

SAWEA

South African Wind Energy Association

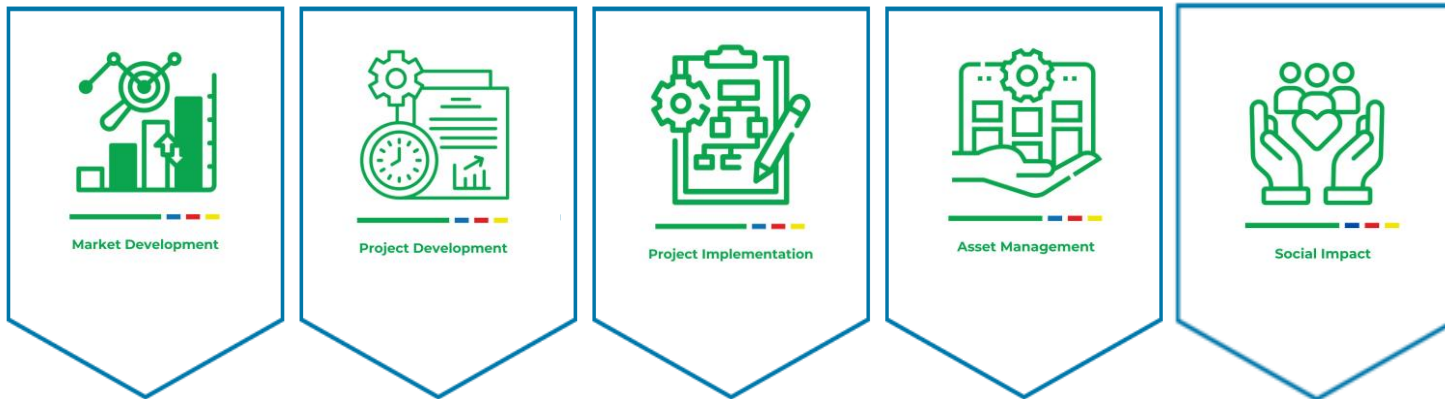
BRIEFING: Portfolio Committee on Electricity and Energy

Niveshen Govender
SAWEA CEO

2024

WHO WE ARE

SAWEA is a member-based not-for-profit industry association advocating for the accelerated growth of wind energy in South Africa. We aim to promote a better policy environment to sustain a thriving wind industry and support local participation and beneficiation.



140

We currently have 140 members across the wind energy value chain, including IPPs, Developers, Wind Farm Companies, Consultants, Investors, Logistics, Research & Academia.

SA WIND ENERGY ACHIEVEMENTS



36
wind energy
projects procured



3442 MW
installed capacity



46480
GWhs of Wind Energy
Contributed to the
National Grid



3.6mil
ave. households
powered annually



22 985
job yrs
82% in construction



38.8 Mton
CO2 emissions
avoided



R89,6 Billion
invested in
wind energy



70%
reduction of wind
energy cost from
1.88c to 58c



84%
domestic
investment



33%
black SA
shareholding



R24billion
47%
of project value
spent locally



R898mil
SED and ED
initiatives

Total global wind power capacity is now **up to 1TW**, helping the world avoid over 1.2 billion tonnes of CO2 annually⁽¹⁾

Wind power technical benefits to power systems are crucial for a sustainable transition to clean energy

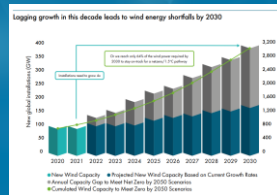
Increase in Wind Powered Green Hydrogen Projects

Increase in Hybrid Projects

Offshore wind accelerating growth

GLOBAL PERSPECTIVE

Overall lagging growth during 2020-2030 – if continued, Paris Climate Accord targets will not be met



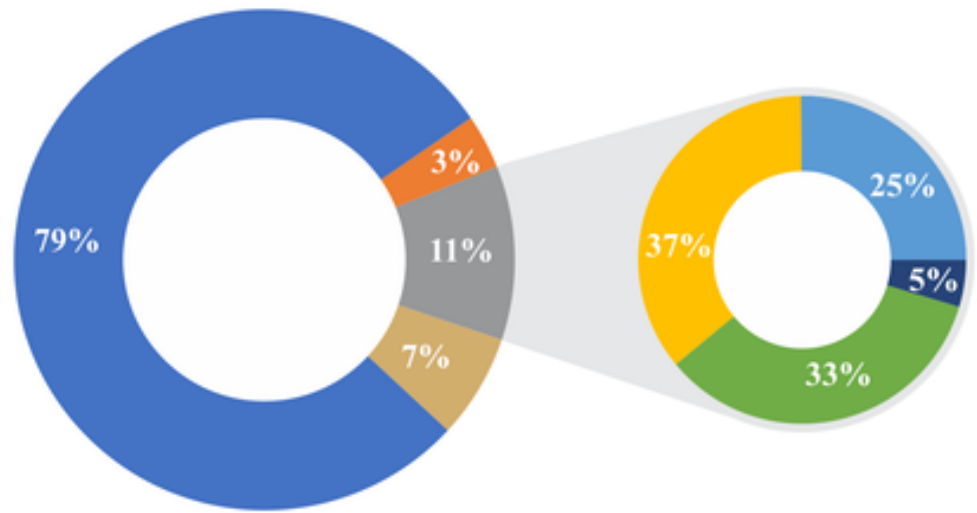
Global supply chain recovering slowly

Africa being an attractive investment destination for Wind Energy

South Africa representing 30% of Africa's Wind Energy Installed Capacity and development pipeline.

2030 OUTLOOK - IRP 2019

INSTALLED CAPACITY 2018

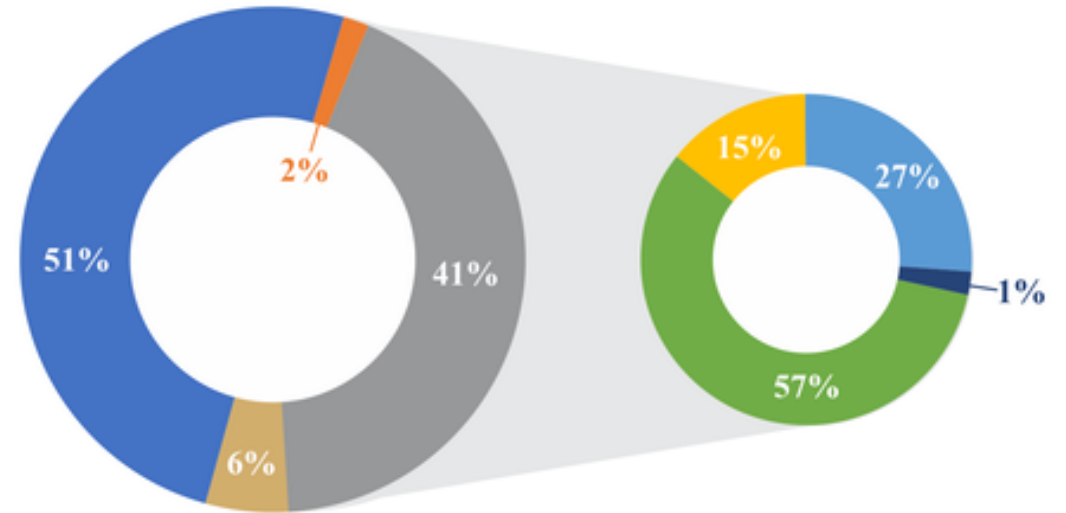


■ Fossil Fuels ■ Nuclear
■ Renewables ■ Other

■ Solar PV ■ CSP
■ Wind ■ Hydro

*Fossil Fuels includes Coal & Natural Gas / Diesel.
*Other includes Cogeneration, Biomass, & Landfill.

IRP TARGET BY 2030



■ Fossil Fuels ■ Nuclear
■ Renewables ■ Other

■ Solar PV ■ CSP
■ Wind ■ Hydro

*Others includes Storage (Pumped Storage).

Public Procurement

2010 -2019



Launch of **Bid Windows 1 - 4**

3442MW procured, constructed and operational

5 years with no signed PPAs (2015 – 2019)

2020



RMIPPPP: Launched in 2020 to urgently bring new generation onboard

2 Hybrid projects with Wind Energy under construction totaling **150MW** of wind energy

2021



BW5 launched resulting in 1608MW of wind procured

12 wind projects procured, 6 in construction (**784MW**). 6 have not reached FC (824MW)

Aggressive Market conditions, global supply chain challenges

2022



BW6 launched with 4.1GW of wind bids submitted and no wind procured

23 wind projects bid, 0 procured

Grid constraints in wind resource-rich areas

2023



BW7 launched

No new wind energy procurement

8 wind projects submitted totalling 1692.4 MW bid

NOTE: 1.3GW of privately procured wind projects in construction.

2024



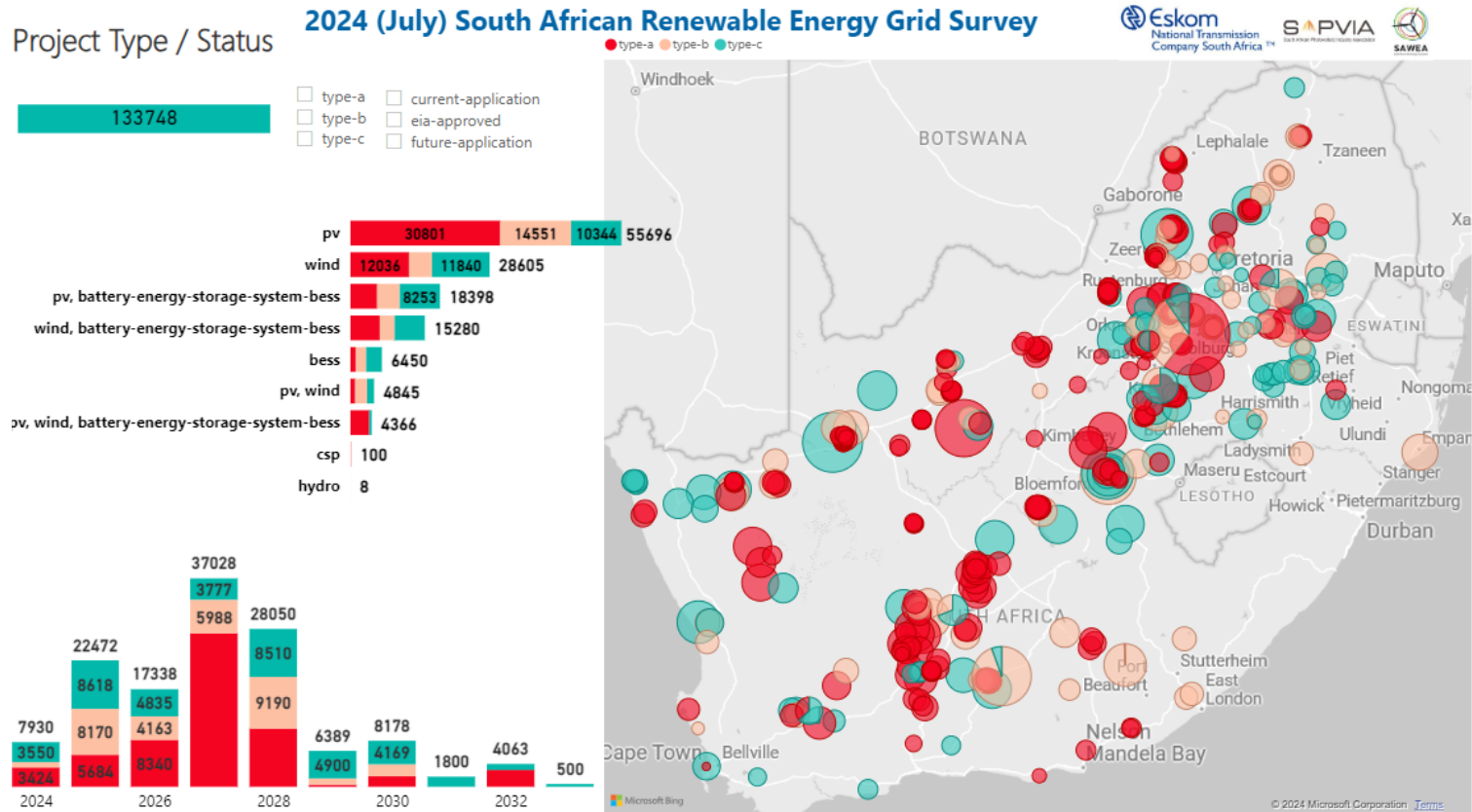
BW7 awaiting preferred bidder announcement

PROJECT DEVELOPMENT PIPELINE - SA

South African RE Grid Survey 2024

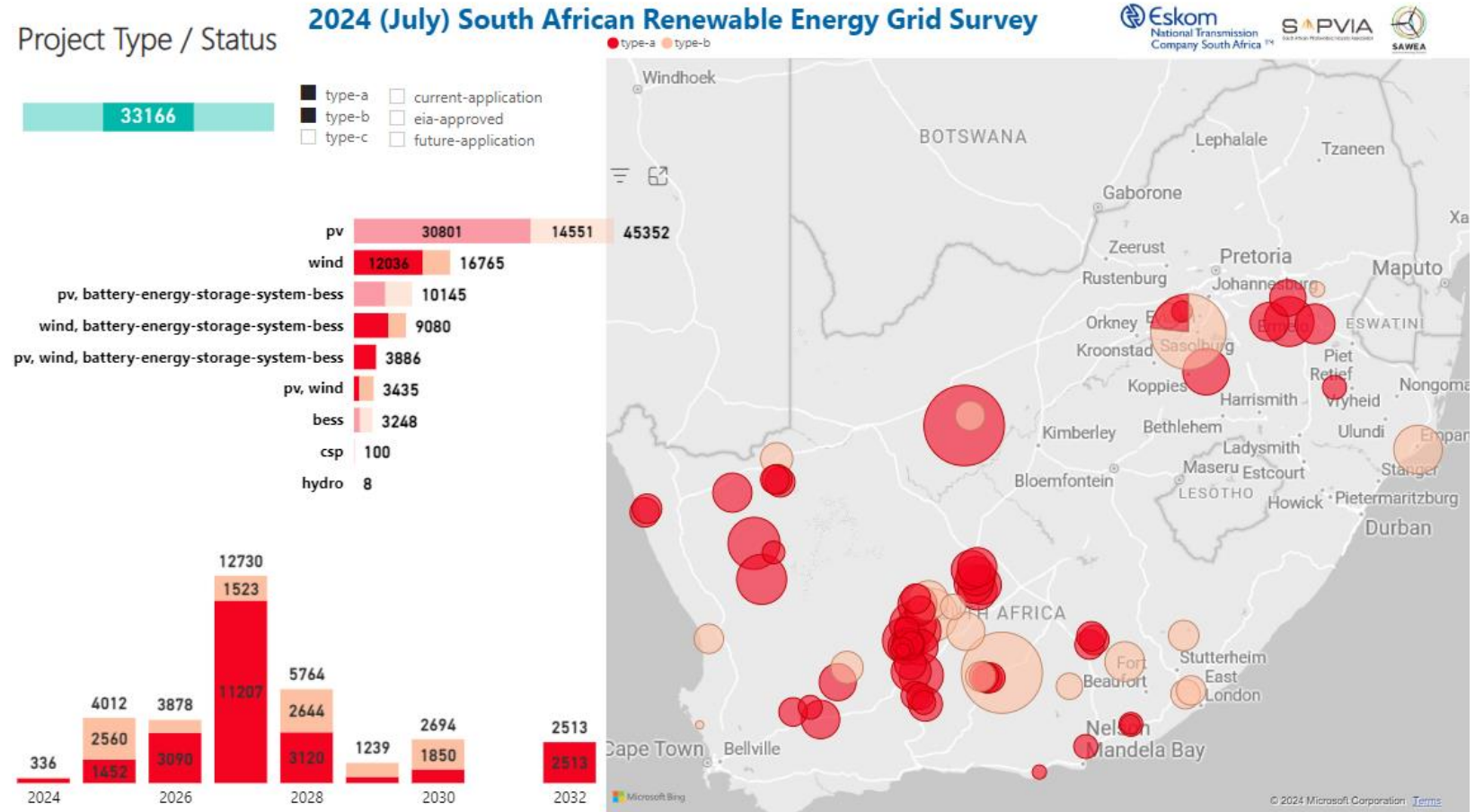
Total 53 096 MW of Wind Projects in SA

Type of Project	South Africa
Pure Wind Projects	28 605 MW
Wind + Battery Storage	15 280 MW
Wind + PV	4 845 MW
Wind + PV + BESS	4 366 MW
Total	53 096 MW



PROJECT DEVELOPMENT PIPELINE - SA

Wind projects which could be developed in the short term:
33 166MW of projects in the next 3-5 years



KEY CHALLENGES



In South Africa, the market also experiences its own challenges.

1.

Lack of certainty on Grid Capacity, Access and Allocation in wind resource rich areas

2.

Pending Policy Reform in Regulatory Environment

3.

Logistics in the construction of new projects

4.

Supply chain challenges are still affecting operating assets.

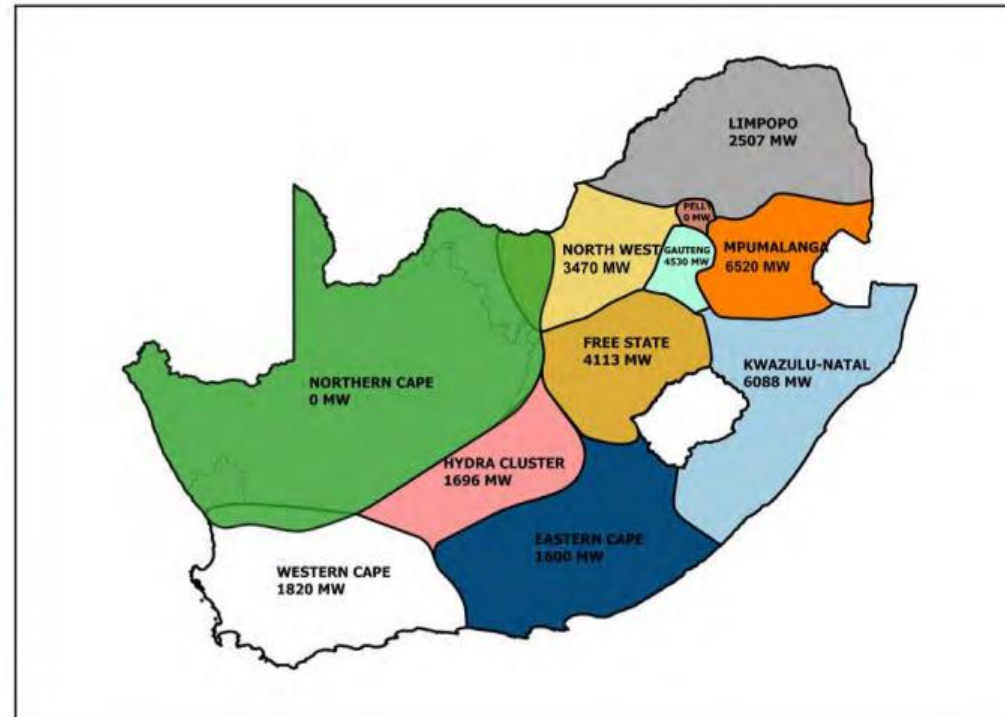
5.

Skilled workforce:
The availability of a ready and able workforce with the necessary training and skills for the wind industry.

Grid Access – GGCA 2025

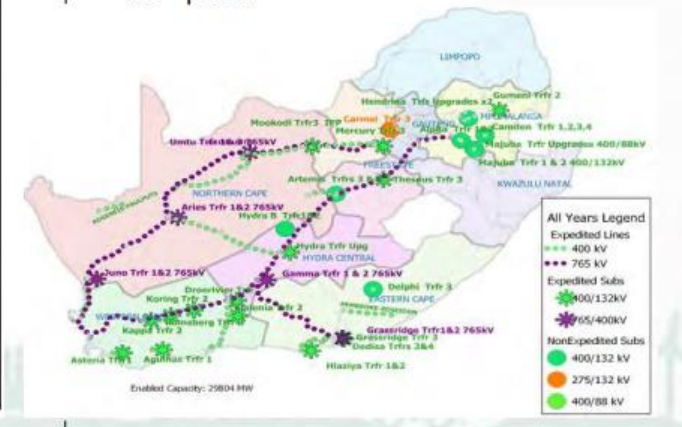
By accepting a reasonable share of no more than 10% of curtailment, 3 470 MW of additional wind generation can be connected to the grid almost immediately, with 2 680 MW in the Western Cape and 790 MW in the Eastern Cape.

MW of new generation capacity that can be added based on grid availability



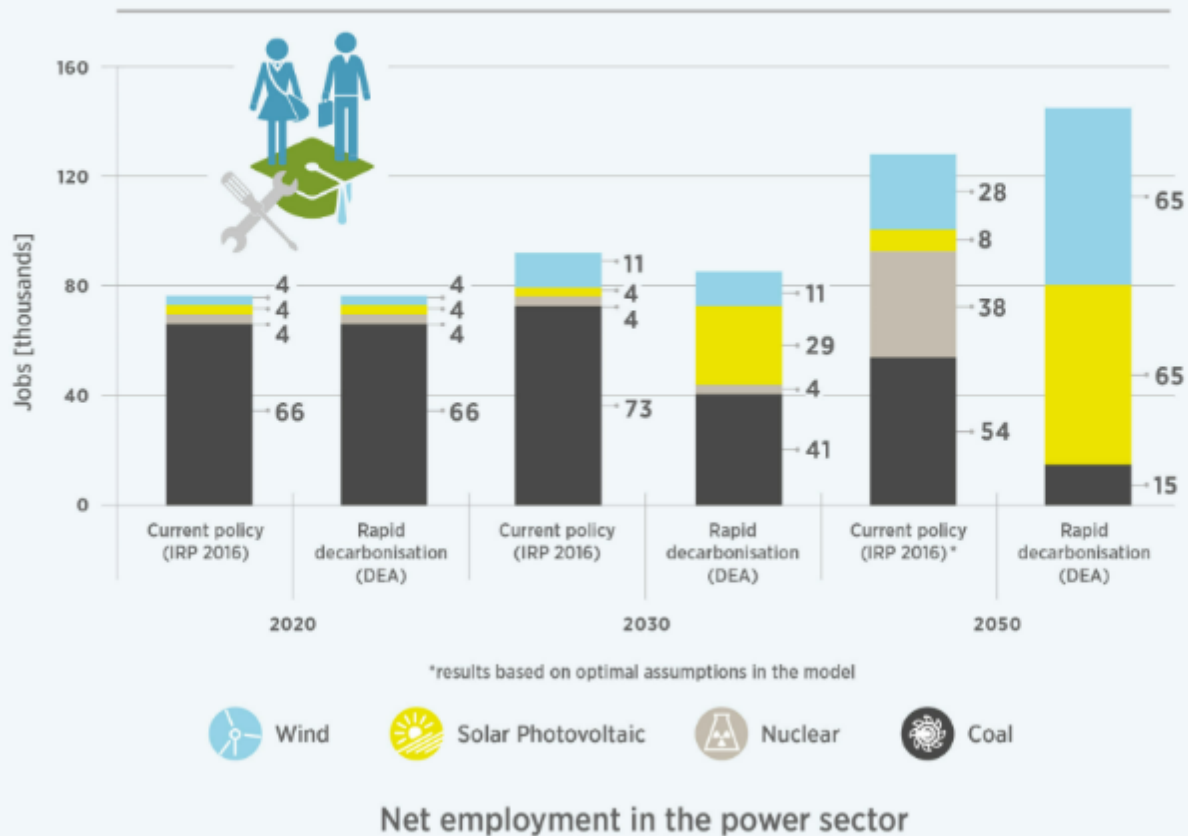
Insights

- Grid availability per province as per the Generation Connection Capacity Assessment 2024
- Capacity reserved for REIPPP Bid Window 5 and 6 as well as RMIPPPP.
- Development of the Transmission Grid is as per the TDP 2023-2032
- Estimated new transmission lines total more than **14 000 km** and more than **170** transformers in the period



Skills and Job Creation Opportunities

Decarbonising South Africa's power sector can create **145 000** net jobs by **2050**



Industrialisation Opportunities



TIPS supports policy development through research and dialogue. Its areas of focus are industrial policy, trade and regional integration, sustainable growth, and a just transition to a sustainable inclusive economy

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WWF South Africa is working towards lasting positive outcomes for people and nature in the places where we work and from the priority environmental challenges we focus on

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INSIGHTS INTO THE WIND ENERGY VALUE CHAIN IN SOUTH AFRICA



OPPORTUNITIES IN SOUTH AFRICA'S WIND ENERGY VALUE CHAIN

The path for more electricity generation in South Africa, especially more renewable energy (RE), is likely to result in a significant increase in wind energy projects across the country. This could in turn drive the local demand for wind turbine components and related services needed for development and operation of wind plants.

WHAT IS NEEDED TO PRODUCE WIND TURBINES?

Manufacturing and assembly materials include aluminium, cement and steel to name but a few of the ones that go into the different components in a wind turbine. The infographic on the next page shows the stages of the value chain and where the opportunities for job creation and developing a local wind energy industry.

WHAT IS THE STATE OF SOUTH AFRICA'S WIND ENERGY MARKET?

Of the main components in a wind turbine, only the towers, transformers and cable cabling are currently made in South Africa.

HOW CAN SA SUPPORT LOCAL WIND ENERGY GROWTH?

1. Create an industrial support to better support local manufacturers. This may include improved access to capacity structured concessional finance.
2. In tower manufacturing, where present capacity is at a distinct shortage over steel, consider a local special economic facility close to a cluster of wind plants to reduce transport and logistic costs.
3. Explore the development of roll manufacturing facilities that could produce towers for several original equipment manufacturers (OEMs).
4. Produce local steel and aluminium products with correct specifications.
5. Promote local production of gearboxes and roll-conveyors, building on existing capabilities and experience in fixing gearboxes.
6. Train and professionalise local staff to fulfil technical roles in the value chain.



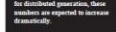
WIND ENERGY UPTAKE

The Integrated Resource Plan (IRP) predicts that by 2030 the electricity generation mix is to comprise 25%–27% RE of wind energy. A more ambitious IRP would result in an increase in wind energy demand.

Through the IRP2022, by December 2025:

- More than 6 000 MW has been allocated to private sector bidders across a variety of RE technologies, principally in wind and solar.
- 3 200 MW of wind energy has been procured through 34 projects, of which 31 were operational.
- The average project size is 95.1 MW.
- To meet the 14 000 MW of new capacity indicated in the 2022 IRP by 2030, South Africa will need approximately 3 000 new large wind turbines with about 15 000 blades.

From August 2022 and the amendments to the Electricity Regulation Act (offering the following incentives: a 10% tax credit from 1 MW to 100 MW), to the end of September 2023, a total of 149 MW of wind-based generation capacity had been procured with the national energy regulator. The total investment of the total investment of the remaining allocated distributed generation, these numbers are expected to increase in monthly.



November 2023

Manufacturing Localisation Potential in Renewable Energy Value Chains

Renewable Energy Localisation Potential

Prepared by BMA

Authors: Justin Barnes, Meghan King
O'Neill Marais, Sean Ellis, and Dylan

November 2023

Manufacturing Localisation Potential in Renewable Energy Value Chains

Wind Energy Localisation Potential

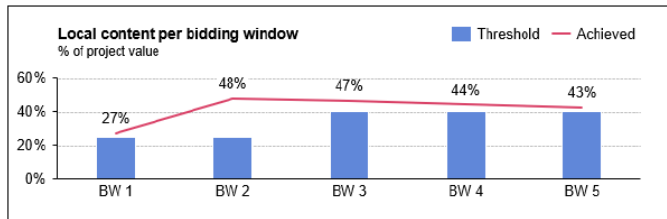
South African Renewable Energy Masterplan (SAREM)

An inclusive industrial development plan for the renewable energy and storage value chains by 2030

Final Draft prepared for the Executive Oversight Committee (EOC)
December 2023

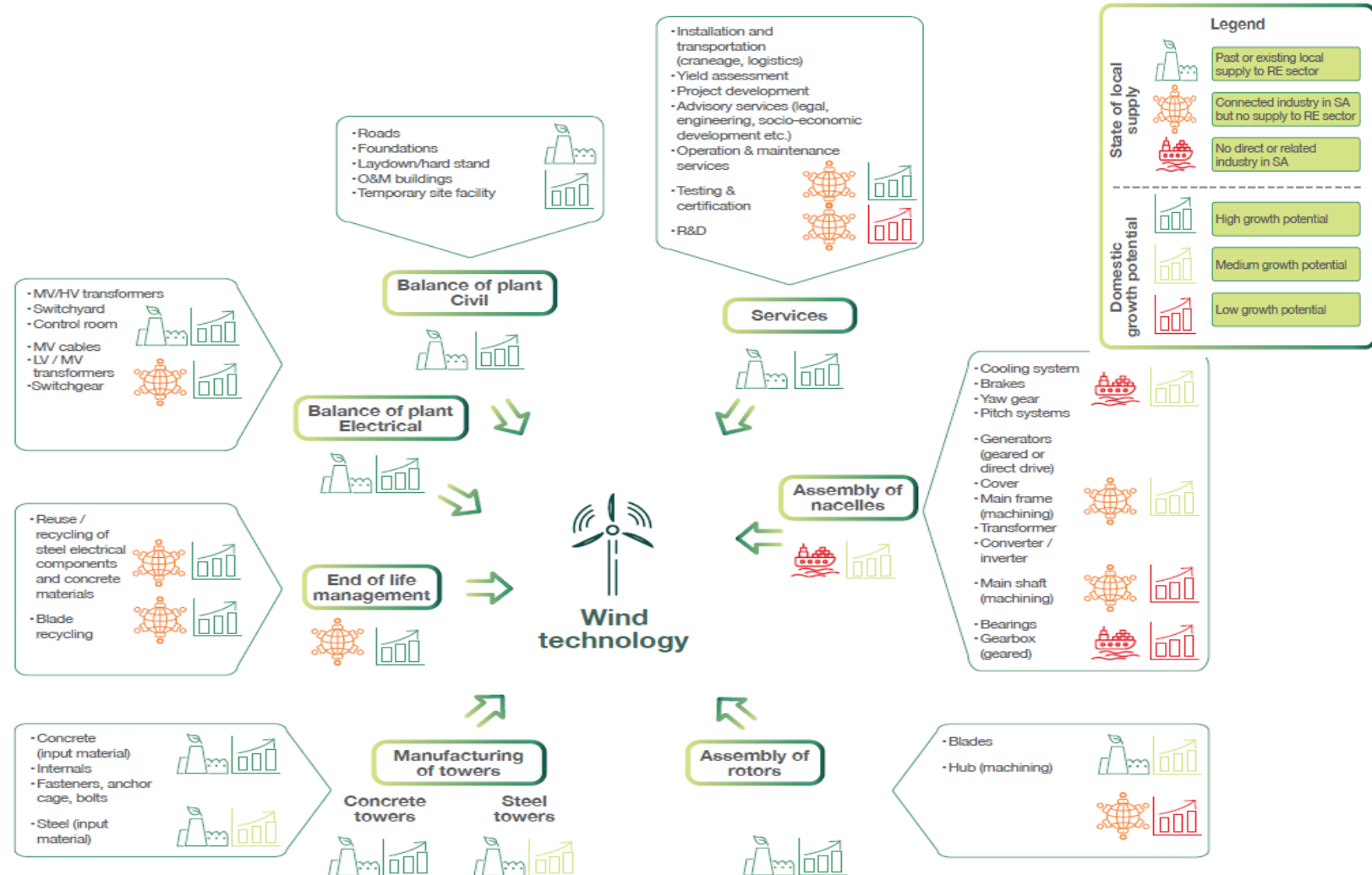
Local Content Opportunity Mapping

Figure 11: Percentage of value localised through the REIPPP



Existing Manufacturers to Support

Transformers	Towers
Zest WEG	GRI Towers
ACTOM Power Transformers	Concrete Units
Powertech Transformers	Nordex/WBHO Copperton
SGB-SMIT POWER MATLA	DCD Wind Towers (Closed)



Key Considerations

Wind projects
which could be
developed in the
short term:

**33 166MW of
projects in the next
3-5 years**

- 1) **Grid Capacity – access through curtailment in the short term and intense transmission infrastructure development in the long term**
- 2) **Consistent Demand from both public and private markets informed through IRP**
- 3) **Clear and transparent rules for grid connection from Eskom/NTCSA**
- 4) **A reformed public procurement programme**
- 5) **An investable market including fast and more efficient permitting processes for:**
 - 1) **Approval of sites**
 - 2) **Environmental impact assessments**
 - 3) **General permitting**
- 6) **Incentives for localisation such as:**
 - I. **Tax incentives,**
 - II. **Research and development incentives**
 - III. **Government assisted financing mechanisms for SMMEs**
- 7) **Focus on Skills Development**



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Thank you

