Copper is at the center of the global energy transition. As the world shifts to electric transportation, expands power grids, and builds more digital infrastructure, the need for copper surges, and the mining sector is expanding with it. As the sector grows, so does the need for reliable, affordable, and increasingly clean energy. But this has historically been a challenge in regions like DRC, which form a vital part of the copper supply chain. In 2024, DRC produced an impressive 3.3 million tonnes of copper, about 11% of the world's total output.

To expand its mining footprint and increase investment, the DRC requires stable electricity supply. The electricity deficit in the DRC is estimated at around 2.7 GW. Power outages, unreliable grids, and dependence on drought-prone hydropower put mines in the region at risk of power outages. When supply falters, these mines often turn to expensive diesel or heavy-fuel-oil generators to continue production. This reliance not only increases costs but also leaves operations exposed to volatile fuel prices and fragile supply chains.

The good news is that solar PV and Battery Energy Storage Systems (BESS) are changing the game. Solar power is now one of the cheapest energy sources available. In Sub-Saharan Africa, solar module prices dropped from US\$0.27 to US\$0.09 per watt between 2022 and 2024. Battery storage technology has also seen dramatic price drops—down 97% since 1991, and 40% just between 2023 and 2024.

These decreases in costs, accompanied by increasingly sophisticated technology, have unlocked a game-changing advancement that can address one of mining companies' largest hesitations toward renewables like solar power: intermittency.

A current example of this transformation is the establishment of a large-scale solar PV/BESS facility at the Kamoa-Kakula Mining Complex, a project that is redefining what's possible with renewable energy in mining. The Kamoa-Kakula Mining Complex is Africa's largest copper mine. In late 2025, the mine received about 110 MW additional A current example of this transformation is the establishment of a large-scale solar PV/BESS facility at the Kamoa-Kakula Mining Complex, a project that is redefining what's possible with renewable energy in mining. The Kamoa-Kakula Mining Complex is Africa's largest copper mine. In late 2025, the mine received about 110 MW additional electrical capacity, mainly from a rehabilitated hydropower facility. But with plans to ramp up production, its power needs are projected to soar to approximately 347 MW by the end of 2028.

The Kamoa-Kakula Solar/BESS Baseload Project is set to deliver a reliable, 30 MW baseload solution for the mine—24/7, dispatchable, and generated by the sun.

The project, currently under construction, will use a 233 MWp solar photovoltaic (PV) plant, oversized to charge a massive 526 MWh battery storage facility. The result is constant, dispatchable baseload power, available around the clock without relying on the grid or fossil fuels.

The mining company will buy this power directly from CrossBoundary Energy as it would from a traditional utility, but with the benefit of on-site, green electricity. This model is cost-effective and shields the mine from global energy price volatility and supply chain vulnerabilities.

There's also a big environmental upside. By switching to this solar and battery solution, the mining complex expects to cut its carbon footprint by roughly 78,750 tonnes per year, cementing its status as one of Africa's lowest-carbon copper producers.

New solar innovations, like those deployed through Kamoa-Kakula Solar/BESS Baseload Project, are proof that renewable baseload power isn't just a vision for the future—it is happening now. Falling renewables costs, the solar resources in Africa, and advances in battery technology mean that mines can finally break free from unreliable grids and expensive diesel.

For investors, this shift is crucial. Mines with stable, affordable, and green energy are more likely to attract sustained investment, deliver reliable returns, and comply with increasing global environmental standards.

As global copper demand accelerates, the DRC's ability to secure clean, affordable, and reliable power will define its future. The Kamoa-Kakula Solar/BESS Baseload Project shows that with the right technology and investment, renewable energy like solar PV can deliver the stability, cost savings, and sustainability that modern mining demands.



# Republic Of The Congo



## Objectives

- Renewable energy share to exceed 60% of installed capacity by 2035 [link](#)
- Achieve 2,697 MW of renewable energy capacity by 2030 [link](#)
- Increase the generation capacity to 1.5 GW by 2030 with a strong focus on renewable sources [link](#)



## Policy / Regulation

- The SNE 2025 commits to fully exempting customs duties and VAT on imported RE equipment [link](#)
- The standard VAT is 18.9% [link](#)
- No net metering, no FiT available [link](#)
- WHT general rate stands at 20% [link](#)



## Electrification Rate

- 32% of the population is electrified [link](#)
- 39% in urban and 1% in rural areas [link](#)
- Aiming for an electrification rate of 81% by 2030 [link](#)



## Total PV Installed

• Utility-scale	0 MWp
• C&I	0.33 MWp
• MG	3.40 MWp
• SHS	0.85 MWp
• Residential	4.69 MWp



Source [AFSIA](#) [GOGLA](#) [EMBER](#)

## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.056	\$ 0.052	\$ 0.046
MAX	\$ 0.088	\$ 0.052	\$ 0.046



## Noteworthy Developments

- 65 MW Ignie solar plant under development by Tinda energy [link](#)
- AMEA Power is developing a 50 MW solar project [link](#)
- Govt in partnership with Bboxx, plans to provide SHSs to 10,000 homes [link](#)
- 257 mini-grids are being developed under the PEZor Rural Electrification Program with UNDP support [link](#)

## Key Electricity Institutions

 <a href="#">Ministry</a>	 <a href="#">Utility Company</a>
 <a href="#">Regulator</a>	 Rural Electrification Agency



# Djibouti



## Objectives

- Achieve 100% of renewable energy in the electricity mix by 2035 [link](#)
- Reduce national carbon emissions by 40% by 2030 [link](#)
- Increase the energy generation and distribution of cleaner, more affordable energy by 2027 [link](#)



## Policy / Regulation

- Renewable energy equipment is import duty-free [link](#)
- The standard VAT rate on goods and services is 10% [link](#)
- The standard rate of the WHT is 15% [link](#)
- No net metering, no FiT [link](#)



## Electrification Rate

- Total electrification rate stands at 65% [link](#)
- Seeks to achieve universal access to electricity by 2030 [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.150	\$ 0.235	\$ 0.185
MAX	\$ 0.310	\$ 0.375	\$ 0.230



## Noteworthy Developments

- AMEA Power constructing 25 MW Grand Bara solar project [link](#)
- Deal signed with Egypt to develop a 276.5 MW solar project [link](#)
- Elsewedy to develop a 23 MW solar+storage plant in Doraleh port [link](#)
- EIB supporting construction of 12 MW Doraleh desalination plant [link](#)
- Qatar Charity building a solar-powered desalination plant in Dalaf to supply safe water to 5,000 residents [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Egypt



## Objectives

- Increase renewable share to 42% by 2030 and 60% by 2040 [link](#)
- Expand renewable energy capacity to 21 GW by 2030 [link](#)
- Reach 31.6 GW of renewable capacity by 2035 [link](#)
- Boost Solar's share in the electricity mix to over 26% by 2030, with 21.3% from PV and 5.52% from CSP [link](#)



## Policy / Regulation

- 2% customs duty on equipment used for RE production [link](#)
- A 5% VAT applies to solar plant equipment [link](#)
- Functional net metering scheme [link](#)
- FiT available for 20-50 MW solar projects [link](#)
- Wheeling regulation in place [link](#)



## Electrification Rate

- The population has full electricity access [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.014	\$ 0.018	\$ 0.034
MAX	\$ 0.048	\$ 0.049	\$ 0.037



## Noteworthy Developments

- Scatec constructing 1 GW solar + 200 MWh BESS Obelisk project [link](#)
- Scatec to build 1.1 GW and 200 MWh BESS solar plant for Egyptalum [link](#)
- Masdar developing 1.2 GW solar plants with 720 MWh storage [link](#)
- 3.1 GW green hydrogen project under development in South Sinai [link](#)
- Construction of Abydos II (1 GW solar + 600 MWh storage) underway [link](#)
- ACO and IRSC signed deal to develop 75 MW of solar PV projects [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	Rural Electrification Agency



# Equatorial Guinea



## Objectives

- Reach 30% of renewable energy in the energy mix by 2030 [link](#)



## Policy / Regulation

- Standard customs duty ranges from 5% to 30% [link](#)
- Prevailing VAT rate is 15%, with a reduced rate of 5% [link](#)
- Net metering policy still under development [link](#)
- No Feed-In Tariff Policy [link](#)



## Electrification Rate

- 66.9% of the population has access to electricity [link](#)
- Target to raise the electricity access to 80% by 2030 [link](#)



## Total PV Installed

• Utility-scale		0 MWp
• C&I		0 MWp
• MG		5.14 MWp
• SHS		0.07 MWp
• Residential		1.32 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.099	\$ 0.126	\$ 0.108
MAX	\$ 0.099	\$ 0.153	\$ 0.126



## Noteworthy Developments

- Atlas Renewable Energy is developing a 50 MW solar Power plant [link](#)
- The government is developing 20 MW solar via the Green electrification project [link](#)

## Key Electricity Institutions

Ministry	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Eritrea



## Objectives

- Renewable energy to contribute 20% of electricity by 2030 [link](#)
- Deploy 50 MW of on-grid solar PV by 2030 [link](#)
- Introduce 15 MW of hybrid mini-grid capacity by 2030 [link](#)



## Policy / Regulation

- Solar panels and renewable energy equipment are duty-free [link](#)
- 5-12% sales tax applies on goods and services [link](#)
- No net metering scheme [link](#) , no FiT in place [link](#)



## Electrification Rate

- The national electrification access rate stands at 53% [link](#)
- Coverage is at 76% in urban and 10% in rural areas [link](#)



## Total PV Installed



Source

[AFSIA](#)

[GOGLA](#)

[EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.016	\$ 0.016	\$ 0.016
MAX	\$ 0.016	\$ 0.016	\$ 0.016



## Noteworthy Developments

- China Energy Group building the 25 MW+30 MWh Dekemhare solar [link](#)
- AfDB funding the rollout of mini-grids projects totaling 12 MW [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Eswatini



## Objectives

- Achieve 50% of renewable energy in the power mix by 2030 [link](#)
- Reach a total centralized power capacity of 681 MW including 250 MW of solar PV and 165 MW of wind by 2034 [link](#)
- Install 61 MW decentralized capacity by 2034 [link](#)



## Policy / Regulation

- Solar panels are subject to a 0% import duty [link](#)
- VAT is 15% on most goods and services [link](#)
- Net metering operates as net-billing under the SSEG framework [link](#)
- Feed-in Tariff is currently under consultation [link](#)



## Electrification Rate

- Total electrification rate stands at 88% [link](#)
- Plans to reach universal electricity access by 2030 [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.089	\$ 0.177	\$ 0.177
MAX	\$ 0.328	\$ 0.177	\$ 0.177



## Noteworthy Developments

- ESERA-led solar IPP to deliver 75 MW solar PV supply program [link](#)
- Frazium Energy building the 100 MW Edwaleni solar plant [link](#)
- ASCENT Eswatini to electrify 50,000 households with on and off-grid systems [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Ethiopia



## Objectives

- Add 6.4 GW of generation capacity by 2027 [link](#)
- Expand renewable energy capacity to 13 GW by 2028 [link](#)
- Achieve 100% electricity access from renewable energy sources by 2030 [link](#)
- Increase its installed electricity generation capacity to 19 GW by 2030 [link](#)
- Reach 25% non-hydro renewable energy generation by 2030 [link](#)



## Policy / Regulation

- Off-grid solar products are Import duty free [link](#)
- VAT exemption on off-grid solar products [link](#)
- No Net metering [link](#) , no FiT in place [link](#)



## Electrification Rate

- 55.4% of the population is electrified [link](#)
- Targets 96.2% urban and 72.3% rural access by 2030 [link](#)



## Total PV Installed

• Utility-scale		0 MWp
• C&I		2.52 MWp
• MG		10.94 MWp
• SHS		26.59 MWp
• Residential		26.98 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.005	\$ 0.032	\$ 0.016
MAX	\$ 0.033	\$ 0.032	\$ 0.020



## Noteworthy Developments

- ISA and NTPC to develop 400 MW solar plant [link](#)
- Tender launched for 2 solar PV plants totaling 225 MW [link](#)
- HFSE initiative to solarize 300 remote clinics [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	Rural Electrification Agency



# Gabon



## Objectives

- Increase the renewable energy share in its electricity mix up to 80% by 2030 [link](#)



## Policy / Regulation

- Import duty exemptions for solar equipment [link](#)
- 5% VAT on RE generation equipment [link](#)
- No FiT policy in place [link](#) , net metering available [link](#)
- Solar projects requires necessary licenses from ARSE [link](#)



## Electrification Rate

- 93% of the population has access to electricity [link](#)
- Targets for universal access to electricity by 2035 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	11.00 MWp
• C&I	<div></div>	0.19 MWp
• MG	<div></div>	0.40 MWp
• SHS	<div></div>	0.03 MWp
• Residential	<div></div>	4.28 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.094	\$ 0.129	\$ 0.129
MAX	\$ 0.228	\$ 0.162	\$ 0.162



## Noteworthy Developments

- The government is advancing a 50 MW solar project in Mounana [link](#)
- AMEA is developing a 50 MW solar power station in Oyem [link](#)
- Solen SA is building 109 MW solar in Ayémé [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Ghana



## Objectives

- Boost the renewable energy generation to 10% by 2030 [link](#)
- Install 120 MW distributed renewable energy by 2030 [link](#)
- Increase the solar PV capacity to 850 MW by 2030 [link](#)
- Reach 50% of renewable energy generation by 2060 [link](#)



## Policy / Regulation

- Import tax exemption for solar and RE equipment [link](#)
- Solar equipment is VAT exempt [link](#)
- Net metering and FiT policies are available [link](#)
- Licenses are needed to develop RE projects for private use [link](#)



## Electrification Rate

- The national electrification access rate stands at 89% [link](#)
- Target of reaching 99% of electrification rate by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	112.00 MWp
• C&I	<div></div>	67.69 MWp
• MG	<div></div>	2.55 MWp
• SHS	<div></div>	2.38 MWp
• Residential	<div></div>	134.63 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.071	\$ 0.113	\$ 0.172
MAX	\$ 0.212	\$ 0.216	\$ 0.452



## Noteworthy Developments

- First Sky Group is planning a 200 MW solar plant [link](#)
- Govt to construct 35 MGs and provide 1,450 SHS [link](#)
- BPA to expand Bui reservoir floating solar to 65 MW [link](#)
- NCEP to deploy 4,000 rooftop solar systems totaling 137 MW [link](#)
- SFI has started Phase I construction of the 200 MWp Norbert Anku Solar Park [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# GETIS 2026

## GHANA ENERGY TRANSITION & INVESTMENT SUMMIT

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# Guinea



## Objectives

- Achieve a 30% renewable energy share in the energy mix by 2030 [link](#)
- Raise the renewable energy share to 70% with the installation of 1,086 MW solar and 791 MW hydro energy by 2030 [link](#)



## Policy / Regulation

- Import of solar panels is taxed at a 5% rate [link](#)
- Equipment for production of RE is VAT exempt [link](#)
- No net metering and FiT available [link](#)



## Electrification Rate

- 53% of the population is electrified [link](#)
- Aiming for universal electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		0 MWp
• C&I		34.30 MWp
• MG		0.32 MWp
• SHS		1.20 MWp
• Residential		42.30 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.012	\$ 0.129	\$ 0.201
MAX	\$ 0.050	\$ 0.306	\$ 0.281



## Noteworthy Developments

- ISA and NTPC planning a solar project of 800 MW [link](#)
- CleanPower generation developing 2\*42 MW solar plants [link](#)
- The government approved the construction of the 40 MW Khoumagueli solar plant [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Guinea Bissau



## Objectives

- Scale up renewable energy to 75% of the generation mix by 2030 [link](#)
- Reach 50% renewables in the national grid and 80% in isolated systems by 2030 [link](#)
- Raise the installed renewable energy capacity to 90 MW by 2030 [link](#)



## Policy / Regulation

- Exempted import duty on RE equipment [link](#)
- The standard VAT is 19% , with a reduced rate of 10% [link](#)
- No net metering and FiT in place [link](#)



## Electrification Rate

- 33% of the population is electrified [link](#)
- Aims to raise the electricity access to 80% by 2030 [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.230	\$ 0.232	\$ 0.184
MAX	\$ 0.441	\$ 0.290	\$ 0.230



## Noteworthy Developments

- Plans are in place for several solar PV power projects, including a 20 MW plant in Bissau (Cumere) and 10 MW in Bafata projects [link](#)
- AIC Green Energy to develop a 10 MW solar plant [link](#)
- The government is developing mini-grids on the islands to supply electricity to 1,200 households [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Ivory Coast/Cote D'ivoire



## Objectives

- Reach 45% renewable energy in the energy mix by 2030 [link](#)
- Add 2,570 MW of new capacity under the 2026-2030 Emergency Energy Plan, including 925 MW from solar [link](#)
- Generate approximately 1,686 MW from solar power and other renewable energy by 2040 [link](#)



## Policy / Regulation

- Renewable energy equipment is exempt from import duties [link](#)
- Equipment for production of solar energy is VAT exempt [link](#)
- Feed-In Tariff Scheme not available [link](#)
- Net metering policy is in place [link](#)



## Electrification Rate

- 71% of the population has access to electricity [link](#)
- Aims to achieve universal access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	37.50 MWp
• C&I	<div></div>	21.55 MWp
• MG	<div></div>	0.39 MWp
• SHS	<div></div>	4.84 MWp
• Residential	<div></div>	97.19 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.046	\$ 0.109	\$ 0.106
MAX	\$ 0.222	\$ 0.235	\$ 0.154

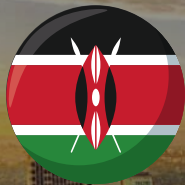


## Noteworthy Developments

- Tender launched for two 100 MW solar + 33 MWh hybrid plants [link](#)
- Tongon Solaire to build 52 MWp solar plant in M'Bengué [link](#)
- AMEA Power begun construction on the 50 MW Bondoukou project [link](#)
- 20 MW Laboa Solar Plant under development by Infinity Power [link](#)
- Gauff Engineering backing 400 mini-grids development nationwide [link](#)
- Construction begun on 50 MW Kong Solar Plant [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Kenya



## Objectives

- Achieve 100% of renewable electricity by 2030 [link](#)
- Attain an installed capacity of 15,000 MW by 2030 [link](#)
- Increasing renewable power generation to 5,952MW by 2030 [link](#)
- Reach 807 MW of solar capacity by 2030 [link](#)
- Expand the energy capacity to 100 GW by 2040 [link](#)



## Policy / Regulation

- Solar products are exempt from import duty [link](#)
- 16% VAT is levied on solar products [link](#)
- Net Metering has been gazetted, but not yet implemented [link](#)
- FiT applies to RE projects, except solar and wind projects [link](#)



## Electrification Rate

- 75% of the population is electrified [link](#)
- Targeting universal electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	220.60 MWp
• C&I	<div></div>	283.36 MWp
• MG	<div></div>	44.66 MWp
• SHS	<div></div>	70.58 MWp
• Residential	<div></div>	346.12 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.095	\$ 0.052	\$ 0.044
MAX	\$ 0.145	\$ 0.148	\$ 0.105



## Noteworthy Developments

- The government launched a tender for two 40 MW solar projects [link](#)
- AFD backing the 42.5 MW Seven Forks Solar Hybrid Project [link](#)
- 195 MW Kaptagat Solar under development by Tarita Green Energy [link](#)
- 8 MW solar project in development in Lodwar [link](#)
- KOSAP deploying 113 solar mini-grids and 343 stand-alone systems for public facilities [link](#)
- 

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Lesotho



## Objectives

- Increase the share of renewable energy in fuel mix to 100% by 2030 [link](#)
- Install 224 MW solar capacity by 2030 [link](#)
- Deploy a 600 MWh Battery Energy Storage by 2030 [link](#)



## Policy / Regulation

- Import duties range between 0-30% [link](#)
- A reduced VAT rate of 5% applies on renewable energy equipment [link](#)
- No net metering, no Feed-in Tariff [link](#)



## Electrification Rate

- 53% of the population has access to electricity [link](#)
- Aspiring to achieve universal access by 2030 [link](#)



## Total PV Installed

• Utility-scale		30.00 MWp
• C&I		0.14 MWp
• MG		0.21 MWp
• SHS		0.03 MWp
• Residential		0.58 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.056	\$ 0.020	\$ 0.020
MAX	\$ 0.125	\$ 0.022	\$ 0.022



## Noteworthy Developments

- 50 MW phase 2 Ramarothole solar park under development [link](#)
- 100 MW project under development by Astra Energy [link](#)
- 10 mini-grids under development to provide electricity to 30,000 people and clinics with World Bank support [link](#)
- Deploying 4,400 MGs connections and 3,402 SHS via the Renewable Lesotho Programme [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Liberia



## Objectives

- Increase renewable energy share to at least 75% by 2030 [link](#)
- Bringing total installed capacity to 266MW, including 238MW of renewable by 2030 [link](#)
- 19% of total electricity to come from renewables excluding large hydropower [link](#)
- Deploy 60 MW of on-grid solar PV by 2030 [link](#)



## Policy / Regulation

- No import tariffs on off-grid solar products [link](#)
- The new standard VAT is 18% [link](#)
- WHT Rate is averaged at 15 % [link](#)
- New net metering policy in place [link](#) , No FiT available [link](#)



## Electrification Rate

- 32.7% of the population is electrified [link](#)
- Targeting 75% electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		0 MWp
• C&I	<div></div>	3.64 MWp
• MG	<div></div>	0.05 MWp
• SHS		0 MWp
• Residential	<div></div>	18.57 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.150	\$ 0.190	\$ 0.190
MAX	\$ 0.240	\$ 0.220	\$ 0.220



## Noteworthy Developments

- Tender launched for 70 MW solar projects with 60 MWh battery storage across two sites [link](#)
- 24 MW/10 MWh storage project under development by Scatec [link](#)
- Mount Coffee 60 MW Solar Plant-Phase 1 under construction [link](#)
- BGFA supporting the development of 30 MGs across the country [link](#)
- 250 MW solar project under development by Runda Solar [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Libya



## Objectives

- Expand the share of renewable energy in the electricity mix to 19% in the energy mix by 2030 with cumulative capacity of 2,600 MW [link](#)
- Increase the contribution of renewable energy to 20% by 2035, with a cumulative capacity of 4,000 MW [link](#)



## Policy / Regulation

- No general customs duties on imports; most goods pay a 5% service fee plus 0.5% minor import charges [link](#)
- There is no VAT in the country [link](#)
- No net metering [link](#) , Feed-in tariff applicable [link](#)



## Electrification Rate

- Total electrification rate stands at 73.2% [link](#)



## Total PV Installed

• Utility-scale	<div></div>	1.14 MWp
• C&I	<div></div>	0.33 MWp
• MG		0 MWp
• SHS		0 MWp
• Residential	<div></div>	7.91 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.004	\$ 0.008	\$ 0.006
MAX	\$ 0.006	\$ 0.012	\$ 0.008



## Noteworthy Developments

- 500 MW Sadada project under development by TotalEnergies [link](#)
- AG Energy to develop a 200 MW solar plant in Ghadames [link](#)
- 1500 MW project under development by PowerChina and EDF [link](#)
- 99 MW solar plant under construction in Al Kufra [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Madagascar



## Objectives

- Grow renewable energy capacity to 893 MW by 2030, with 5600 MW from solar by 2028 [link](#)
- Increase the share of renewable energy to at least 85% by 2030, including a 5% contribution from solar [link](#)



## Policy / Regulation

- Import duty waived for RE equipment (policy may change in 2026) [link](#)
- No VAT on imported RE equipment [link](#)
- Solar equipment is VAT-exempt [link](#)
- No net metering policy in place [link](#) , FiT is available [link](#)



## Electrification Rate

- 36% % of the population has access to electricity [link](#)
- Aims to raise electricity access to 80% by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	68.20 MWp
• C&I	<div></div>	26.84 MWp
• MG	<div></div>	7.88 MWp
• SHS	<div></div>	4.13 MWp
• Residential	<div></div>	83.56 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.151	\$ 0.093	\$ 0.070
MAX	\$ 0.755	\$ 0.376	\$ 0.229



## Noteworthy Developments

- GSU secured agreements to develop a 50 MW solar plant and a 25 MWh battery energy storage system (BESS) [link](#)
- Dera Energy building 32 MW solar projects across the country [link](#)
- Axian is developing a 20 MW solar project with 14 MWh of storage
- Two solar PV projects totaling 210 MW are planned in Ihazolava and Mahajanga [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Malawi



## Objectives

- 848 MW of additional generation capacity by 2030, with 714 MW from the private sector [link](#)
- Expand the current renewable energy share from 90% to 96% by 2030 [link](#)
- Achieve 1.5 GW of power generation by 2030 [link](#)



## Policy / Regulation

- Import duty exemption for solar products [link](#)
- Solar products are levied at a rate of 16.5% [link](#)
- Established net metering [link](#), FiT scheme available [link](#)



## Electrification Rate

- 25.9% of the population is electrified [link](#)
- 63% in urban areas and 19.7% in rural areas [link](#)
- Targets 70% electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	129.30 MWp
• C&I	<div></div>	4.29 MWp
• MG	<div></div>	0.49 MWp
• SHS	<div></div>	7.34 MWp
• Residential	<div></div>	38.61 MWp

Source

[AFSIA](#)

[GOGLA](#)

[EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.037	\$ 0.125	\$ 0.050
MAX	\$ 0.090	\$ 0.147	\$ 0.163



## Noteworthy Developments

- ISA and NTP plan to co-develop a 100 MW solar plant [link](#)
- 50 MW solar project under development by AMEA Power [link](#)
- EGENCO building 50 MW Salima solar park [link](#)
- Voltalia is developing a 55 MW solar plant with a 10 MWh battery storage system [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Mali



## Objectives

- Boost the renewable energy share in the power mix to 39% by 2030, and add 1 GW of RE capacity [link](#)
- Raise rural electrification to 66.64% by 2030 with off-grid systems [link](#)
- Reach 60% renewable energy in the energy mix by 2040, excluding medium and large hydro [link](#)



## Policy / Regulation

- Solar equipment is customs duty-free [link](#)
- Off-grid solar products are VAT-free [link](#)
- Net metering available [link](#)
- FiT has not yet been implemented [link](#)



## Electrification Rate

- 53% of the population has access to electricity [link](#)
- Seeks to achieve 87% electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	51.05 MWp
• C&I	<div></div>	110.08 MWp
• MG	<div></div>	9.94 MWp
• SHS	<div></div>	1.87 MWp
• Residential	<div></div>	49.12 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.106	\$ 0.139	\$ 0.123
MAX	\$ 0.275	\$ 0.239	\$ 0.239



## Noteworthy Developments

- A 50 MW solar project is under development by ISA and NTPC [link](#)
- Allied Gold launched a 32 MW solar + 30 MWh BESS project for it's Sadiola Mine [link](#)
- Novawind developing a 200 MW solar project [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Mauritania



## Objectives

- 50% of electricity to be generated from renewable sources by 2030 [link](#)
- Increase the renewable energy in the generation mix to 70% by 2030 [link](#)
- Envisage achieving a 30% share of electricity generation from solar PV by 2030 [link](#)



## Policy / Regulation

- Customs duties and VAT exemption on import of equipment used for RE power generation [link](#)
- Local goods are subject to a 16% VAT rate [link](#)
- Net metering is in place, but no FiT policy [link](#)



## Electrification Rate

- 55% of the population has access to electricity [link](#)
- Targeting universal electrification by 2030 [link](#)



## Total PV Installed

• Utility-scale		84.30 MWp
• C&I		48.63 MWp
• MG		0.05 MWp
• SHS		0.07 MWp
• Residential		37.20 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.061	\$ 0.148	\$ 0.054
MAX	\$ 0.148	\$ 0.148	\$ 0.148



## Noteworthy Developments

- Iwa Green Energy to develop a 160 MW solar-wind hybrid project [link](#)
- AFD and the EU support the electrification of 20 villages [link](#)
- GreenGo Energy plans a green hydrogen project with 6.3 GW of solar capacity [link](#)
- The government secured a loan to develop 10 solar plants [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	Rural Electrification Agency

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Managing Director, Solar Promotion International GmbH



## Africa's E-Mobility Revolution: Kenya in the Driver's Seat

Africa is witnessing a rapid transformation in transportation, with electric mobility (e-mobility) emerging as a key solution to urbanization, air pollution, and energy security challenges. Across the continent, electric vehicles (EVs) are being adopted at an accelerating pace, driven by government support, entrepreneurial innovation, and rising consumer demand for cleaner and more affordable transport.

At the forefront of this transformation is Kenya, which has positioned itself as a hub for e-mobility innovation in East Africa. The country's rapid adoption of electric two- and three-wheelers, combined with a dynamic startup ecosystem and supportive policies, has made Kenya a continental leader in sustainable transport solutions.

## Africa's E-Mobility Market

The African e-mobility market is expanding quickly, projected to grow from \$2.8 billion in 2023 to \$7 billion by 2028. Investment in the sector is significant, with African startups raising \$2.21 billion in 2024 alone. Mobility-focused startups have led the way, securing \$178.6 million in the first quarter of the year.

Regional trends show distinct patterns: East Africa, led by Kenya, focuses on electrifying commercial vehicles, particularly two- and three-wheelers. Southern Africa, primarily South Africa, emphasizes EV manufacturing but faces energy infrastructure challenges. In West Africa, countries like Nigeria are forming strategic partnerships for local EV assembly and industry development.

## Kenya's E-Mobility Ecosystem

Kenya's e-mobility growth is fueled by a renewable energy grid with over 90% of power from renewables, strong government support, and a thriving startup ecosystem. EV registrations soared from just 65 vehicles in 2018 to 4,047 by 2023.

The two-wheeler segment, dominated by electric motorcycles or e-bodas remains the driving force of Kenya's e-mobility market. This is largely due to their affordability and their crucial role in both urban and rural transport, providing a reliable means of daily commuting for millions of Kenyans.

## Kenya's E-Mobility Ecosystem

Several innovative startups are leading this transformation. ARC Ride is expanding its battery-swapping network with a \$10 million financing facility, aiming to deploy 600 cabinets and 25,000 batteries across the country. BasiGo is scaling its electric bus operations in East Africa after raising \$42 million in 2024, while Spiro has partnered with US-based Ace Green Recycling to tackle the critical issue of battery recycling. Meanwhile, Watu is contributing to Kenya's e-bike boom, offering efficient and accessible solutions for urban mobility. Together, these companies are creating a dynamic ecosystem that is shaping the future of e-mobility in Kenya.

## Infrastructure and Investment

Investment in Kenya's e-mobility sector is driving critical infrastructure development. The government plans to install 10,000 public charging stations by 2030, supported by a budget of 6 billion Kenyan shillings (~€39.5 million). The rollout prioritizes major cities and transport corridors, with charging stations planned every 25 kilometers along key motorways. Kenya Power has already installed 45 fast-charging stations across six counties.

## Policy and Regulation

Supportive government policies have been pivotal. The Draft National E-Mobility Policy (March 2024) outlines Kenya's vision to lead in Africa, promoting local manufacturing, comprehensive charging infrastructure, and a sustainable transport system. Fiscal incentives, including excise duty exemptions, reduced import duties, and VAT exemptions on EVs, batteries, and charging equipment, make adoption more affordable.

The government also leads by example, with plans to electrify its vehicle fleet, including police vehicles, at a rate of 1,000 vehicles per year. These measures place Kenya alongside other progressive African countries, such as Ethiopia, which banned non-electric vehicle imports in early 2024, and Rwanda, which has pledged to electrify 20% of its bus fleet by 2030.

## Emerging Trends

Battery swapping has become a dominant solution for commercial two-wheelers, helping overcome charging infrastructure limitations. Local manufacturing and assembly are expected to grow under government incentives. Kenya's high renewable energy share ensures that EV adoption translates into genuine carbon reductions.

# Conclusion

Kenya's e-mobility sector is at a pivotal moment. Forward-thinking policies, a vibrant startup ecosystem, and strong investor interest have created fertile ground for rapid growth. By electrifying its two-wheeler fleet, building a robust battery-swapping network, and scaling public transport electrification, Kenya offers a blueprint for sustainable urban mobility. Its progress demonstrates that clean, affordable, and efficient transportation is not only feasible but can also drive economic opportunity and environmental sustainability across Africa.





# Mauritius



## Objectives

- Deploy an additional 100 MW of electricity generation capacity by 2026 [link](#)
- Reach 40% share of renewable energy in the electricity mix by 2030 [link](#)
- Raise the renewable energy share to 60% by 2035 [link](#)



## Policy / Regulation

- PV Systems are exempted from Customs duty [link](#)
- No VAT for renewable energy systems [link](#)
- 2 MW capacity cap for net metering [link](#)
- Feed-in tariff policy exists [link](#)



## Electrification Rate

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



## Total PV Installed

• Utility-scale	<div></div>	152.68 MWp
• C&I	<div></div>	14.50 MWp
• MG		0 MWp
• SHS	<div></div>	0.03 MWp
• Residential	<div></div>	40.91 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.048	\$ 0.065	\$ 0.065
MAX	\$ 0.193	\$ 0.220	\$ 0.119



## Noteworthy Developments

- Qair secured funding for 60 MW solar [link](#)
- ISA and NTPC to develop 30 MW floating solar project [link](#)
- Ecoasis Energy constructing 2 MW solar in Moka City [link](#)
- ADFD and IRENA supporting deployment of 10,000 rooftop PV systems across the country [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Morocco



## Objectives

- Generate 52% of electricity from renewable sources by 2030 [link](#)
- Solar energy to account for 20% of total electricity production by 2030 [link](#)
- Reach 2.1 GW of combined solar PV and CSP capacity by 2030 [link](#)
- Increase the share of renewable energy capacity to 80% by 2050 [link](#)



## Policy / Regulation

- Solar panels have a 10% import duty, rising to 25% in 2026 [link](#)
- A reduced VAT rate of 10% for solar equipment [link](#)
- Net metering scheme is in place [link](#), FiT is available [link](#)



## Electrification Rate

- The entire population has access to electricity [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.099	\$ 0.056	\$ 0.057
MAX	\$ 0.247	\$ 0.226	\$ 0.272



## Noteworthy Developments

- Sound Energy and Gaia energy developing 270 MW of solar [link](#)
- ONEE launched a nationwide 1,600 MWh BESS project [link](#)
- Qair building a 48 MWp solar power plant in Tiznit [link](#)
- GreenPower Morocco developing 10 plants totaling 587 MWp
- ACWA Power to build Noor Midelt 2 & 3 with 400 MW solar and 602 MWh total storage [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Mozambique



## Objectives

- Generate 62% of its electricity from renewable energy by 2030 [link](#)
- Install 1 GW of solar capacity by 2030 and 7.5 GW by 2050 [link](#)
- Solar and wind to contribute 20% of the electricity mix by 2040, with 266 MW solar and 40 MW wind installed by 2030 [link](#)



## Policy / Regulation

- 7.5% import duty applies on solar products [link](#)
- The standard VAT is 16% , but solar panel materials for rural electrification exempt until the end of 2025 [link](#)
- Net metering available [link](#) , FiT available [link](#)



## Electrification Rate

- 40% of the population is electrified [link](#)
- Aspiring to achieve universal access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	126.00 MWp
• C&I	<div></div>	20.69 MWp
• MG	<div></div>	3.75 MWp
• SHS	<div></div>	4.55 MWp
• Residential	<div></div>	144.82 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.096	\$ 0.076	\$ 0.075
MAX	\$ 0.143	\$ 0.076	\$ 0.075



## Noteworthy Developments

- Hydroland is developing 100 MW floating solar project [link](#)
- 95 MW Chibuto solar Plant under development by Sal Energia [link](#)
- GET. Invest Mozambique supporting two 48 MWp solar plants with 18 MWh storage each and a 120 MWh storage plant [link](#)
- 400 MWac solar under development at Cahora Bassa Hydroelectric Plant by HCB [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Namibia



## Objectives

- Expand the renewable energy share from 30% to 70% by 2030 [link](#)
- Reach 900 MW of power capacity by 2030 [link](#)
- Add 1 GW of solar capacity by 2030 [link](#)



## Policy / Regulation

- Import duty exemption for renewable energy equipment [link](#)
- 15% VAT is levied on most goods [link](#)
- Wheeling framework is available [link](#)
- Net metering established [link](#) , FiT exists [link](#)



## Electrification Rate

- 59.4% of the population has access to electricity [link](#)
- Aiming for 70% of electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale		290.11 MWp
• C&I		70.47 MWp
• MG		0.26 MWp
• SHS		0 MWp
• Residential		197.21 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.080	\$ 0.068	\$ 0.052
MAX	\$ 0.189	\$ 0.273	\$ 0.431



## Noteworthy Developments

- Govt approved 3 GW solar for Green hydrogen production [link](#)
- Nampower launched tender for 6\*20 MW solar PV projects [link](#)
- Nampower begun construction of 100 MW Sores Gaib solar station [link](#)
- Oshakati Premier Electric launched a 5 MW solar Plant [link](#)
- Hopsol constructing phase 2 of the otjiwarongo solar Plant [link](#)
- The government launched the 25MW Khan Solar PV Plant [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Niger



## Objectives

- Reach 30% of renewable energy generation by 2030 [link](#)
- Install 50 MW of solar by 2026 and 240 MW by 2030 [link](#)



## Policy / Regulation

- Import duties and VAT exemption for RE products [link](#)
- No net metering, FiT available [link](#)
- The WHT rate ranges between 2% and 20% [link](#)



## Electrification Rate

- Total electrification stands at 20.1% [link](#)
- Aspiring to achieve 60% access to power by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	55.90 MWp
• C&I	<div></div>	2.10 MWp
• MG	<div></div>	1.15 MWp
• SHS	<div></div>	0 MWp
• Residential	<div></div>	15.48 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.107	\$ 0.173	\$ 0.101
MAX	\$ 0.246	\$ 0.246	\$ 0.246



## Noteworthy Developments

- NIGELEC launched tender for a 20 MW solar Plant in Maradi [link](#)
- ISA and NTPC developing a 50 MW solar plant [link](#)
- Investment being raised for three RE projects totaling 298 MW [link](#)
- Government partnering with AfDB to boost the energy sector, with a focus on renewables [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Nigeria



## Objectives

- Reach 30% of renewable energy generation by 2030 [link](#)
- Increase the RE share in the energy mix to 50% by 2030 [link](#)
- Add 5 GW of renewable energy by 2030 [link](#)
- Deploy a 277 GW power system by 2060 [link](#)



## Policy / Regulation

- 5% Import duties and 5% VAT on imported solar components [link](#)
- Solar panels are VAT exempt [link](#)
- Net metering framework currently in draft [link](#) , FiT available [link](#)
- Wheeling regulations in place for projects above 1 MW [link](#)



## Electrification Rate

- 61.2% of the population is electrified [link](#)
- Planning for universal access by 2030 [link](#)



## Total PV Installed

• Utility-scale		12.80 MWp
• C&I	<div></div>	293.03 MWp
• MG	<div></div>	94.00 MWp
• SHS	<div></div>	88.57 MWp
• Residential	<div></div>	703.01 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.003	\$ 0.031	\$ 0.031
MAX	\$ 0.145	\$ 0.145	\$ 0.145



## Noteworthy Developments

- Granville Energy and MESL signed MOU for 1 GW floating solar [link](#)
- Govt to develop 19 solar projects of 100 MW each across 19 states [link](#)
- 20 MW solar under development in Challawa Industrial Area [link](#)
- Konexa secured funds for a 50 MW solar plant [link](#)
- WeLight to deploy 400 MGs in the country [link](#)
- Nine companies to roll out 1,350 MGs and 1.6 million SHS [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Africa's Solar Manufacturing Moment: Building Industrial Capacity for a Clean Energy Future

Africa's solar sector has expanded rapidly over the past decade, driven by declining technology costs, rising electricity demand, and persistent supply gaps across national grids. While deployment has accelerated, the continent has remained heavily dependent on imported photovoltaic (PV) modules and components. In 2025, this dynamic began to shift more visibly. A growing number of governments and private investors moved beyond solar installation toward local manufacturing, positioning it as a strategic pillar of Africa's energy transition and industrial development agenda.

For many years, Africa's participation in the solar value chain was largely confined to project development, installation, and operations. Manufacturing, particularly of PV modules and cells, remained concentrated outside the continent. This reliance exposed African markets to currency volatility, global supply-chain disruptions, and limited domestic value creation. Recent announcements and investments, however, indicate a deliberate effort to anchor more of the solar value chain locally.

Nigeria has emerged as a focal point of this shift. In 2025, a major public-private partnership was established to develop a 1 GW solar panel manufacturing facility, reflecting a clear national ambition to reduce import dependence and strengthen industrial capacity. The project combines public procurement commitments with private sector expertise, ensuring both demand certainty and technology transfer. By targeting progressive increases in local content over the initial years of operation, the initiative aims to stimulate domestic supply chains while supporting national electrification programs.

Nigeria's manufacturing push extends beyond a single project. Additional plans announced during the year include a 1.2 GW solar module assembly plant linked to off-grid and grid-connected generation initiatives, as well as the construction of an 800 MW PV panel factory by a domestic manufacturer. Together, these developments signal a coordinated effort to scale local production capacity, create skilled employment, and position Nigeria as a regional hub for solar manufacturing in West Africa.

Southern Africa has also shown renewed interest in domestic production. Zimbabwe announced plans to establish a local solar panel manufacturing plant as part of a broader strategy to attract foreign investment into renewable energy and clean technologies. While the project remains at an early stage, it reflects growing recognition among policymakers that solar manufacturing can support energy security while contributing to industrialization and export potential within the region.

In East Africa, manufacturing activity has taken a different but complementary form. In Kenya, a large-scale manufacturing facility focused on solar-related products and systems was inaugurated in 2025. While not yet producing conventional PV panels, the facility represents an important step toward localization of solar technology production and refurbishment. By shortening supply chains and improving responsiveness to regional demand, such investments support the fast-growing off-grid and distributed energy markets that dominate much of East Africa's solar landscape.

North Africa has continued to leverage its industrial base and strategic location to attract large-scale solar manufacturing investments. In Egypt, multiple announcements in 2025 confirmed the development of integrated solar manufacturing complexes combining cell and module production, with future plans to localize upstream processes such as wafers and silicon components. These projects are designed not only to serve domestic demand but also to target export markets across Africa, the Middle East, and Europe, reinforcing Egypt's role as a manufacturing gateway.

Ethiopia stands out for its progress in upstream manufacturing. In 2025, a solar cell production facility commenced operations with plans to scale output significantly in the coming years. This development positions Ethiopia among a small group of African countries participating beyond module assembly, signaling early movement toward deeper integration into the global solar value chain.

Despite this momentum, challenges remain. African solar manufacturing largely focuses on assembly rather than full vertical integration, where capital requirements, energy intensity, and technological barriers are higher. Competing with established global manufacturers on cost will require scale, policy consistency, affordable finance, and reliable infrastructure. Nevertheless, local manufacturing does not need to replace imports entirely to deliver value. Even partial localization can improve supply-chain resilience, reduce foreign exchange exposure, and retain more economic value within national economies.

The developments of 2025 suggest that local solar manufacturing in Africa is moving from ambition to implementation. By aligning energy policy with industrial strategy and leveraging public-private partnerships, African countries are laying the groundwork for a more resilient and inclusive solar economy. As deployment continues to accelerate, manufacturing has the potential to become a defining pillar of Africa's clean energy future, powering not only electricity systems, but also jobs, skills, and long-term economic growth.



# Rwanda



## Objectives

- Reach 100% of renewable energy in the mix by 2050 [link](#)
- 50 MW solar capacity to be added (2029–2035) [link](#)
- Install 1.5 GW of new solar capacity by 2050 [link](#)



## Policy / Regulation

- No customs duty on solar equipment [link](#)
- Solar equipment is VAT exempt [link](#)
- Net metering not yet formally established [link](#) , No FiT policy available [link](#)
- Licensing not required for ≤100 kWp solar projects [link](#)



## Electrification Rate

- 84.6% of population has access to electricity [link](#)
- Targeting universal access by 2029 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	8.80 MWp
• C&I	<div></div>	6.55 MWp
• MG	<div></div>	0.77 MWp
• SHS	<div></div>	7.64 MWp
• Residential	<div></div>	4.44 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.061	\$ 0.076	\$ 0.067
MAX	\$ 0.255	\$ 0.259	\$ 0.121



## Noteworthy Developments

- Government launched a 60 MW PV+60 MWh of storage in Bugesera [link](#)
- Government exploring the development of a 30 MW solar power plant [link](#)
- MINIFRA announced plans to develop a 200 MW solar plant [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Sao Tome & Principe



## Objectives

- Increase the solar PV capacity to 18 MWp by 2030 [link](#)
- Raise the share of RE to 50% in the energy mix by 2035 [link](#)
- Achieve 72% of its total installed electricity capacity from renewable energy by 2050, including nearly 47 MW of solar PV [link](#)



## Policy / Regulation

- Solar components are exempt from customs duty [link](#)
- The standard VAT is 15%, reduced to 7.5% [link](#)
- No net metering and FiT regulations available [link](#)
- The withholding tax rate ranges between 10-15% [link](#)



## Electrification Rate

- Current electricity access rates stands at 84% [link](#)
- Aiming for universal access to electricity by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	1.09 MWp
• C&I	<div></div>	0.19 MWp
• MG		0 MWp
• SHS		0 MWp
• Residential	<div></div>	0.35 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.078	\$ 0.180	\$ 0.161
MAX	\$ 0.180	\$ 0.330	\$ 0.161



## Noteworthy Developments

- Release by Scatec signed deal for an 11 MW solar Plant [link](#)
- Site being prepared for a 20 MWp solar project in Água Casada [link](#)
- 3 MWp + 2-4 MWh project under development on principle island [link](#)
- Officially joined the African Minigrid Program and pilot started [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Senegal



## Objectives

- Achieve 40% renewable energy in the energy mix by 2030 [link](#)
- Install 50 MW of Concentrated Solar Power by 2030 [link](#)
- Add 100 MW of solar PV by 2030 [link](#)
- Bring electricity to 200,000 households, electrify 600 health clinics and 200 schools by 2030 [link](#)



## Policy / Regulation

- 3% import duty for solar panels, 27% on batteries [link](#)
- RE equipment are VAT exempt [link](#)
- Net metering and FiT policies available [link](#)
- Mini-grids under 50 kW do not require a licence [link](#)



## Electrification Rate

- 84% of the population has access to electricity [link](#)
- Targets universal access by 2029 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	307.50 MWp
• C&I	<div></div>	58.20 MWp
• MG	<div></div>	8.98 MWp
• SHS	<div></div>	3.63 MWp
• Residential	<div></div>	293.67 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.164	\$ 0.165	\$ 0.129
MAX	\$ 0.307	\$ 0.447	\$ 0.260



## Noteworthy Developments

- 300 MW solar desalination plant in development by ACWA Power [link](#)
- SENELEC and CNTIC to develop 2\*50 MW+90 MWh plants [link](#)
- Construction underway for the 60 MW + 72 MWh NEA Kolda project [link](#)
- Infinity Power developing a 40 MW/160 MWh BESS project [link](#)
- JUWI developing a 20 MW+11 MWh plant for Eramet Group [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Seychelles



## Objectives

- Increase the share of renewables to 25% by 2030 [link](#)
- long-term goal of reaching 100% renewable energy by 2050 [link](#)



## Policy / Regulation

- PV systems are duty-free [link](#)
- Imported goods for RE generation are VAT free [link](#)
- FiT policy not yet established [link](#)
- Net metering framework is in place [link](#)

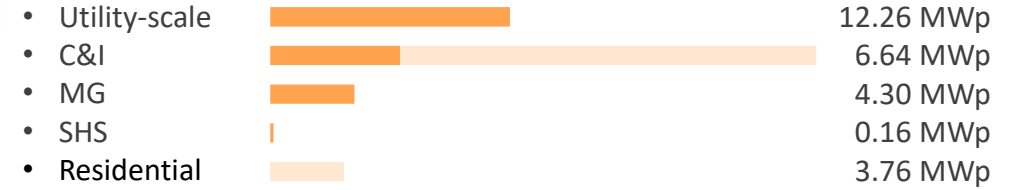


## Electrification Rate

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



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.128	\$ 0.296	\$ 0.296
MAX	\$ 0.333	\$ 0.360	\$ 0.360



## Noteworthy Developments

- The government launched Seychelles Renewable Energy Acceleration Program (REAP) to attract private investment and power a sustainable future [link](#)
- Qair started the construction on the 5.8 MW Seysun Lagoon floating solar project [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Sierra Leone



## Objectives

- Raise the share of RE to 35% by 2030 [link](#)
- Increase renewable energy share to 51% by 2050 [link](#)
- Boost generation capacity to 1 GW by 2035, with 55% hydro, 30% thermal, and 15% solar [link](#)
- Reach 932 MW Solar PV deployment by 2040 and 1.97 GW by 2050 [link](#)



## Policy / Regulation

- Duty-free import of renewable energy products [link](#)
- VAT exemption on a case-by-case basis for RE equipment [link](#)
- FiT not yet established [link](#)
- No net metering policy in place [link](#)



## Electrification Rate

- Total electrification rate stands at 36% [link](#)
- 21% in urban and 15% in rural areas [link](#)
- Targeting 78% of electricity coverage by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	31.00 MWp
• C&I	<div></div>	11.55 MWp
• MG	<div></div>	11.09 MWp
• SHS	<div></div>	3.22 MWp
• Residential	<div></div>	49.21 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.105	\$ 0.265	\$ 0.248
MAX	\$ 0.264	\$ 0.276	\$ 0.293



## Noteworthy Developments

- Release by Scatec secured a 40 MW solar Project [link](#)
- World Bank to finance the 52 MWp + 21 MWh RESPITE project [link](#)
- Construction underway on the 15 MW Macoth Solar Plant [link](#)
- A 23.8 MW+13.8 MWh hybrid plant under development by FG Gold and CrossBoundary [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Somalia



## Objectives

- Expand renewable capacity to 392 megawatts by 2030 [link](#)
- A 30% rise in off-grid generation by 2030 [link](#)
- Generate at least 50 % of the country's energy from solar power by 2028 [link](#)



## Policy / Regulation

- Solar equipment eligible for duty-free import [link](#)
- The standard VAT is 5% [link](#)
- Feed-in Tariff (FiT) is not available [link](#)
- No net metering scheme in place [link](#)



## Electrification Rate

- 49% of the population is electrified [link](#)
- 77% in urban and 31% in rural areas [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.45	\$ 0.45	\$ 0.45
MAX	\$ 1.00	\$ 1.00	\$ 1.00



## Noteworthy Developments

- Gov't t issued tenders for two projects totaling 67 MW + 196 MWh [link](#)
- MoEWR launched tender for a 10 MW + 20 MWh project [link](#)
- Tender has been launched for an 8 MW + 20 MWh project in Borama [link](#)
- MoEWR issued a tender for solar + Storage at 28 education facilities [link](#)

## Key Electricity Institutions

	<a href="#">Ministry</a>		<a href="#">Utility Company</a>
	<a href="#">Regulator</a>		<a href="#">Rural Electrification Agency</a>



# Somaliland



## Objectives

- 25% of national energy generation will come from renewable sources by 2027 [link](#)
- Achieve universal, affordable energy access by 2030, prioritizing local and renewable sources [link](#)



## Policy / Regulation

- 100% exemption for solar panels [link](#)
- 5% Standard VAT applies on goods and services [link](#)
- No net metering, No Feed-in Tariff [link](#)



## Electrification Rate

- The overall electricity access rate is estimated at 50.3% [link](#)



## Total PV Installed

• Utility-scale	<div></div>	19.88 MWp
• C&I	<div></div>	2.87 MWp
• MG	<div></div>	8.35 MWp
• SHS	<div></div>	10 MWp
• Residential		

Source [AFSIA](#) [GOGLA](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.200	\$ 0.200	\$ 0.200
MAX	\$ 0.500	\$ 0.500	\$ 0.500



## Noteworthy Developments

- The Government launched a tender for a 12 MWp + 36 MWh project [link](#)
- Tender launched for hybrid/off-grid solar PV + BESS installations at 29 education facilities in Sahil [link](#)
- The govt is developing solar systems + storage solutions for 150 health centers and 215 educational facilities [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# South Africa



## Objectives

- Add 39 GW of renewable energy, with the IPP programme by 2030 [link](#)
- Renewables are set to provide 41% of grid electricity by 2030 [link](#)
- Reach 29.5 GW of new capacity, including 6 GW of solar, by 2030 [link](#)
- Expand generation capacity to 105 GW by 2039, including 25 GW of Solar PV by 2039 [link](#)



## Policy / Regulation

- 10% import duty on solar panels [link](#)
- The standard VAT on imported solar panels is 15% [link](#)
- VAT on solar panels range between 15-16% [link](#)
- FiT replaced by a competitive bidding process [link](#)
- Net metering exists [link](#) , wheeling available [link](#)



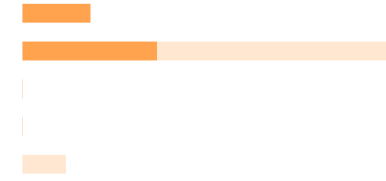
## Electrification Rate

- Total electrification rate stands at 94.7% [link](#)
- Targets universal electricity access by 2030 [link](#)



## Total PV Installed

- Utility-scale
- C&I
- MG
- SHS
- Residential



3554.69 MWp PV +  
600 MWe CSP  
7014.46 MWp  
1.30 MWp  
0.74 MWp  
2265.98 MWp

Source

[AFSIA](#)

[GOGLA](#)

[EMBER](#)



## Current Tariff Grid Electricity

Source

Residential

Commercial

Industrial

MIN

\$ 0.075

\$ 0.063

\$ 0.054

MAX

\$ 0.498

\$ 0.419

\$ 0.388



## Noteworthy Developments

- 75 MW Du Plessis Dam Solar PV2 park under construction by Mulilo [link](#)
- NOA closed financing of the 349 MW Khauta South project [link](#)
- Scatec won bid for the 846 MW solar Kroonstad PV Cluster [link](#)
- AMEA constructing the 120 MW klerksdorp solar plant [link](#)
- Hive Hydrogen cleared to develop a 1,430 MW solar PV cluster for its Coega Green Ammonia project [link](#)

## Key Electricity Institutions



[Ministry](#)



[Utility Company](#)



[Regulator](#)



[Rural Electrification Agency](#)

# SAPVIA AWARDS 2026

Celebrating Excellence in  
South Africa's Solar PV Industry.

Honouring the leaders shaping our clean energy future. From innovation and impact to skills and sustainability, the SAPVIA Awards recognise excellence across the solar PV value chain.

## Core Categories

- Utility-Scale & C&I Solar
- SSEG Installation Excellence
- Local Manufacturing
- R&D & Innovation
- Collaboration & Partnerships
- Skills Development
- Socio-Economic Impact

## New for 2026

- Solar + Storage (BESS) Excellence
- Youth Leadership in Solar
- Community Energy Impact
- Just Transition Leadership



## CALL FOR NOMINATIONS OPENING SOON!

Put forward the people, projects and organisations driving South Africa's solar revolution.

For enquiries, nominations, and sponsorship opportunities: [info@sapvia.co.za](mailto:info@sapvia.co.za) | +27 (0)11 568 8460/61

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**SAPVIA**  
South African Photovoltaic Industry Association



## key developments in South Africa 2026

SAPVIA identifies two key developments for South Africa's energy sector in 2026: the operationalisation of the South African Wholesale Electricity Market (SAWEM) and the accelerating deployment of Battery Energy Storage Systems (BESS). While SAWEM restructures the commercial landscape for power trading, BESS offers the technical versatility to firm up intermittent renewables across the entire grid.

### SAWEM

The scheduled 1<sup>st</sup> of April 2026 launch of the SAWEM signifies a pivotal transition from Eskom's traditional single-buyer model to a competitive multi-party platform. While the National Transmission Company South Africa (NTCSA) secured its Market Operator license in late 2025, full operational autonomy remains subject to resolving conflict-of-interest concerns regarding its status as an Eskom subsidiary. Beginning in January 2026, the Electricity Market Advisory Forum (EMAF) will lead the technical review of the Market Rules and Code. While SAWEM introduces vital new pathways for energy trading and offtaker aggregation, its initial phase will be modest; legacy bilateral PPAs will largely remain unchanged. Ultimately, the market's success in driving new capacity will hinge on its ability to provide the pricing transparency and liquidity required for bankable merchant structures.

## BESS

In our view and backed by our recent research and global and domestic developments, the defining development for 2026 is the rapid scaling of BESS in tandem with solar and other renewable energy projects. Driven by record-low global capital costs, the investment case for BESS has fundamentally changed. As of late 2025, utility-scale BESS costs hit a benchmark of \$125/kWh, translating to a levelised cost of just \$65/MWh. This shift moves BESS from a niche 'premium' solution to a mainstream, cost-competitive component across all market segments.

As an example: at utility scale, the Battery Energy Storage Independent Power Producer Procurement Programme (BESIPPPP) is facilitating South Africa's inaugural wave of utility-scale storage projects. Key projects like the **Oasis cluster** (257 MW / 1,028 MWh) and the **Mogobe BESS** (103 MW / 412 MWh) are on track for commercial operation by late 2026.

These facilities will assume the critical grid services such as frequency regulation, reserves, and congestion management that were traditionally the sole domain of thermal power plants. Another project that is expected to reach commercial operation in 2026 is the **Mulilo Total Hydra Storage Project** (216 MW solar / 497-500 MWh BESS), which is located near De Aar in the Northern Cape, procured under the Risk Mitigation Independent Power Producer Procurement Programme (RMIPPPP). This hybrid facility will provide 75 MW of dispatchable power from 5 a.m. to 9:30 p.m. daily, a 16.5-hour dispatch window targeting peak demand periods. These projects demonstrate the momentum shift from intermittent to dispatchable renewable energy supply with grid ancillary services.

## BESS

Furthermore, solar-plus-BESS offers commercial and industrial (C&I) customers near complete energy independence. By storing excess daytime power, businesses can avoid expensive peak-hour tariffs, eliminate demand charges, and remain operational during load shedding or power outages. Given the current trajectory of Eskom's price hikes, shortened payback periods have made the business case for storage increasingly undeniable and an essential investment for 2026.

The South African grid has traditionally relied on massive thermal facilities concentrated in Mpumalanga for both power and stability. However, BESS is emerging as a critical game-changer by providing more than just energy, it delivers firm capacity and essential grid ancillary services directly from the provinces where renewable resources are most abundant. This geographical diversification is vital for supporting national grid expansion. Therefore, BESS elevates solar PV from a supplementary resource to a primary driver of a modern energy landscape. For SAPVIA, the rise of these projects signals that the renewable sector has achieved a new level of maturity, transitioning from variable generation to dispatchable solutions that underpin long-term grid stability.



# South Sudan



## Objectives

- Install about 2,729.5 MW of renewable energy capacity by 2030, with a particular focus on hydropower [link](#)
- Deploy grid-connected solar PV to complement hydropower and reduce reliance on diesel [link](#)



## Policy / Regulation

- 0-25% Import duty applies on solar products [link](#)
- Solar products are VAT exempt [link](#)
- 4% withholding tax applies to solar products (Financial Act 2024/2025) [link](#)
- No net metering or feed-in tariff (FiT) policies are in place [link](#)



## Electrification Rate

- 15% of the population has access to electricity [link](#)
- Plans to raise electricity access to 50% by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	50.00 MWp
• C&I	<div></div>	9.27 MWp
• MG	<div></div>	0.09 MWp
• SHS	<div></div>	0 MWp
• Residential	<div></div>	4.25 MWp

Source

[AFSIA](#)

[GOGLA](#)

[EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.273	\$ 0.32	\$ 0.348
MAX	\$ 0.285	\$ 0.32	\$ 0.348



## Noteworthy Developments

- Construction underway for the 20 MW+35 MWh Nesithu Solar Plant [link](#)
- EIF and FinnFund backing solar-hybrid installations across 413 telecom sites [link](#)

## Key Electricity Institutions



[Ministry](#)



[Utility Company](#)



[Regulator](#)



[Rural Electrification Agency](#)



# Sudan



## Objectives

- Increase the share of renewables to 20% by 2035 [link](#)
- Deploy 10 GW of renewable energy capacity by 2030, focusing on solar, wind, and hydro sources [link](#)
- Install 2,190 MW of grid-connected solar and 50 MW of solar thermal energy by 2035 [link](#)



## Policy / Regulation

- PV components exempt from import duties [link](#)
- Zero VAT on PV system components [link](#)
- No net metering, but FiT is available [link](#)
- A permit is required before starting a solar project [link](#)



## Electrification Rate

- 66% of the population is electrified [link](#)



## Total PV Installed



Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.068	\$ 0.077	\$ 0.085
MAX	\$ 0.128	\$ 0.153	\$ 0.085



## Noteworthy Developments

- The government plans to build a 100 MW solar farm in Dongola [link](#)
- MIMAH supporting the solarization of 100 Health facilities nationwide [link](#)
- Abu Dhabi Fund to finance deployment of 500 MW through multiple solar project [link](#)
- To deploy 500 RE systems through the ASCENT program [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# Tanzania



## Objectives

- Achieve 75% renewable energy by 2030 [link](#)
- Deploy 2,463 MW from solar, wind, gas, and geothermal by 2030 [link](#)
- Reach 1340 MW of solar power in the generation mix by 2038 [link](#)



## Policy / Regulation

- Solar components are duty-free [link](#)
- VAT exemption for solar components [link](#)
- Feed-in tariff applies to SPPS projects up to 10 MW [link](#)
- Net metering policy is available [link](#)



## Electrification Rate

- 48.3% of the population has access to electricity [link](#)
- Aims to increase electricity connectivity to 75% by 2030 [link](#)



## Total PV Installed

• Utility-scale		6.00 MWp
• C&I		17.56 MWp
• MG		2.39 MWp
• SHS		12.09 MWp
• Residential		197.00 MWp



Source [AFSIA](#) [GOGLA](#) [EMBER](#)

## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.08	\$ 0.08	\$ 0.06
MAX	\$ 0.10	\$ 0.10	\$ 0.08



## Noteworthy Developments

- TANESCO launched a 100 MW EPC Tender [link](#)
- ZECO issued a tender for an 18 MW solar facility [link](#)
- AG Energies to begin construction of a 20 MWp solar plant [link](#)
- Tender launched for a 40 MWh BESS project by ZESCO [link](#)
- AFD backing Phase 1 of 150 MW Kishapu solar plant [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# The Gambia



## Objectives

- Generate 50% of its power supply from renewable energy by 2030 [link](#)
- The government intends to build 13 solar PV farms totaling 250 MW by 2050 [link](#)



## Policy / Regulation

- Solar panels are duty-free or with a 0% to 5% tariff [link](#)
- Import VAT is charged at a rate of 15% [link](#)
- Net metering applies to renewable energy projects between 20-100 KW [link](#)
- Feed-In Tariff system exists [link](#)



## Electrification Rate

- The national electrification rate stands at 75% [link](#)
- Aims for universal access by 2026 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	23.00 MWp
• C&I	<div></div>	4.46 MWp
• MG	<div></div>	0.24 MWp
• SHS	<div></div>	0 MWp
• Residential	<div></div>	13.58 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.180	\$ 0.194	\$ 0.207
MAX	\$ 0.188	\$ 0.194	\$ 0.207



## Noteworthy Developments

- Tender issued for Soma's first 50 MW of 150 MW solar [link](#)
- Camco backing a 25 MW solar plant led by Neo Themis [link](#)
- Africa Investment Contracting is building a 5 MW solar plant [link](#)
- EU and EIB supporting the solarization of 1000 schools and 100 health centers [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Togo



## Objectives

- Install 200 MW of renewable energy capacity by 2030 [link](#)
- Renewables to account for 63% of installed capacity by 2030 [link](#)
- Reach 50% of RE in the energy mix by 2030 [link](#)
- Expand storage capacity to 156 MWh by 2030 [link](#)



## Policy / Regulation

- Non-CIZO licensees faces 5-20% of import duty [link](#)
- Solar products face a VAT rate of 18% [link](#)
- Net metering is in place but not FiT [link](#)



## Electrification Rate

- 70% of the population has access to electricity [link](#)
- Electricity coverage is 90% in urban areas [link](#)
- Aiming for universal access to electricity by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	70.00 MWp
• C&I	<div></div>	6.49 MWp
• MG	<div></div>	0.99 MWp
• SHS	<div></div>	6.04 MWp
• Residential	<div></div>	91.86 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.108	\$ 0.133	\$ 0.090
MAX	\$ 0.261	\$ 0.257	\$ 0.220



## Noteworthy Developments

- AfDB supporting the 62 MWp Sokode Solar plant [link](#)
- AFD and GEAPP backing the development of a 55 MW BESS Project [link](#)
- TBEA begun the construction of the 25 MWp + 40 MWh Dapaong solar plant [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Tunisia



## Objectives

- Develop 1.7 GW of RE capacity by 2027 [link](#)
- Generate 35% of electricity from RE by 2030, and 50% by 2035 [link](#)
- Install 8.53 GW of RE capacity by 2035 [link](#)
- Increase the solar capacity to 1.7 GW by 2030 [link](#)



## Policy / Regulation

- Import duty rate of 30% on solar panels [link](#)
- The standard VAT is 19% , with reduced to 13% and 7% [link](#)
- Net metering exists [link](#) , FiT is available [link](#)



## Electrification Rate

- Total electrification rate stands at 100% [link](#)



## Total PV Installed

• Utility-scale	<div></div>	178.80 MWp
• C&I	<div></div>	84.84 MWp
• MG		0 MWp
• SHS	<div></div>	1.81 MWp
• Residential	<div></div>	234.71 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.026	\$ 0.055	\$ 0.061
MAX	\$ 0.119	\$ 0.157	\$ 0.134



## Noteworthy Developments

- Scatec developing the 120 MW Sidi Bouzid II solar plant, alongside two 60 MW projects currently under construction [link](#)
- Licenses granted to build solar projects totaling 500 MW [link](#)
- EBRD reviewing a loan for Quair's 100 MW Solar Plant [link](#)
- Government launched tender for 2\*100 MW solar plants [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> Rural Electrification Agency



# Uganda



## Objectives

- Add 3,200 MW renewable electricity generation capacity by 2030 [link](#)
- ETP targets 94% biomass-to-renewables transition by 2030 [link](#)
- Reach 52 GW by 2040 through renewable energy and nuclear [link](#)
- Increase generation capacity to 15,420 MW by 2030 and 52,481 MW by 2040 [link](#)



## Policy / Regulation

- No import duty on solar equipment [link](#)
- Zero VAT rate on solar equipment [link](#)
- VAT free imports of specialized solar equipment [link](#)
- Net metering for systems up to 500 KW [link](#) , FiT exists [link](#)



## Electrification Rate

- 57% of the population is electrified [link](#)
- Targets universal electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	74.00 MWp
• C&I	<div></div>	20.73 MWp
• MG	<div></div>	4.42 MWp
• SHS	<div></div>	13.22 MWp
• Residential	<div></div>	65.44 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.070	\$ 0.078	\$ 0.052
MAX	\$ 0.212	\$ 0.182	\$ 0.120



## Noteworthy Developments

- TotalEnergies launched a tender for 2\*20 MW solar plants [link](#)
- Energy America to develop 100 MWp+250 MWh of storage [link](#)
- 24 MWp project under construction by AMEA Power [link](#)
- TotalEnergies developing 120 MW across six sites [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>



# Zambia



## Objectives

- Enhance the share of non hydro renewable energy in the energy-generation mix to 33 % by 2030 [link](#)
- Increase country's installed generation capacity to 10,000 MW by 2030, primarily through renewable energy sources [link](#)
- Develop 3,000 MW of solar capacity by 2030 [link](#)
- At least 200 solar mini-grids operational by 2030 [link](#)



## Policy / Regulation

- Import duty exemption for solar PV products [link](#)
- Solar products are VAT-free [link](#)
- FiT applies to projects of up to 20 MW [link](#)
- Net metering regulation is available [link](#)



## Electrification Rate

- National electricity access has reached 53.6% [link](#)
- Access rates of 80.3% in urban and 34% in rural areas [link](#)
- Aims to achieve universal access to electricity by 2030 [link](#)



## Total PV Installed

• Utility-scale		333.04 MWp
• C&I		40.35 MWp
• MG		3.34 MWp
• SHS		15.94 MWp
• Residential		124.11 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.032	\$ 0.028	\$ 0.028
MAX	\$ 0.176	\$ 0.117	\$ 0.073



## Noteworthy Developments

- Genvision to develop 300 MW + 800 MWh project [link](#)
- Amsons Group and Exergy Africa to develop 1000 MW solar [link](#)
- The govt launched construction of the 100 MW chirundu solar plant [link](#)
- Maamba Energy is planning to add 100 MW to the national grid [link](#)
- CEC reached financial close of 136 MWp itimpi II solar plant [link](#)
- Amsons and Exergy Africa to develop 1000 MW of solar [link](#)

## Key Electricity Institutions

<a href="#">Ministry</a>	<a href="#">Utility Company</a>
<a href="#">Regulator</a>	<a href="#">Rural Electrification Agency</a>



# ZARECON 2026

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# Zimbabwe



## Objectives

- Reach 2,640 MW of renewable energy capacity by 2030 [link](#)
- Add 1 575 MW of solar, 275 MW of bioenergy, 150 MW of small hydropower, and 100 MW of wind [link](#)
- 3.1M households electrified and 70% clean-cooking access by 2030 [link](#)



## Policy / Regulation

- Solar equipment is exempt from import duty [link](#)
- A 15% VAT rate on solar equipment [link](#)
- Net metering exists for systems up to 5 MW [link](#) , No FiT in place [link](#)
- License required for generation below 100 KW [link](#)



## Electrification Rate

- National electricity access rate stands at 62% [link](#)
- Access rates of 83% in urban and 27% in rural areas [link](#)
- Targets to attain universal electricity access by 2030 [link](#)



## Total PV Installed

• Utility-scale	<div></div>	66.86 MWp
• C&I	<div></div>	139.45 MWp
• MG	<div></div>	1.58 MWp
• SHS	<div></div>	1.08 MWp
• Residential	<div></div>	80.45 MWp

Source [AFSIA](#) [GOGLA](#) [EMBER](#)



## Current Tariff Grid Electricity

Source	Residential	Commercial	Industrial
MIN	\$ 0.05	\$ 0.06	\$ 0.06
MAX	\$ 0.25	\$ 0.23	\$ 0.23



## Noteworthy Developments

- Energywise developing 100 MW Runde River solar park [link](#)
- Infracore developing the 30 MW Vungu solar plant [link](#)
- Prospect Lithium Zimbabwe constructing 70 MW solar plant [link](#)
- Afreximbank funding the 1 GW Kariba floating solar project [link](#)
- Zimplats broke ground on its 2nd phase 45 MW solar plant [link](#)

## Key Electricity Institutions

<div></div> <a href="#">Ministry</a>	<div></div> <a href="#">Utility Company</a>
<div></div> <a href="#">Regulator</a>	<div></div> <a href="#">Rural Electrification Agency</a>

## Special Appreciation to Our Valued Peer Reviewers

At the heart of AFSIA's mission is the dedication to creating networks and knowledge-sharing platforms that allow solar stakeholders to quickly connect with partners and access vital information, supporting more effective and efficient business decisions.

AFSIA extends sincere gratitude to the outstanding experts across the continent who generously contributed their time and knowledge to review and enhance the information presented in this year's report. Their insights have been instrumental in ensuring accuracy and depth.

We are proud to spotlight these distinguished individuals and warmly encourage you to reach out to them directly for further expert guidance on specific countries.

Once again, thank you for your invaluable contributions. Your expertise is not only essential to this report but also a cornerstone of AFSIA's mission to advance a sustainable future through solar energy.



**Algeria**

**Adel Baba-Aissa**

Acumen - Investment Director



**Angola**

**Isabel Caravana**

Kotoil Energy - Project Director



**Benin**

**Segbedji Favi**

Egnon Consulting – Project Manager



#### **Botswana**

##### **Robert Hanna**

African Sun Energy - Managing Director



#### **Central African Republic**

##### **Laurene Oumba**

Aptech Africa – Sales & Marketing Associate



#### **Djibouti**

##### **Abdourazak A. Kayad**

University of Djibouti - Associate Research Professor



#### **Eswatini (formerly Swaziland)**

##### **Rodney Carval**

Renewable Energy and Climate Change consultant



#### **Guinea**

##### **Hamidou Drame**

Guilex Avocats – Partner Lawyer



#### **Burkina Faso**

##### **Franck Wanessomde Kabore**

Ministry of Energy, Mines and Quarries – Energy Officer



#### **Comoros**

##### **Farida Ahmed Karim**

UNDP Comoros - Project Manager, Africa Minigrids Programme



#### **Egypt**

##### **Marwa Mansour**

Egyptian Electricity Holding Company - Senior Energy Conservation and Renewable Energy Efficiency Improvement



#### **Ethiopia**

##### **Mikael Alemu**

10 Green Gigawatt for Ethiopia - CEO and Founder



#### **Guinea-Bissau**

##### **Mohamadu Saido Balde**

Ministry of Energy - Director of the Department of Studies, Projects, Strategic Planning and Statistics



#### **Burundi**

##### **Fabrice Hakizimana**

AVSI Foundation - Expert



#### **Democratic Republic of Congo**

##### **Heritier Bagonza**

GL Africa Energy (GLAE) Ltd – Business Development Manager



#### **Eritrea**

##### **Ivie Ehanmo**

Electricity Lawyer - Founder



#### **Ghana**

##### **Herbert Frieze**

Dutch & Co – General Manager



#### **Kenya**

##### **Arthur Oduor**

Central Electricals International Limited - Business Development Manager



## **Liberia**

### **Steven Payma**

Rural and Renewable Energy Agency -  
Business Development Specialist



## **Malawi**

### **Admore Chiumia**

Green Impact Technologies - CEO



## **Mauritius**

### **Omar Abdelhamid**

Gridtech Infrastructure - Business Development  
Executive for MEA Region



## **Namibia**

### **Kleopas Shitaleni**

HOPSOL Africa - Monitoring Engineer



## **Rwanda**

### **Eder Munyampenda**

Sawa Energy – Country Manager



## **Libya**

### **Dr. Basim Belgasim**

Libyan Authority for Scientific Research  
(LASR) - Renewable energy consultant



## **Mali**

### **Aboubacar Maiga**

Africa GreenTec - Responsable  
management and maintenance



## **Morocco**

### **Bouchra Laarabi**

PSES Research Laboratory, ENS – Mohammed V  
University - Researcher + freelance consultant



## **Nigeria**

### **Engr. Timothy Shekarau**

DARES - Project Management Unit Nigeria  
Electrification Project (NEP) – REA - Senior Technical  
Design Specialist (PI & SI)



## **Sao Tome and Principe**

### **Gabriel Lima Maquengo**

Ministry of Infrastructure and Natural  
Resources - Director of Energy



## **Madagascar**

### **Carlos Miro**

GIZ – Chef de projet PERER



## **Mauritania**

### **Abdoullahi Diop**

ITIE Mauritania - Secrétaire Permanent



## **Mozambique**

### **Helena Absalao Macune**

Amer – Executive Director



## **Republic of the Congo**

### **Saint-Cyr Sessegnon**

SANY Group – Senior Key Account  
Manager



## **Senegal**

### **Pierre Seyni THIAW**

Enda energie – Chef de projet



#### **Seychelles**

##### **Shanna Carola**

Public Utilities Corporation -Maintenance Engineer



#### **South Africa**

##### **Rethabile Melamu**

SAPVIA - CEO



#### **Tanzania**

##### **Greyson Onesmo Metili**

Ignite Energy Access – Head of Africa Operations



#### **Tunisia**

##### **Ghada Ammari**

Hopewind - Senior Business Development Manager



#### **Zimbabwe**

##### **Terence Chambati**

Grid Africa – Country Ahead



#### **Sierra Leone**

##### **Mohamed Alhaji Munu**

Sierra Power Renewable Energy (SL) Limited - CEO



#### **South Sudan**

##### **Dr. Mohamed Alhaj**

Terra Energy – Founder & Managing Director



#### **The Gambia**

##### **Ansumana Touray**

TEC Group Gambia - Founder



#### **Uganda**

##### **Andrew Festo Kasule**

Grips Energy - Regional Sales Manager East Africa



#### **Somaliland**

##### **Eng. Sharmaarke Mustafe**

Somaliland Ministry of Energy and Minerals - Deputy Director of Energy



#### **Sudan**

##### **Amna Haroon**

Faas Energy – Managing Director



#### **Togo**

##### **Prof. Yao Azoumah**

KYA-Energy Group – CEO & Founder



#### **Zambia**

##### **Dr. Chilala Kakoma-Bowa**

ZARENA – Strategy & Implementation Lead

# Thanks to AFSIA Members



# Team updates

Presenting the team and new members



John  
CEO



Benjamin  
Director of  
Operations



Josée  
Community  
Manager



Sinazo  
Partnership  
Manager



Salim  
Events  
Manager



Aline  
Market Intelligence  
Manager



Rachel  
Executive  
Assistant



Emery  
Finance  
Manager



Christian  
Community  
Management  
Associate



Rhoda  
Community  
Management  
Associate



Natasha  
Events  
Associate



Merci  
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Bill  
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