

Development of Solar PV in the SADC Region



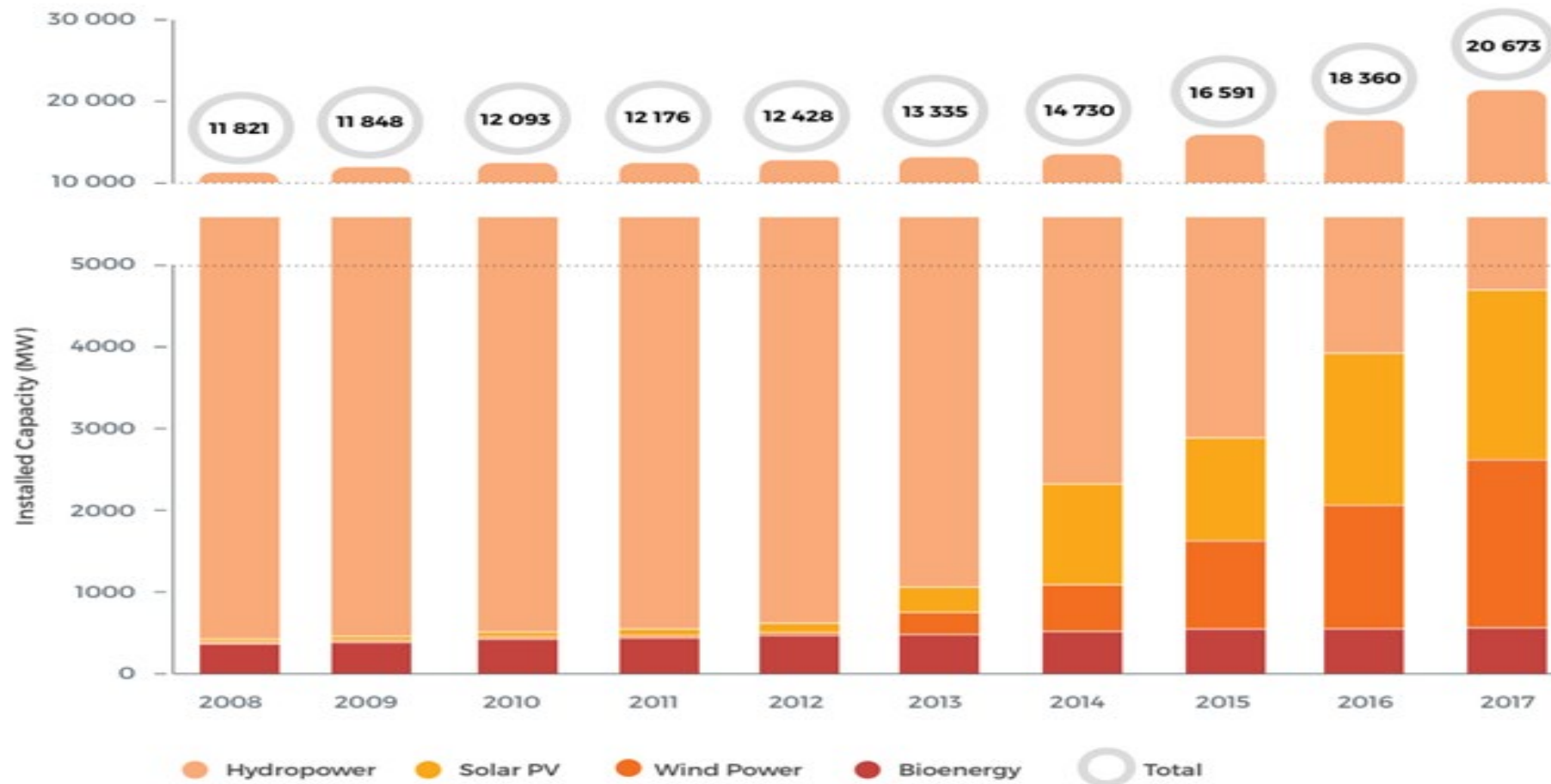
Izaiah Mulenga
Energy Consultant – Nordelglobal
Email: izaiahjr@gmail.com , Tel: +260977998997

CONTENT

- Background
- SADC Solar Potential
- Member States PV Situation
- SADC Energy Instruments
- Challenges


BACKGROUND

Installed Renewable Energy Capacity by Type in the SADC Region, 2008-2017

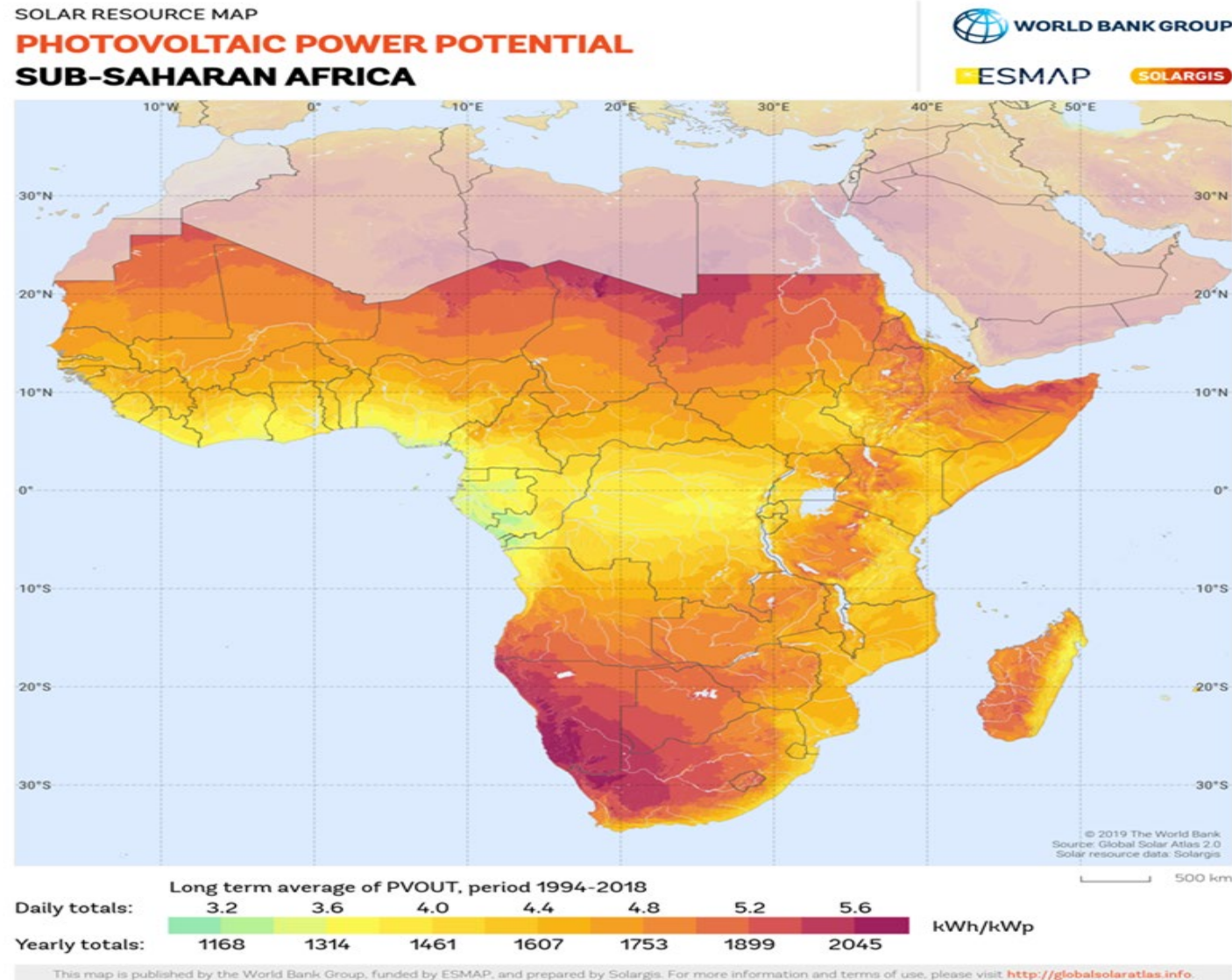


BACKGROUND

Installed Renewable Energy Capacity by Technology in the SADC Region, as of Mid-2018

	Biomass/ waste (MW)	Other bioenergy ⁵ (MW)	Hydropower (MW)	Onshore wind (MW)	Solar PV (MW)	Solar CSP (MW)	Total 2018 (MW)	Total 2015 (MW)	Change 2015/18 (MW)
Angola ¹	–	–	2,415.0	–	13.0	–	2,428.0	878.0	1,550.0
Botswana ²	–	–	–	–	1.3 ²	–	1.3	1.0	0.3
DRC	5.0	–	2,593.0	–	3.0	–	2,601.0	2,416.0	185.0
Eswatini	106.0	–	61.1	–	0.5	–	167.6	138.0	29.6
Lesotho	–	–	77.0	–	0.3	–	77.3	77.0	0.3
Madagascar	0.1	–	174.6	–	2.3	–	177.0	173.0	4.0
Malawi	17.0	–	360.5	–	0.9	–	378.4	369.0	9.4
Mauritius	143.5	5.4	60.7	10.7	27.0	–	247.3	171.0	76.3
Mozambique	10.0	–	2,187.3	0.3	1.3	–	2,198.9	2,187.0	11.9
Namibia	–	–	347.0	5.0	52.5	–	404.5	337.0	67.5
Seychelles	–	–	–	6.0	2.7	–	8.7	6.0	2.7
South Africa	84.0	18.0	3,485.0	2,100	2,392.0	600.0	8,679	4,023.0	4,656.0
Tanzania	19.7	–	593.2	–	–	–	612.9	600.0	12.9
Zambia	43.0	–	2,552.8	–	2.0	–	2,597.8	2,302.0	295.8
Zimbabwe	87.0	–	1,089.0	–	4.0	–	1,180.0	790.0	390.0
SADC	515.3	23.4	15,996.2	2,122	2,502.8	600.0	21,759.7	14,468	6,901.7

SADC SOLAR PV POTENTIAL



Source: Global Solar Atlas 2.0,
Solar resource data: Solargis.

MEMBER STATES PV STATUS

Country	Status
Angola	Angola has kick started its dormant solar sector by deploying several hundred megawatts worth of projects expected within three years. Predictions indicate that nationwide PV capacity will reach 600MW by 2022, up from the 10MW-plus figures recorded this year
Botswana	Botswana Power Corp issued a request for qualification for the development and construction of two PV plants with a combined capacity of 100 MW this year Further the governments of Botswana and Namibia are planning to develop 5 GW of solar capacity over the next two decades.
DRC	The Ministry of Energy and Hydraulic Resources of Democratic Republic of Congo, on May 29 signed a strategic partnership framework agreement for 400MW solar power plant The government of the Tshopo province has signed an agreement with Cat Projects Africa for the 40 MW solar park in DR Congo. The project will be connected to the grid operated by utility Société nationale d'électricité (SNEL) and is intended to improve power supply in provincial capital Kisangani
Eswatini	Eswatini Energy Regulatory Authority recently issued a list of the pre-qualified bidders for a tender for the development of 40 MW of solar generation capacity by 2020. This is still on going
Lesotho	The U.S. Trade and Development Agency (USTDA) has announced that it has awarded a feasibility study grant to Lesotho's independent power producer, One Power Lesotho to conduct a feasibility study relating to a long-planned 20 MW solar power project in the country's Mafeteng district.

MEMBER STATES PV STATUS

Madagascar	<p>Madagascar joined the World Bank's Scaling Solar programme and aims to deploy between 30 MW and 40 MW of solar PV capacity across the country by 2020</p> <p>The Malagasy government announced three PV projects, each with a 5 MW generation capacity which will be built this year. The nation's cumulative installed solar capacity was only 33 MW at the end of last year.</p>
Malawi	<p>Installed Solar PV is 55 MW</p> <p>Solar Home System (SHS) Kick Starter Program – USAID Power Africa</p> <p>Twenty-one international companies submitted bids to develop 70 MW of new solar capacity.</p>
Mauritius	<p>Mauritius had just over 27 MW of installed solar capacity as of mid-2018.</p> <p>A 16 MW grid-tied solar power plant aimed at reducing coal and oil consumption was commissioned early 2019.</p> <p>The country aims to increase renewable energy in the generation mix from 18% in 2015 to 35% by 2025.</p>
Mozambique	<p>The 40MW Mocuba solar power plant in Mozambique was officially inaugurated in August this year</p> <p>The IFC and the country's power utility are planning to build small on-grid solar parks across three to five different sites from 10 MW to 15 MW and are expected to have a collective power output of up to 60 MW.</p>
Namibia	<p>Namibia issued procurement of independent power producer for the development of a 20 mw solar photovoltaic (pv) power plant at khan substation on a build-own operate (boo) basis</p> <p>The Trekkopje solar power plant was recently commissioned. With a capacity of 5 MW, it was built by Sertum Energy Namibia, an independent power producer (IPP). This facility is located on a site that could produce 27 MW.</p> <p>Namibia had 52.5 MW of installed solar capacity as of mid-2018.</p>
Seychelles	<p>Seychelles had 2.7 MW of installed solar capacity as of mid-2018, compared to 0.92 MW at the end of 2014</p> <p>Seychelles will have Africa's first floating solar power plant which will be located in Providence lagoon on Mahé Island and will have an estimated capacity between 3.5 – 4 MW</p>

MEMBER STATES PV STATUS

South Africa	<p>South Africa hosts eight of the ten largest solar plants in Africa</p> <p>South Africa leads the region in developing solar capacity because of its REIPPPP auctioning system. The country was able to commission just under 1,800 MW of solar PV by mid-2017, based on contracts awarded under Bid Windows 1, 2 and 3. Another 405 MW procured for solar PV in Bid Windows 4 was approved in April 2018, with 50 MW of small-scale PV projects still on hold</p> <p>The DoE envisages 114 MW of already-awarded solar capacity will come online next year with a further 300 MW of projects with signed power purchase agreements due to be added in 2021. Another 400 MW of contracted solar capacity is expected to be commissioned in 2022 and the DoE expects another gigawatt of newly-procured capacity in three years' time.</p>
Tanzania	<p>The French development agency AFD and the government of India had committed to financing a 150 MW of solar PV in Kishapu Shinyanga, and a feasibility study for the project was in progress as of mid-2018.</p> <p>Cross Boundary Energy Access (CBEA), Africa's first dedicated fund for commercial and industrial solar power (PV), recently announced its first transaction to finance 60 mini-grids in Tanzania</p>
Zambia	<p>Zambia, with only 2 MW of installed solar capacity as of mid-2018, has opted for a rapid expansion by joining the World Bank's Scaling Solar program and developing a FIT strategy.</p> <p>World Bank Scaling Solar Commissioned 88MW GETFiT with support from KWF Procured 120MW</p>
Zimbabwe	<p>The Infrastructure Development Bank of Zimbabwe had issued a request for proposal to seek partners for the development and construction of seven solar parks, with a combined generation capacity of 235 MW this year.</p> <p>Two solar PV projects had been commissioned: Riverside (2.5 MW) and Notingham (1.5 MW).157 Three larger projects promoted by the government-owned Zimbabwe Power Company were approved but awaiting financing: Gwanda, Insukamini and Munyati 100 MW each</p>

LEGAL, REGULATORY & INSTITUTIONAL FRAMEWORK

Summary Objectives of SADC Energy Instruments for the Electricity Sector

Revised RISDP	SADC Energy Protocol	SADC Energy Cooperation Policy and Strategy	Regional Energy Access Strategy and Action Plan
Energy security	Harmonise national and regional policies	Effective power system management	Electricity associations
Access for rural needs and development	Cooperate in development of energy	Extensive use of hydropower resources	Harmonization of policies, laws and regulations
	Pooling R&D for low cost technologies	Commercialization of public utilities	Investment for regional interconnectors, hydropower development
		Power interconnections to improve reliability and security of supply	Energy planning Infrastructure

CHALLENGES

- Low tariffs, poor project preparation, issues with Power Purchase Agreements, and absent regulatory frameworks stunt investment and financing in the energy sector;
- Pricing and infrastructure hurdles such as grid connections, manufacturing, and quality testing impede development of the region's renewable energy potential.

**THANK YOU FOR YOUR
ATTENTION !!**