

Africa's Top Twelve Wind Farm Projects

Powering a Continental Energy Transition

November 2025

Executive Summary

Africa's renewable energy transition has achieved notable scale, with utility-scale wind farms now supplying millions of households and attracting significant global capital. According to the Global Wind Energy Council (GWEC) Global Wind Report 2025, the Africa & Middle East region recorded an exceptional 107% year-on-year growth in new wind capacity in 2024. This surge reflects rising investor confidence, the maturation of regulatory frameworks, and the successful delivery of large-scale wind assets across multiple countries.

This report highlights the top 12 wind farms in Africa, which collectively represent over 3.37 GW of installed wind capacity, powering more than 20 million people and reducing millions of tonnes of CO₂ annually.

Let's proceed to look at the top 12 wind farms, including their location, size, developer/owner, offtaker, PPA¹,² turbines used, commissioning year, impact, and an overview.

1. Power Purchase Agreement (PPA)



1.0 Detailed Project Profiles

S/N	Wind Farm Name	Location	Size	Developer/Owner	Offtaker	PPA (year)	Financing	Turbines	Year	Impact	Overview
1	Red Sea Wind Energy	Egypt	650 MW	ENGIE (35%), Orascom Construction (25%), Toyota Tsusho (20%), Eurus Energy (20%)	Egyptian Electricity Transmission Company (EETC)	25	Japan Bank for International Cooperation (JBIC), European Bank for Reconstruction & Development (EBRD), Nippon Export and Investment Insurance (NEXI), Sumitomo Banking Corporation (SMBC), Société Générale and Norinchukin Bank	Goldwind GW165-6MW models (6 MW each, 97.5 m hub height) and Goldwind GWH182-7.5MW models (7.5MW each, over 97.5 m hub height)	2025	Supplies electricity to more than 1 million Egyptian households and offsets over 1.3 million tonnes of CO ₂ annually	The Red Sea Wind Project is Africa's largest onshore wind farm. Its strategic placement in the Gulf of Suez wind corridor utilises some of the region's most consistent wind resources. By combining Japanese, Chinese, and European investment and engineering, the project reinforces Egypt's ambition to become a renewable energy hub in North Africa. Its support of local employment, grid stability, and import substitution for fossil fuels further strengthens Egypt's energy transition story.

S/N	Wind Farm Name	Location	Size	Developer/Owner	Offtaker	PPA (year)	Financing	Turbines	Year	Impact	Overview
2	Amunet Wind Power Plant	Egypt	500 MW	AMEA Power (60%), Sumitomo Corporation (40%)	EETC	25	International Finance Corporation (IFC), Japan Bank for International Cooperation (JBIC), Standard Chartered Bank	Envision EN-171 (6.5 MW each; 77 turbines; 171 m rotor diameter and 94.5 m hub height)	2025	Supplies electricity to over 500,000 households, helping Egypt advance its 42% renewable energy target by 2030 while offsetting over 1.4 million tonnes of CO ₂ emissions each year	Situated adjacent to the Red Sea Wind site, Amunet contributes to creating a wind generation corridor exceeding 1 GW in Egypt. By introducing high-capacity Chinese turbines and leveraging Egypt's strong regulatory framework, the project demonstrates diversification in technological sourcing and investor confidence. The timing of its commissioning signals Egypt's rapid uptake of large wind assets.
3	Lake Turkana Wind Power	Kenya	310 MW	Anergi Turkana Investments Limited, Osprey Renewables Africa, CFP UK Holdings Limited, and Sandpiper Ltd.	Kenya Power & Lighting Company (KPLC)	20	Nederlandse Financierings-Maatschappij voor	365 units of Vestas V52 units (850 kW each) with a hub height of 44 m	2018	Provides over 14% of Kenya's total electricity generation and supplies power to approximately 1 million households. It mitigates CO ₂ emissions, which is estimated to be around 740,000 tonnes of CO ₂ on average, annually	Lake Turkana stands out for its bold scale and remote logistics: its 438 km transmission line to Suswa is among Africa's longest for grid-linking a wind farm. The project created thousands of jobs, strengthened local infrastructure and reinforced Kenya's position as East Africa's renewable leader.

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4	Tarfaya Wind Farm	Morocco	301 MW	TAREC (Nareva Holding & ENGIE)	ONEE (Morocco's national utility)	20	Sponsor equity and Moroccan banks	131 Siemens Gamesa units (2.3 MW each, hub height of 100 m)	2014	Supplies electricity to over 1.5 million homes and it will save over 900,000 tonnes of CO ₂ per year	Tarfaya pioneered Morocco's utility-scale wind sector and continues to deliver strong performance. Its coastal wind resource ensures high capacity-factor operation, and it remains central to Morocco's strategy of sourcing over 52 % of electricity from renewables by 2030.
5	Khobab & Loeriesfontein	South Africa	280 MW (combined)	Lekela Power (Mainstream Renewable Power & Actis consortium)	Eskom	20	Lekela Power (now Infinity Power)	122 units of Siemens SWT-2.3-108 units, 61 per site (2.3 MW each, hub height of 99 m)	2017	Combined electricity supply to over 240,000 households and over 1 million tonnes of combined CO ₂ emissions avoided each year	These twin wind farms are a testament to South Africa's REIPPPP success story. With high wind speeds in the Northern Cape and effective local content programmes, the projects delivered strong operational performance and community benefits. They exemplify how repeated procurement rounds can achieve scale and localisation.

S/N	Wind Farm Name	Location	Size	Developer/Owner	Offtaker	PPA (year)	Financing	Turbines	Year	Impact	Overview
6	Ras Ghareb (262.5 MW)	Egypt	262.5 MW	Ras Ghareb Wind Energy (RGWE), a consortium owned by ENGIE (40%), Toyota Tsusho/Eurus Energy (40%), and Orascom Construction (20%).	Egyptian Electricity Transmission Company (EETC)	20	Japan Bank for International Cooperation (JBIC), Sumitomo Mitsui Banking Corporation, Société Générale, Nippon Export, Commercial International Bank, and Attijariwafa Bank	125 units of the G97 model, rated at 2.1MW with a hub height of 71 m	2019	Supplies electricity to over 500,000 households and is estimated to save over 400,000 tonnes of CO ₂ per year.	As Egypt's first privately financed wind IPP, the Ras Ghareb 262.5 MW project laid the groundwork for subsequent gigawatt-scale installations in the region. Its success legitimised Egypt's wind procurement model and helped attract major investors for later projects, such as the Red Sea and Amunet.
7	West Bakr Wind Farm	Egypt	250MW	Lekela Power	Egyptian Electricity Transmission Company (EETC)	20	European Bank for Reconstruction & Development (EBRD), Overseas Private Investment Corporation (OPIC), International Finance Corporation (IFC)	96 units of SG 2.6-114 turbines rated 2.6MW with a hub height of 63 m	2022	Supplies electricity to over 350,000 households and offsets around 550,000 tonnes of CO ₂ emissions annually	West Bakr adds modern capacity to Egypt's already strong wind portfolio. Its financing and development reaffirm Egypt's appeal to repeat investors and reflect the maturity of its BOO model and grid infrastructure in the Gulf of Suez corridor.

S/N	Wind Farm Name	Location	Size	Developer/Owner	Offtaker	PPA (year)	Financing	Turbines	Year	Impact	Overview
8	De Aar Wind Farm Complex	South Africa	244 MW	China Longyuan Power Group; Mulilo Renewable Energy	Eskom	20	China Longyuan Power Group; Mulilo Renewable Energy	163 Units of Guodian United Power Technology UP86/1500 turbines rated 1.5 W each with a hub height of 80 m	2017	Supplies enough clean energy to power over 400,000 households and offsets over 620,000 tonnes of CO ₂ a year	The De Aar complex illustrates the scalability of South Africa's wind sector. Leveraged grid access and proven technology deliver industrial benefits alongside energy generation. The projects demonstrate the success of the REIPPPP in attracting independent power producers (IPPs) and strengthening the Northern Cape as a hub for renewable energy.

S/N	Wind Farm Name	Location	Size	Developer/Owner	Offtaker	PPA (year)	Financing	Turbines	Year	Impact	Overview
9	Taiba N'Diaye Wind Farm	Senegal	158.7 MW	Mainstream Renewable Power / Lekela Power	SENELEC	20	DFC/OPIC, Eksporkreditfonden (EKF), and private equity	46 units of Vestas V126 (3.45 MW each), a hub height of 117 m	2021	Supplies electricity to over 2 million people, expands national generation by over 15% and offsets around 300,000 tonnes of CO ₂ emissions annually.	As West Africa's largest wind project, Taiba N'Diaye positions Senegal as a leader in regional clean energy. Investment, engineering and community outreach combine in an exemplary model of how emerging-market wind farms can deliver social, economic and environmental value.
10	Kangnas Wind Farm	South Africa	140 MW	Mainstream Renewable Power / Lekela Power Consortium	Eskom	20	US\$260 million under REIPPPP Bid Window 4	61 units of Siemens Gamesa SWT-2.3-108 units (2.3 MW each) with a hub height of 115 m	2020	Supplies electricity to over 155,000 households and offsets over 550,000 tonnes of CO ₂ annually	Kangnas was the first Bid Window 4 wind project in the Northern Cape to reach commercial operation, achieving a strong level of local content (45%+) and industrial participation. Its construction and performance provide a benchmark for future renewable-energy projects in South Africa and the broader region.

S/N	Wind Farm Name	Location	Size	Developer/Owner	Offtaker	PPA (year)	Financing	Turbines	Year	Impact	Overview
11	Jeffreys Bay Wind Farm	South Africa	138 MW	Globeleq, Mainstream Renewable Power, Thebe Investment Corporation	Eskom	20	Thebe Investment Corporation, Enzani Technologies, Usizo Engineering, Globeleq, Mainstream Renewable Power and Old Mutual)	60 units of Siemens 2.3 MW units with a hub height of 80 m	2014	Supplies electricity to over 100,000 households and displaces over 420,000 tonnes of CO ₂ annually	One of South Africa's first utility-scale wind farms under the REIPPPP, Jeffreys Bay established the credibility of the country's wind IPP model. With strong operations, local equity participation and community development, it remains a respected asset in the African wind-energy landscape.
12	Gouda Wind Farm	South Africa	138 MW	Aveng & Acciona Energia joint venture	Eskom	20	~\$260 million under REIPPPP	46 units of AW100/3000 turbines of ACCIONA Windpower technology (3MW each) with a hub height of 100 m	2015	Supplies electricity to over 200,000 homes and offsets over 406,000 tonnes of CO ₂ annually	Gouda is distinguished for introducing locally manufactured concrete turbine towers, promoting South Africa's renewable energy industrial ecosystem. Its success underlines how localisation and technology transfer can enhance the value-chain benefits of large-scale wind investment.

2.0 Key Takeaways

1. These twelve projects alone contribute over 3.37 GW of installed capacity, serving more than 20 million people.
2. North Africa (particularly Egypt) and Southern Africa (South Africa) dominate the continent's wind-farm deployment.
3. Large-scale wind success is underpinned by stable PPAs, mature procurement frameworks (e.g., South Africa's REIPPPP³), and integrated financing from international development banks.
4. Localisation of manufacturing, community development and job creation are now intrinsic features of major wind projects, evident in projects like Gouda and Kangnas.

3.0 Looking Ahead

Between 2025 and 2030, GWEC forecasts indicate that Africa will install an additional 1.6 GW of onshore wind capacity in 2025 alone, with full growth potential spanning multiple gigawatts annually. In total, 25 GW of new capacity is expected to be added in Africa and the Middle East between 2024 and 2030, with 17 GW (69%) coming from Africa.

Strategic focus will shift to grid integration, cross-border power trade, and storage solutions. Countries currently trailing in wind deployment (notably West & East Africa) will attract greater investment as developers seek diversification and new markets. For Nigeria, aligning institutional

frameworks with these proven continental models presents a tangible pathway to becoming a meaningful wind player.

4.0 Conclusion

The twelve wind farms profiled here represent more than infrastructure; they represent Africa's capacity to conceive, construct and operate large-scale renewable energy projects. Their success provides a clear model for countries seeking to participate in the global wind energy transformation. As Africa's wind capacity grows, the continent is poised to harness its vast technical potential into real-world power, jobs, and decarbonisation outcomes.

2 Renewable Energy Independent Power Producer Procurement Programme (REIPPPP)

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