

# RENEWABLES IN AFRICA

Where are the large scale (over 5 MW) solar projects in Africa?



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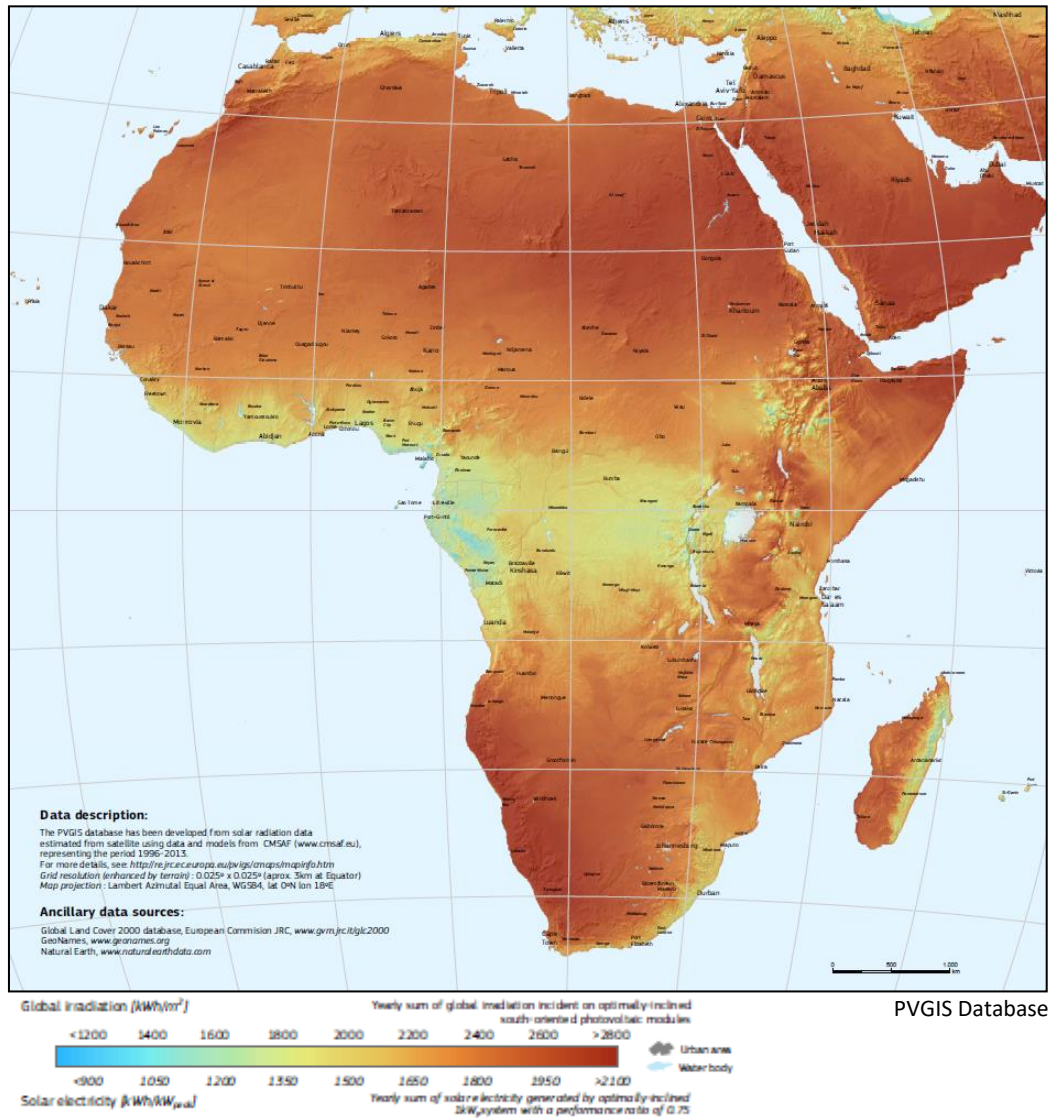
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## 1. Introduction

Solar resources across Africa are fairly well distributed with approximately 85% of the continent's landscape receiving a global solar horizontal irradiation of about 2,000 kWh/m<sup>2</sup>/ year. This is more than twice the average received by the UK that is 900 kWh/m<sup>2</sup>/ year. With the theoretical solar energy reserves estimated at almost 40% of the entire globe, Africa stands as the sunniest continent in the world.



**Figure 1** Distribution of Solar Resources across Africa

The declining solar equipment costs coupled with policy initiatives taken in many countries have boosted the fate of the solar industry. Over the last decade, especially in the past 5 years, there have been an encouraging number of projects that have been completed or in the process of completion.

With its Renewable Energy Independent Power Producer Procurement Programme (REIPPP) launched in 2011, South Africa is the undisputed champion on the Continent with a 48% lion share of projects altogether. The South African Solar PV plants also account for 72.5% of the total active solar

installations to date. The remaining projects are shared between North African countries (26%) and sub-Saharan countries (1.5%).

	ON (MW)	Weight	OFF (MW)	Weight	Total (MW)	Weight
South Africa	1361	72.5%	1527	37.0%	2888	48.1%
Sub-Saharan Africa-South Africa	28.5	1.5%	2148	52.1%	2176.5	36.3%
North Africa	488	26.0%	447	10.8%	935	15.6%
<b>Total (MW)</b>	<b>1877.5</b>	<b>100.0%</b>	<b>4122</b>	<b>100.0%</b>	<b>5999.5</b>	<b>100%</b>
<b>Weight</b>	<b>31.3%</b>		<b>68.7%</b>		<b>100%</b>	

An interesting fact is that if we focus solely on projects that are due for completion by 2019, we are looking in aggregate at approximately 2,150 MW to be built in sub-Saharan African countries with the exclusion of South Africa. This represents 52% or more than half of the total projects (2.6 GW worth of installations) in development or under construction. South African will add 1,527 MW or 37% of the total and countries from North Africa 447 MW or 10% of the total. The next few years are promising to be incredibly busy for the industry in the continent.

Two technologies are deployed, concentrated solar power (or CSP) mainly in the Maghreb and South Africa, and photovoltaics or PV across the continent.

Many programmes are acting as driving forces and contributing to unlock of the potential of Solar: **Power Africa**, the US signature programme of President Obama, **Electric Africa**, initiated by the UK government and the African–EU Renewable Energy Cooperation Programme (**RECP**). All these are aiming to tackle the lack of electricity access faced by more than 640 million of Africans. With many of its companies involved into the market, China is also seen as a key player and with Prime Minister Modi, India is actively developing ties with many African nations.

The sections below give you a better understanding of the geographical distribution of the solar farms and in annexes you will find additional information about technical details, locations, investments and the various players involved.

For comparison purposes, please do remember that a nuclear plant that produces roughly 1 GW of electricity could provide power for approximately 800,000 homes in Africa. So a 100 MW Solar plant could expect to service the equivalent of 80,000 homes, with the average household size in Africa being about 6 people. In some places, depending on the density and the needs of the population, the number of homes serviced could be much higher.

## 2. North Africa

Taking advantage of their geographical locations, countries of Maghreb have sought to harness their abundant solar resources and connect North Africa with Western Europe through major projects like

Desertec and TuNur. While the former fell apart with the advent of the Arab spring, the latter is still being developed.

Algeria, Egypt and Morocco are heavily investing into solar and have all set ambitious targets to reach by the end of the decade or by 2030. Algeria holds the current largest capacity of operational solar farms, 288 MW; followed by Morocco, 180 MW (dominated by CSP technology). The Moroccan Kingdom is developing an impressive solar power complex at Ouarzazate, with the total cost estimated at more than \$9 billion. The first phase, Noor 1, \$841 million investment with \$0.19/kWh PPA price, was completed in February 2016. Noor 2 and 3 are also planned and will add a staggering 350 MW of solar power.



Figure 2 - CSP complex (World Bank image): Noor 1 (Left), Noor 2 & 3 (Right) to be completed in 2017 & 2018.

Egypt is also forging ahead with solar and aiming to provide 20% of generated electricity from Renewables by 2020. To help achieve this objective, a Feed-in Tariff (FiT) scheme has been launched in late 2014. To this date, only 20 MW of Solar CSP are operational and a total of 97 MW of solar PV will be built.

Countries	Solar Target (MW)	Target year	ON (MW)	OFF (MW)	Additional Info
Algeria	12,000	2030	288	0	1 CSP plant (20 MW)
Egypt	2,000	2020	20	97	1 CSP plant (20 MW)
Morocco	2,000	2020	180	350	510 MW CSP @ Ouarzazate

More detailed information can be found in annexe A.

### 3. West Africa

In West Africa, Ghana has clearly taken the lead with the government looking for a target of 5,000 MW of installed generation, including 10% from renewable sources. In April 2016, Ghana's first solar

module manufacturing plant was opened in Kpone, with an annual production capacity of 30 MW. A week later, a Chinese company Beijing Xiaocheng powered a 20 MW plant near Accra, which is the country's biggest operating PV facility to date. In addition to that, the country is currently building the biggest solar plant in Africa, the Nzema Project, 155 MW, with an investment of \$400 million and a FiT price of \$0.20/kWh. After completion the project will represent about 6% of Ghana generating capacity and providing power to 100,000 homes.



Figure 3 - Nzema Solar Plant (image from pv-magazine.com)

With a population of more than 170 million people and a generating capacity of about 5 GW, Nigeria is playing catch up and is taking aggressive steps to launch its solar programme. The country is aiming to reach 1,125 MW by 2020 and multiple projects are currently in discussion.

Other projects in construction in the region could be found in Burkina Faso, Senegal and Sierra Leone who has recently launched a 6 MW solar park.

Senegal recently signed up for the IFC "Scaling Solar" programme, the second country to do so after Zambia (Madagascar is the third country to join).

Countries	Solar Target (MW)	Target year	ON (MW)	OFF (MW)	Additional Info
Burkina Faso	Not known		0	53	
Ghana	Part of Renewables:10%	2020	20	255	Nzema will be biggest solar PV in Africa
Nigeria	1,125	2020	0	675	Big market in development
Senegal	200	2019	0	20	Joined IFC Scaling Solar
Sierra-Leone	Not known			6	Solar Revolution in development

More detailed information can be found in annexe B.

#### 4. East Africa

In East Africa, Kenya has been one of the first countries in the continent to support Renewable Energy. They launched their feed-in tariff scheme since 2008, but did not address solar initially. It

was included later in the 2010 revision. Although at the forefront of the industry, there is no utility scale solar farm in the country that is active as yet. The Garissa plant is being developed and should come online around mid-year in 2017. The only operational site in the region is in fact the Rwamagana plant, located in Rwanda. The 8.5 MW power plant is designed so that, from a bird's-eye view, it resembles the shape of the African continent.



Figure 4 - Nzema Solar Plant (image from cleanleap.com)

It is also known as the fastest solar project in Africa. The \$24 million solar field went from contract signing to construction and connection in just a year, defying sceptics of Africa's ability to realise projects fast.

The other countries that are investing into solar farms are Ethiopia and Uganda. The former is planning to expand its electricity capacity from 55% to 75% and is planning to build 3 plants of 100 MW, with an investment estimated at \$600 million.

The later, Uganda has launched its feed-in tariff in 2013 but mainly micro-hydropower plants and combined heat and power plants up to 20 MW were supported. Solar was added to the policy in 2014 and the 10 MW Soroti Solar plant, the first plant to be developed under the tariff is currently under construction. It is believed that a number of other projects are in the planning stages, like the 4 plants developed by Ergon Solair.

Countries	Solar Target (MW)	Target year	ON (MW)	OFF (MW)	Additional Info
Ethiopia	Not known		0	300	Will expand electricity from 55% to 75%
Kenya	Not known		0	100	Solar included in 2010 FiT revision
Rwanda	Not known		8.5	0	Fastest Africa solar project build in one year
Uganda	Not known		0	510	

More detailed information can be found in annexe C.

## 5. Southern Africa

In Southern Africa and even on the whole continent, South Africa has been the undisputed champion of Renewable Energy. With the REIPP Programme started in 2011, 1,361 MW CSP and PV plants have been installed and another 1.5 GW is expected to be installed by end of 2018. The target is to reach 8,400 MW by 2030. The programme has clearly been beneficial to the industry across the continent.

Zambia is experiencing a very severe power crisis due to the low water levels that was observed at the Kariba dam, which is the main source of hydro-electricity.

The current power crisis has seen the government ordering major mining companies and other large electricity consumers to reduce consumption by up to 25 percent. In this part of Africa, the drought experienced by countries has intensified the problem of load shedding.

Zambia is looking for Solar as an opportunity to respond to the challenge. The country is aiming to install 600 MW of Solar by the turn of 2019 and was the first country to signed up for “Scaling Solar” Programme, a one stop shop initiative launched by the World Bank through its IFC branch, to make privately funded grid-connected solar projects operational within two years and at competitive tariffs.

2 projects are currently planned under the programme and the 45 MW West Lunga National Park PV plant is to date the cheapest solar plant in Africa with a tariff price of \$0.062/kWh.

Countries	Solar Target (MW)	Target year	ON (MW)	OFF (MW)	Additional Info
Zambia	600	2019	0	79	Joined IFC Scaling Solar
Zimbabwe	300	2018	0	150	
South Africa	8,400	2030	1361	1527	REIPPP is main driver

More detailed information about South Africa can be found in annexe D and E. For Zambia and Zimbabwe, information are in annexe F.

## 6. Conclusion

Solar is probably the only renewable source that is widespread across Africa. There is no surprise then to see activities happening in every part of the continent. While South Africa has clearly being the engine of this development, with North Africa assisting in the task, Sub-Sahara Africa is now starting to pay more attention into the sector and pouring in resources. A combination of factors is making Africa one of the most attractive places in the industry at the moment. These factors are energy policy shifts favouring renewables and solar, the various programmes launched by partners of Africa and most likely the most consequential, the significant reduction of solar panels prices.



With the market growing at a fast pace and delivering benefit to communities, local companies should be encouraged to engage with the sector and take full part in what is promising to be a real success Africa could soon be proud of.

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9. Annexe A: Large-scale Solar Farms in North Africa

Region	Countries	Ambition (MW)	When	Projects	Region	Town	Tech	Size (MW)	Developer	EPC	PPA Price	Investors	Funds	Offtaker	Start Time	Status	Population (p) or Home (h) coverage	CO2 offset (tCO2/year)	Comments	
North	Algeria	12,000	2030	ISCC Hassi R'mel	Hassi R'mel	Hassi R'mel	CSP	20	Abener	Abener			€315m	Sonatrach	2011	Operational			22 GW Renewables by 2030: 12 GW for domestic and 10 GW for export	
				14 Solar Plants	Hauts Plateaux		PV	268	SKTM	Yingli Green Energy				\$650m		2015	Operational			Additional 70MW still under construction
	Egypt	2,000	2020	ISCC Kuraymat	South of Cairo	Kuraymat	CSP	20	NREA	Orascom Flagsol				NREA	2011	Operational				
				Solar PV	Ben Ban	Aswan	PV	47	Cairo Solar Farm	TerniEnergia				\$20m		Dec-17	Planned			20% Renewables by 2020 FIT: \$0.118/kWh (households) - \$0.1434 /kWh (Commercial) These projects could be part of 200 MV tender. Part of 1st round of FIT
				Project	Ben Ban	Kom Ombo	PV	50	Shapoorji Pallonji Infrastructure Capital	Sterling & Jones							Planned			
	Morocco	2,000	2020	ISCC Ain Beni Mathar	Ain Beni Mathar	Ain Beni Mathar	CSP	20	Abener	Abener					One	2010	Operational			
				Noor 1	Souss-Massa-Drâa	Ouarzazate	CSP	160	Acwa Power Aries TSK	Acciona Sener TSK	\$0.19/kWh	World Bank EIB Climate Inv. Fund	\$841m	Masen One	Feb-16	Operational	650,000 (p)	242,000	5 sites selected for Ourzazate 42% Renewables by 2020 \$9bn needed Acwa power share 70% and operator is Nomac	
				Noor 2	Souss-Massa-Drâa	Ouarzazate	CSP	200	Acwa Power	Sener	\$0.14/kWh		\$1,100m	One	Sep-17	Planned		533,000	Acwa power share 68% operator is Nomac	
				Noor 3	Souss-Massa-Drâa	Ouarzazate	CSP	150	Acwa Power	Sener	\$0.15/kWh		\$862m	One	Mar-18	Planned			Acwa power share 75% operator is Nomac	

10. Appendix B: Large-scale Solar Farms in West Africa

Region	Countries	Ambition (MW)	When	Projects	Region	Town	Tech	Size (MW)	Developer	EPC	PPA Price	Investors	Funds	Offtaker	Start Time	Status	Population (p) or Home (h) coverage	CO2 offset (tCO2/year)	Comments	
West	Burkina Faso			Zina	Mouhoun	Zina	PV	20	Windiga Energy	Siemens		AfDB	\$50m			Under Construction				
				Zagtouli	Ouagadougou	Ouagadougou	PV	33	Sonabel	Vinci		EIB	\$91m	Sonabel		Under Construction				
	Ghana	Renewables target: 10% ~500 MW	2020	Winneba plant	Winneba	Oyandze	PV	20	Beijing Xiaocheng Company (BXC)				BXC	\$30m	ECG	Apr-16	Operational			BXC might be doubling size of project
				Nzema project	Western region	Aiwiaso	PV	155	Blue Energy		\$0.20 /kWh		\$400m			Oct-16	Under Construction	100,000 (h)		Will represent 6% Ghana generating capacity
				Nyimbale-Sankana	Nyimbale-Sankana	Nyimbale-Sankana	PV	100	Home Energy Africa				\$150m			2018	Planned	80,000 (h)		
	Nigeria	1,125	2020	Abiba Plant			PV	50	Africa Nigeria Quaint Global Energy Solutions					\$100m			Planned	600,000 (h)		FIT: \$0.113/kWh for up to 30 MW 30% of total generation from Renewables by 2030
				Katsina Solar Project	Katsina State		PV	75	Pan Africa Solar		\$0.115/kWh		Pan Africa Solar JCM Capital African Finance Corporation	\$146m			Planned	1,100,000 (h)		Nigeria Bulk Electricity Trading (NBET) signed agreements with 14 contractors to purchase power 1,125MW of solar energy
				Solar Projects			PV	250	Shapoorji Pallonji	Sterling & Wilson						Dec-19	Planned			
				Solar Projects	Yola Kano Birnin		PV	300	Nigus Greenergy Volt Renewables					\$600m		2017	Planned			Will represent 10% of Nigeria generating capacity Nigeria capacity about 4GW
	Senegal	200	2019	Senergy II	Dagana	Bokhol	PV	20	GreenWish	Vinci		AfDB	€25m	Senelec	Oct-16	Under Construction		25,000		
Sierra Leone			Freetown Project			PV	6				AfDB	\$18m			Planned	3,000 (h)				

11. Annexe C: Large-scale Solar Farms in East Africa

Region	Countries	Ambition (MW)	When	Projects	Region	Town	Tech	Size (MW)	Developer	EPC	PPA Price	Investors	Funds	Offtaker	Start Time	Status	Population (p) or Home (h) coverage	CO2 offset (tCO2/year)	Comments		
East	Ethiopia			Solar Projects	Dessie Komboltcha Dire Dawa		PV	300	Green Technology Africa (GTA)				\$600m	Ethiopian Electric Power (EEP)		Planned			Expand Electricity capacity from 55% to 75%		
	Kenya			Garissa Solar plant	Garissa	Garissa	PV	50	Kenya Rural Electrification Authority	China Jiangxi Lakeside Solar	\$0.12/kWh		\$126m		Jul-17	Planned	625,000 (h)		FIT policy since 2008 and 2010 revision includes solar. 20 years from start of PPA Kenya capacity about 2.3 GW		
				Lakeside Solar project	Horna Bay	Lakeside	PV	50	Lakeside Solar			\$0.16/kWh		\$145m	Kenya Power Company		Planned				
	Rwanda			Rwamagana	Rwamagana Solar plant	Agahozo Shalom	PV	8.5	GigaWatt Global	GigaWatt Global				NetherlandsDvp Finance Company Emerging Africa Infrastructure Fund Norfund	\$24m	Rwanda Energy	2015	Operational		Boosted generating capacity by 6%	
Uganda				Soroti Solar Plant	Soroti	Soroti	PV	10	Eren RE Access Energy Group	TSK Group	\$0.17/kWh			Emerging Africa Infrastructure Fund FMO KfW					Under Construction	40,000 (h)	Project to be developped under Uganda's FIT
				4 Solar Plants			PV	500	Ergon Solair	Martifer Solar					UDC		Planned				

12. Appendix D: Large-scale Solar CSP Farms in South Africa

Region	Countries	Ambition (MW)	When	Projects	Region	Town	Tech	Size (MW)	Developer	EPC	Funds	Start Time	Status
	South Africa	8,400	2030	Khi Solar one	Northern Cape	Upington	CSP	50	Abengoa IDC	Abener Teyma		Feb-16	Operational
				Bokpoort CSP	Northern Cape	Groblershoop	CSP	50	ACWA Power Masen	Acciona Sener TSK	\$328m	Dec-15	Operational
				kaXu Solar One	Northern Cape	Pofadder	CSP	100	Abengoa IDC	Abener Teyma	\$891m	Mar-15	Operational
				Xina CSP	Northern Cape	Pofadder	CSP	100	Abengoa	Abengoa	\$880m	Dec-16	Under Construction
				Ilanga 1	Northern Cape	Upington	CSP	100	Emvelo Cobra	Cobra		Mar-17	Under Construction
				Kathu Solar Park	Northern Cape	Kathu	CSP	100	Engie	Acciona Sener		Dec-18	Under Construction
				Restone Solar Thermal Power	Northern Cape	Postmasburg	CSP	100	ASWA SolarReserve	ACWA		Mar-18	Contracting

13. Appendix E: Large-scale Solar PV Farms in South Africa

Region	Countries	Ambition (MW)	When	Projects	Region	Town	Tech	Size (MW)	Developer	EPC	Funds	Start Time	Status	Capacity Factor (%)	
South	South Africa			SlimSun Swartlan Solar Park	Western Cape		PV	5	SlimSun	Juwi		2013	Operational	20	
				RustMo1 Solar Farm	North West		PV	7	RustMo1	Juwi		Nov-13	Operational		
				Aurora-Rietvlei Solar Project	Western Cape		PV	9	Solairedirect				Dec-14	Operational	20
				Vredental Solar Power park	Western Cape		PV	9	SolaireDirect				Jul-14	Operational	20
				Upington Solar PV	Northern Cape		PV	9	Enel Green Power	TerniEnergia			Jul-14	Operational	
				Konkoonsies Solar	Northern Cape	Pofadder	PV	10	BioTherm Energy	Juwi			Mar-14	Operational	22
				Aries Solar PV	Northern Cape		PV	10	BioTherm Energy	Juwi			Mar-14	Operational	22
				Greefspan Solar PV Plant	Northern Cape	Douglas	PV	10	AE-AMD	SunPower			Apr-14	Operational	
				Mulilo RE Solar PV De Aar	Northern Cape	De Aar	PV	10	Gestamp Solar				Aug-14	Operational	
				Herbert PV Plant	Northern Cape	Douglas	PV	20	AE-AMD	SunPower			Apr-14	Operational	
				Mulilo RE Solar PV Prieska	Northern Cape	Copperton	PV	20	Gestamp Solar	ABB			Oct-14	Operational	
				Soutpan Solar Park	Limpopo	Vivo	PV	28	Erika Energy (SunEdison)	Izingwe			Jul-14	Operational	20
				Witkop Solar Park	Limpopo	Polokwane	PV	30	Core Energy (SunEdison)	Izingwe			Sep-14	Operational	23
				Dreunberg Solar Project	Eastern Cape		PV	33	Scatec Solar	Scatec Solar			Dec-14	Operational	24
				Touwsrivier CPV Solar Project	Western Cape	Touwsrivier	PV	36	Soitec	GroupFive			Dec-14	Operational	
				Linde Solar Project	Northern Cape		PV	37	Scatec Solar	Scatec Solar			Jun-14	Operational	25
				PowerDroogfontein	Northern Cape	Kimberley	PV	45	Mainstream Renewable Power	Mainstream Renewable			Apr-14	Operational	20
				De Aar Solar Power	Northern Cape	De Aar	PV	49	Globeleq	Siemens			Apr-14	Operational	20
				Boshoff Solar Park	Free State		PV	57	SunEdison	SunEdison	\$247m		Oct-14	Operational	24
				Letsatsi PV Project	Free State	Bloemfontein	PV	64	SolarReserve	Cobra	\$293m		May-14	Operational	26
LetsediPV Project	Northern Cape	Postmasburg	PV	64	SolarReserve	Cobra	\$293m		May-14	Operational	26				
Sishen Solar Facility 1	Northern Cape		PV	74	Building Energy	Acciona Aveng			Dec-14	Operational	24				

Appendix E: Large-scale Solar PV Farms in South Africa (Continued)

Kalkbult	Northern Cape		PV	75	Scatec Solar	Scatec Solar		Sep-13	Operational	21
Solar Capital De Aar	Northern Cape	De Aar	PV	75	Solar Capital			Aug-14	Operational	25
Solar Capital De Aar 3	Northern Cape	De Aar	PV	75	Solar Capital	Sterling & Wilson		Feb-15	Operational	22
Kathu Solar Energy Facility 1	Northern Cape		PV	75	Building Energy			Aug-14	Operational	27
Jasper Solar Energy Project	Northern Cape		PV	75	SolarReserve	Lead EPC	\$260m	Nov-14	Operational	21
Mulilo Sonnedix Prieska PV	Northern Cape	Copperton	PV	75	Mulilo Renewable	Juwi	R1.3 bn	Jul-16	Operational	
Paleisheuvel Solar Park	Western Cape		PV	75	Power	TerniEnergia		Apr-16	Operational	
Tom Burke Solar Park	Limpopo		PV	60	Enel Green	TerniEnergia		Mar-16	Under Construction	23
Adam Solar PV 2	Northern Cape	Hotazel	PV	75	Power			Aug-16	Under Construction	25
Pulida Solar Park	Free State	Jacobsdal	PV	75	Enel Green Power			Aug-16	Under Construction	
Mulilo Prieska PV	Northern Cape	Copperton	PV	75	Mulilo Renewable	Juwi		Nov-15	Under Construction	
Aggeneys Solar Project	Northern Cape	Pofadder	PV	40	BioTherm Energy			Aug-16	Contracting	28
Sirius Solar PV Project One	Northern Cape	Sirius	PV	75	Scatec Solar				Contracting	
Konkoonsies Solar 2	Northern Cape	Pofadder	PV	75	BioTherm Energy			Feb-17	Contracting	28
Solar Capital Orange	Northern Cape	Loeriesfontein	PV	75	Solar Capital			Mar-18	Contracting	
Dyason's Klip 2	Northern Cape	Upington	PV	76	Scatec Solar				Contracting	
2	Northern Cape		PV	28	Building Energy				Planned	
Droogfontein 2 Solar	Northern Cape	Kimberley	PV	75	SunEdison			Jul-18	Planned	
Dyason's Klip 1	Northern Cape	Upington	PV	75	Scatec Solar				Planned	
De Wildt Solar	North West	Brits	PV	50	SunEdison			Nov-17	Uncertain	
Greefspan Solar PV Plant 2	Northern Cape	Douglas	PV	55	SunEdison			Nov-18	Uncertain	
Bokamoso Solar	North West	Leeudoringstad	PV	68	SunEdison			Nov-17	Uncertain	
Zeerust Solar Park	North West	Zeerust	PV	75	SunEdison			Nov-17	Uncertain	
Waterloo Solar Park	North West	Vryburg	PV	75	SunEdison				Uncertain	

14. Appendix F: Large-scale Solar Farms in Zambia & Zimbabwe

Region	Countries	Ambition (MW)	When	Projects	Region	Town	Tech	Size (MW)	Developer	EPC	PPA Price	Investors	Funds	Offtaker	Start Time	Status	Comments
South	Zambia	600	2019	Mosi-oa-Tunya PV park	Zambezi River	Zambezi River	PV	34	Enel Green Power	TerniEnergy	\$0.074/kWh	IFC	\$40m	ZESCO	2017	Planned	Zambia's IDC will retain 20% minority stake Current Energy Crisis in the country
				West Lunga National Park PV plant	Mufumbwe	Kabompo River	PV	45	First Solar Neoen		\$0.062/kWh	IFC		ZESCO	2017	Planned	Cheapest Solar plant in Sub-Sahara Africa. First project under IFC "Scaling Solar" Program 25Years PPA
	Zimbabwe	300	2018	Marondera Solar Project	Marondera	Marondera	PV	50	De Green Rhino Energy				\$113m		Sep-17	Planned	Final full capacity expected to be 150 MW
				Gwanda Solar	Gwanda	Gwanda	PV	100	Intratrek Zimbabwe	CHINT Electric		Export-Import Bank of China		\$202m		2018	Planned