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Power surge: 2023 saw a threefold jump in SA's private sector renewable energy projects

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news24

The private sector registered a record number of generation projects for their own use in 2023, most of them were solar PV.

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South Africa's private sector in 2023 registered about 4 490MW of renewable energy projects – nearly three times as much as the year before.

The growth is linked to a regulatory reform that dropped licensing requirement for generation projects.

Most projects were registered in the Northern Cape, followed by the Western Cape and Eastern Cape.

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Last year, South Africa's private sector registered approximately 4 490MW of renewable energy projects – nearly three times as much as in 2022.

These private generation projects, which include mostly solar PV and wind power, undertaken in 2023, dwarf the meagre 134MW registered in 2021 - 33 times more.

This is according to information from the **National Energy Regulator of South Africa** (Nersa). Generation facilities are required to be registered with the energy regulator.

The growth in private renewable energy is reflective of the impact of a regulatory reform that, from 2022, dropped the requirement for generation facilities to obtain a licence. The licensing requirement lengthened the timelines for projects to be implemented.

This intervention was made to ease pressure on the national power system by allowing for the accelerated rollout of energy generation alternatives for businesses and industries, this as the country faces an ongoing energy crisis. Load shedding **was at its worst in 2023.**

Projects still have to register with Nersa, which is a much shorter process.

Nersa's database shows that most of the projects registered in 2023 rely on solar PV - which converts sunlight into electricity. The second-most prevalent technology is wind.

In a post on social media platform X (formerly Twitter), Gaylor Montmasson-Clair, senior economist at the Trade and Industrial Policies (TIPS), noted that a handful of large wind projects - these are greater than 100MW - were registered in 2023, leading to a greater share of wind power than in 2022.

Two of the projects that were registered in 2023 were solar PV combined with battery energy storage.

While solar PV dominated the generation projects, two other projects reliant on a renewable fuel - bagasse were also registered. The projects linked to RCL Foods Sugar and Milling operations in Mpumalanga. Bagasse is the remaining material after crushing sugarcane or sorghum; it is used as a fuel in energy generation.

"Four hundred and five projects were registered in total in 2023, including 18 projects over 100MW and 12 projects between 50MW to 100MW. Not surprisingly, most projects (316) are small-scale embedded generation, below 1MW, almost all (313) are based on solar PV systems," said Montmasson-Clair.

The Northern Cape had the most projects registered in 2023; this is followed by the Eastern Cape and the North West, Montmasson-Clair's analysis showed. "Together, they accounted for 58% of the generation capacity registered in 2023," he said.

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So, as pointed out to me by @LameezOmarjee (thank you!), @NERSA_ZA has updated some of the data for previous years: data for 2021 Q4 (+48.6MW) as well as for 2022 Q4 (+5 MW) have been amended.
For accuracy (and transparency), here are the (very) slightly updated graphs 😃

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But Montmasson-Clair warned that the lack of grid capacity would impact the market, potentially "slowing down or even halting" developments in some provinces.

Insufficient grid infrastructure has already impacted the rollout of renewables in South Africa. In 2022, a lack of grid capacity in the Western Cape and Eastern Cape meant **23 wind projects could not be awarded** preferred bidder status in Bid Window 6 of the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

According to Eskom, about 14 200km of new transmission lines have to be built by 2032. **Its latest assessment of available grid capacity** shows that there is none left in the Eastern Cape, Western Cape and Northern Cape.

Eskom has secured funding for the expansion of transmission infrastructure in the short term (or three to four years). But the government is hoping to tap into funding from the Just Energy Transition partnership to fund further expansion, along with other solutions like potentially partnering with the private sector.

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The country's draft Integrated Resources Plan (IRP) – the blueprint for energy planning – also acknowledges the need for grid expansion to connect more generation projects.

The plan itself also recognises that the business community and others will rely on their own energy projects in the coming years.

It projects that by 2030, 6 300MW of generation projects will be added for own use, including solutions like rooftop solar. In reality, this could be higher, given that there are more than 10 000MW of these projects already in the pipeline.

The Department of Mineral Resources and Energy's (DMRE) director-general Jacob Mbele shared that the renewable energy capacity expected to be added by the private sector in coming years has also affected the government's plans to procure more renewable energy for the national grid. He was speaking at a briefing on the IRP where government's low allocations for renewables were questioned.

The IRP shows that as much as 3 615MW of new solar PV capacity should be added to the grid, bringing the total to 5 900MW. It also sees 4 468MW of new wind power projects to be commissioned, bringing the total to 7 900MW by 2030.

Table 2: Emerging Plan from Horizon One Analysis

	Coal	Gas – IPP Programme	Gas - Eskom	Dispatchable Capacity	Nuclear	Hydro	Pumped Storage	CSP	Solar PV	Wind	Hybrid IPP Programme	Distributed Generation	BESS – IPP Programme	BESS - Eskom	Unserved Energy (TWh)
Current Base (MW)	38 800	1 005	2 825	-	1 860	1 600	2732	500	2 287	3 443	-	5 000	-	20	
2024	720							100			150	900		199	13.06
2025	720	1 220							2 115	644	476	900	513	141	7.63
2026										140		900			7.66
2027		1 000								684		900	2 000 / 615		4.55
2028		1 000	3 000						500			900	615		0.22
2029									500	1 500		900			0.25
2030		1 000		1 376					500	1 500		900			0.27
Additional New Capacity (MW)	**1 440**	**4 220**	**3 000**	**1 376**				**100**	**3 615**	**4 468**	**626**	**6 300**	**3 743**	**360**	

Installed Capacity
Capacity under construction
Capacity procured
New Capacity
Distributed Generation Capacity for own use
Unserved Energy, preferred as low as possible

The proposed energy mix until 2030.

Supplied DMRE

This is much less than the **50GW to 60GW of renewable energy required by 2030**, recommended by a study commissioned by the Presidential Climate Commission.

Government defended its fewer allocations for renewables in the IRP. Mbele said that the forecasted lower energy demand impacts the number of generation facilities required – including renewables. Furthermore, new gas projects and delayed decommissioning of coal-fired power stations have also affected the new generation capacity required from renewables.

While the allocations for renewables in the IRP are found wanting, in the sub-Saharan Africa region, South Africa still leads the deployment of renewables.

The International Energy Agency (IEA), **in its latest outlook for the renewables market**, released this week, shows that South Africa accounts for nearly half the new additions of renewable energy capacity in the region.

"While solar PV and wind make up nearly 80% of new additions across the market, this mainly reflects additions in South Africa, which is responsible for the vast majority," the IEA said. South Africa's public procurement programme for renewables – or the REIPPPP as it is known – as well as the expansion of solar PV at residences and businesses are identified as the main growth drivers.

In 2023, the **government introduced tax incentives** for households to install rooftop solar PV and also expanded an existing tax incentive for businesses to opt for renewables to ease pressure on the national grid.

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The IEA also acknowledges that the public procurement programme for renewables has not been without challenges.

For example, projects in Bid Window 5 of the REIPPPP took a long time to reach financial close, so they have been delayed. **The 25 preferred bidders of this procurement round** were first announced in October 2021, and only 12 had reached financial close by November 2023.

The 12 projects have started construction – which will add 1 159MW to the grid from 2025, according to the DMRE.

As for Bid Window 6 of the REIPPPP, six projects were named preferred bidders in December 2022, and they are still finalising requirements before legal agreements and financial close can be reached.

In December, the **government launched Bid Window 7 of the REIPPPP,** looking to add 5 000MW of renewable energy to the grid.

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