

South Africa's Utility Scale Wind & Renewable Energy Industry: Key Data as of October 2020

National Development Plan: Vision 2030

By 2030, South Africa's transition to an environmentally sustainable, climate-change resilient, low-carbon economy and just society will be well under way:

Wind Industry

- Integrated Resource Plan 2019 (IRP 2019) released in October 2019 with a wind allocation of 14.4 GW determined up to 2030.
- Technology price developments and steep downward price trends contributed to make wind even more competitive.
- Due to its value proposition, wind power has taken a larger share of the planned renewable energy (RE) investments to date.
- The IRP 2019 is the national electricity infrastructure development plan which is based on least-cost electricity supply and demand balance, considering security of supply and the environment, the aim is to minimize negative emissions and water usage in the generation of electricity.
- The promulgated IRP 2010–2030 identified the preferred generation technology required to meet expected demand growth up to 2030.
- Wind technology has attracted significant investment for the development of projects in the country. The total investment (total project costs), of all projects under construction and projects in the process of closure, is R209.7 billion of which R80.6 billion is for onshore wind Independent Power Producers (IPPs).
- IPP-Office (IPP-O) commits to commencing the 5th Bid Window by December 2020 or during the first quarter of 2021.
- Risk Mitigation Independent Power Producer Procurement Programme (RMIPPP) 2000MW technology agnostic Request for Proposal issued in 2020. The 2000MW should be live by December 2021.
- The active wind IPPs have committed to create 11358 job year opportunities for SA citizens during the construction phase.
- The 22 wind IPPs that have successfully reached commercial operations to date have reported 2723 job years for SA citizens.

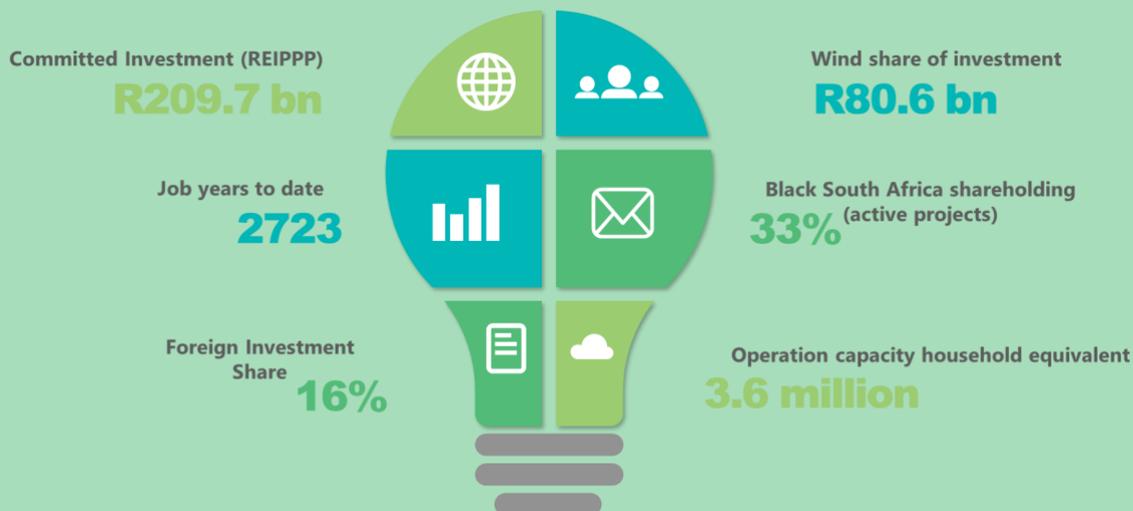
Sources:

Independent Power Producers Procurement Programme (IPPPP): An Overview, As at 31 March 2020;
REIPPPP focus on wind, As at 31 March 2020;
Integrated Resource Plan 2019
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- 23 projects with a capacity of 2026MW were scheduled to have reached commercial operations, by the end of March 2020. Actual achievement has been 22 projects delivering 1980MW (98% of the scheduled plan and a shortfall of 47MW)
- Over a 12-month period which ended in March 2020 the operational wind projects have reduced CO2 emissions by 6.4Mtons which already 53% of the total 12.1Mtons annual P50 projection for wind IPPs.

Wind Socio- economic Development and Enterprise Development Stats

- IPPs plan to spend 0.6% of their revenue on enterprise development, over the 20-year operational life.



- **R1.2 billion** contribution has been realised for socio-economic development.
 - **40.4%** spent on education, R312.0 million has been provided as support to 1123 education institutions from the year 2015 to end of June 2020.
 - **22.3%** spent on social welfare
 - **4.5%** spent health care
 - **9.3%** spent on general administration
 - **23.5%** enterprise development
- Enterprise development and social welfare are the areas that have received the second highest share of the contributions to date.
- Future forecast is at approximately R360 million average per year, up to 2035

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All Renewable Energy Industry

- It is envisaged that by 2030, the electricity generation mix is set to comprise of
 - 33364MW (42.6%) coal,
 - 17742MW (22.7%) wind,
 - 8288MW (10.6%) solar photovoltaic (PV),
 - 6830MW (8.7%) gas or diesel,
 - 5000MW (6.4%) energy storage, 4600MW (5.9%) hydro,
 - 1860MW (2.4%) nuclear and;
 - 600MW (0.8%) concentrating solar power (CSP).
- A total of 18 000MW of new generation capacity has been committed to in the IRP2019.
- Black South Africans hold 33% of the shares across the complete supply chain (for the 91 projects in BW1, BW2, BW3, BW3.5 and BW4). Local communities hold 9% equity in the IPPs of BW1, BW2, BW3, BW 3.5 and BW4.
- The IRP2019 calls for 37696MW of new and committed capacity to be added between 2019 and 2030 from a diversified mix of energy sources and technologies as ageing coal plants are decommissioned.
- The South African power system consists of the generation options, which are 38 GW installed capacity from coal, 1.8 GW from nuclear, 2.7 GW from pumped storage, 1.7GW from hydro, 3.8 GW from diesel and 3.7 GW from renewable energy.
- Traditional power delivery business model is being challenged by newer technological developments that are related to energy storage systems. Battery storage is complementary to smart grid systems and renewable energy technologies. More RE can be harnessed to address the availability impact of RE.

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