

WINDABA

7-8 NOVEMBER 2018
CAPE TOWN, SOUTH AFRICA

Investment for an integrated power transition

South Africa's IPP Procurement Programme



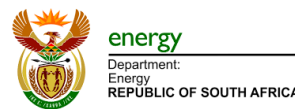
SOUTH AFRICA'S
PREMIER WIND ENERGY
CONFERENCE & EXHIBITION

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South Africa's IPP Procurement Programme is informed by the global, regional and local policy context



Source: IPP office presentation, 2018





Policy and planning context

National Targets

IRP 2010

2019 Target:
19,694 MW " New Build
6,325 MW from RE sources

NDP / MTSF

Electricity reserve margin 2019
Target: 19% from baseline of 1%

Outcome 6.
2019 Target:
100,000 MW from a baseline of 44 000
MW

"...Introduce IPPs in support of electricity
security of supply"

2019 target:
At least 2 major power stations and
7,000 MW renewable energy deals
"Commission at least 7,000 MW of
renewable energy by 2020"
2019 Target: 5,000 MW

Ministerial Determination

- 13,225 MW from Renewable Energy sources
- 1,500 MW Solar Park
- 6,250 MW designated from coal-fire plants (Including cross boarder coal)
- 1,800 MW Cogeneration
- 3,726 MW of Gas-Fired power plants
- 2,609 MW of imported hydro

SIP 1, 8, & 9

Implementation of the IRP 2010 amongst
other Initiatives

SIP 1:
Unlocking the Northern Mineral belt:
Infrastructure such as Energy

SIP 8:
2019 target: 6,725 MW
RE through IPPs by 31 March 2019

SIP 9:
electricity Generation to support Socio-
economic Development in line with IRP

DOE, Strategic Plan

Strategic Goals

Goal 1:
Security supply. To ensure that energy
supply is secure and demand is well
managed

Goal 2:
Infrastructure. To facilitate an efficient,
competitive and responsive energy
infrastructure network.

Goal 3:
Regulation and competition. To ensure
that there is improved energy regulation
and competition.

Goal 4:
Universal access and transformation.
To ensure that there is a efficient and
diverse energy mix for universal access
within a transformed energy sector.

Goal 5:
Environmental assets. To ensure that
environmental assets and natural
resources are protected and continually
enhanced by cleaner energy technol-
ogies.

Programmes 2,4,5 &6

IPP Office Planning

APP

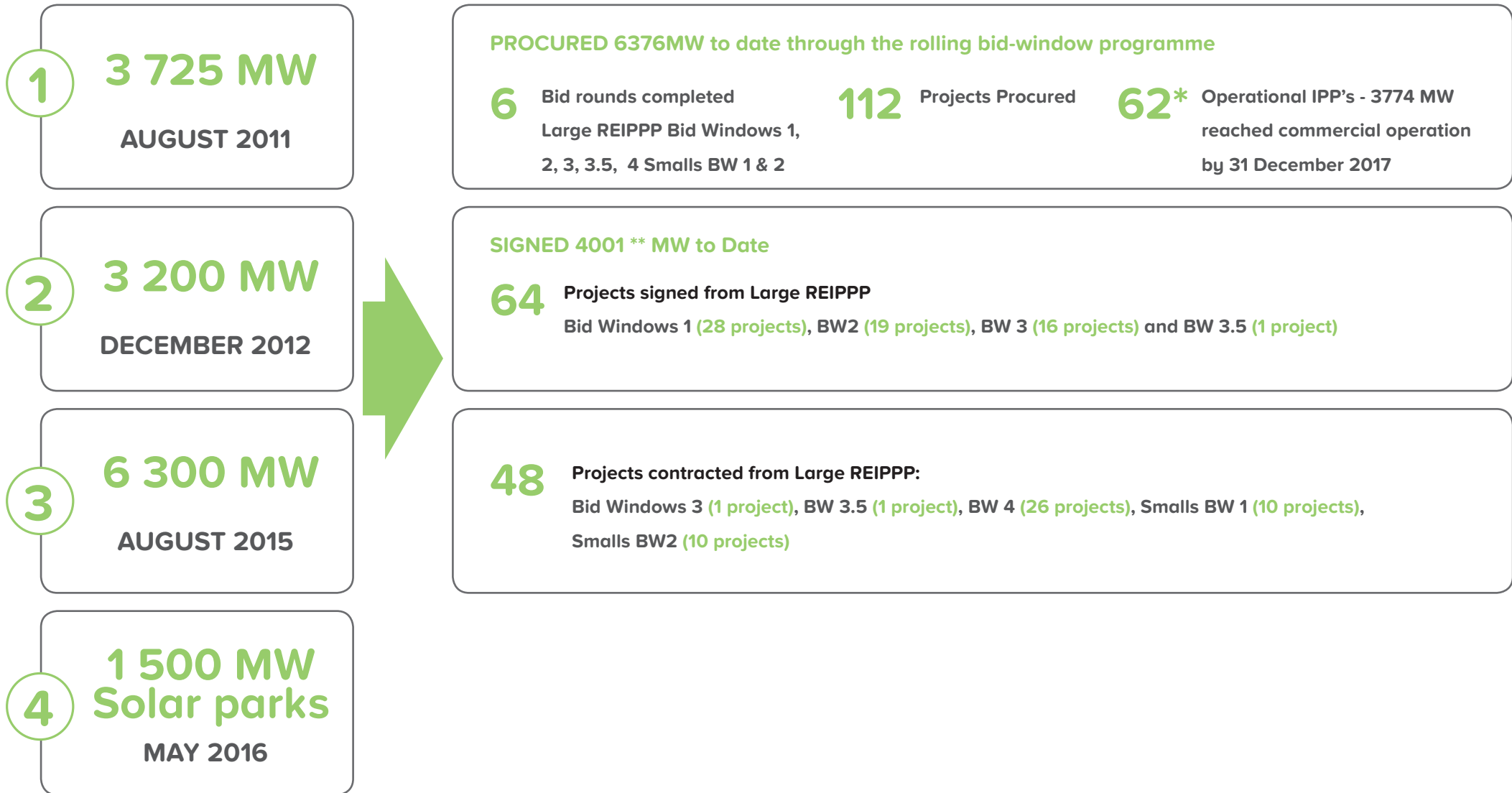
Annual Procurement Plan with annual
quarterly performance targets and
measures 3 years focus





IPP in process: REIPPPP

14 725 MW Renewable Energy through 4 determinations

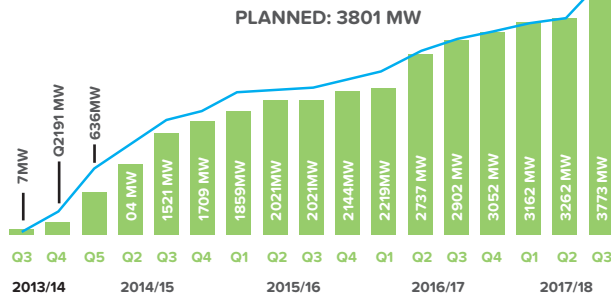




The REIPPPP has been successfully delivering clean energy timeously and cost effectively

Megawatts Operational (MW)

Actual capacity delivered at DEC 2017
3773 MW



Since the end of 2013, the IPPPP increased SA's installed and operational RE capacity to more than 3GW – This is equivalent to 66% of the Capacity of the Medupi power station and 19,8% of the energy output that Medupi will provide once completed, in only a third of the time. As at December 2017, 95% of IPP sites scheduled to be operational have started commercial operations. Average time for construction completion of the 62 projects has been 1.9 years.

The 27 delayed projects were signed in April 2018 and they will provide an additional 2 305 MW (contracted) capacity.

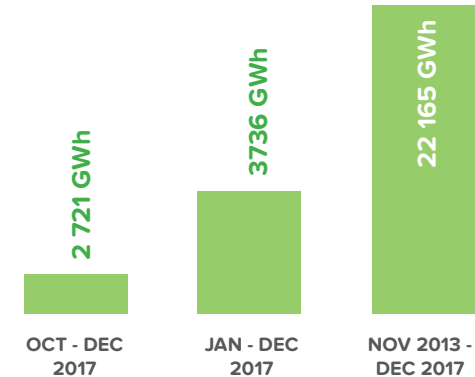
Portfolio Price Trends (R/kWh) April 2016 Terms



Through the competitive bidding process the IPPPP effectively leveraged rapid, global, technology developments and price trends, buying clean energy at lower and lower rates with every bid cycle, resulting in SA getting the benefit of RE at some of the lowest tariffs in the world. The estimate, average portfolio cost for all technologies under the REIPPPP has been dropped consistently in every bid period to a combined average of R0.86/kWh in BW4

Indications shows that the prices will continue to decrease in future rounds.

Clean Energy Generates (GWh)



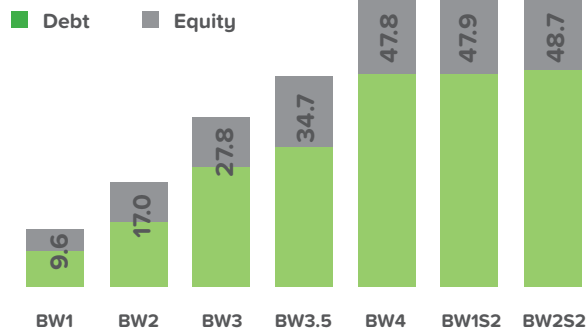
Although production is only ramping up as IPPs become operational, 22 165 GWh have already been generated by 62 operational projects since inception to December 2017, enough to power 6.7 million households, while offsetting 22.5 Mton CO2 emissions and saving 26.6 million kiloliters of water in relation to fossil fuel power generation.

It is expected that BW3.5 and 4 projects, that were recently signed will offset an additional 8.1 million tonne CO2 per annum. These BW3.5 and BW4 projects, once fully operational at maximum capacity, will save approximately 9.6 million kiloliters per annum.



Early achievements from IPPPP as applied to Renewable Energy... and supporting broader economic development objectives

Total foreign investment relative to total investment (cumulative total R201.8 billion)

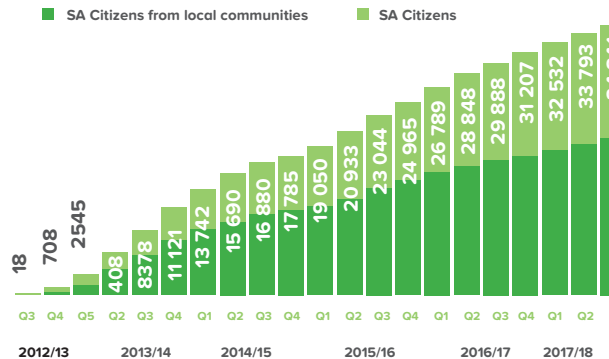


Total foreign investment relative to total investment (cumulative total R201.8 billion)

The total foreign equity and financing invested in REIPPs (BW1-BW4, Smalls BW 1-2) reached R48.7 billion by December 2017.

The 27 recently signed projects will provide foreign investment to the total of R17.9 billion domestic investment of R38 billion and total investment of R55.9 billions

Direct employment creation (job years)



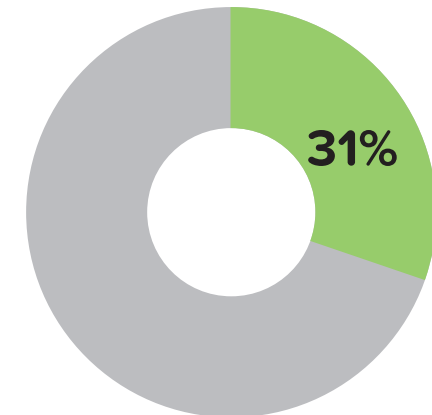
Direct employment creation (job years)

RE generation plants are capital and intensive and technology advanced. 34 841 direct Job Years (39 537 FTEs) created for South African citizens by December 2017, including people from communities local to the IPP operations. Of these jobs 34 108 (88%) are during construction and 4 667 in the operational phase of the projects.

33 774 Total job years (43 999FTEs) created by the programme to date of which **40% is for the youth.**

The 27 signed projects will provide 54 362 total job years (61 688 FTEs) of which 95% is for SA citizens during plant construction and operations.

South African and equitable shareholding (%)



South African equitable shareholding (%)

The IPPPP:

1. Empowered South Africans, who own on average 48% equity in all IPPs;
2. Broadened Black Economic Empowerment, as Black South Africans own, on average, 31% of project equity (shareholding) in the projects which have reached financial close (i.e. projects BW 1-BW3.5); and
3. Secured 10% equity in IPPs for local communities, who will receive R29.3 billion net income over the life of the projects (20 years)

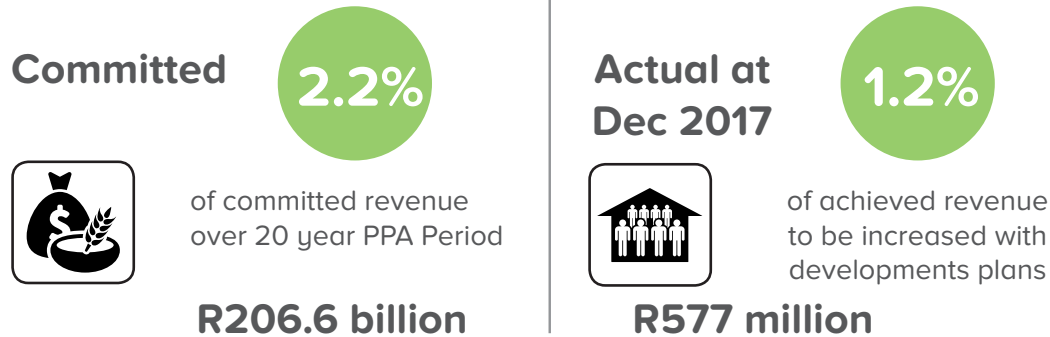
For the 27 projects signed, negotiations led to 55% active SA BEE shareholding in Bid Window 4 and 42.9% in the one Bid Window 3.5 project.



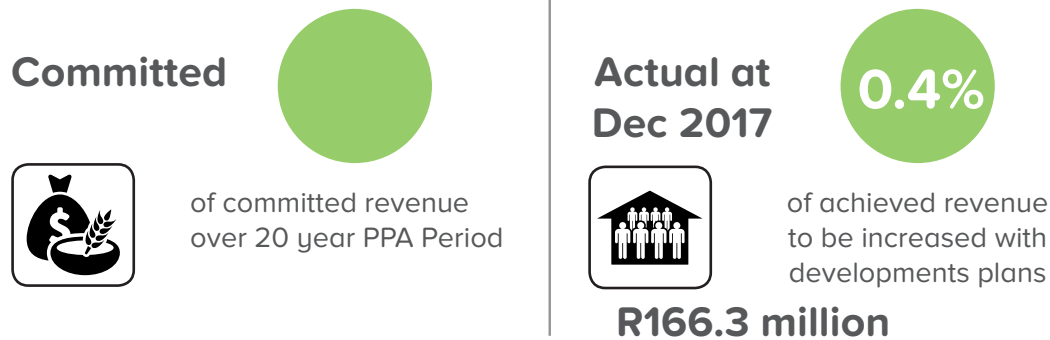
Early achievements from IPPPP as applied to Renewable Energy

Economic and socio-economic benefits to communities through contractual obligations to spend between 1% & 1.5% of the project revenue on socio-economic development and 0.6% on enterprise development

Socio-economic development (SED)¹ (Rand billion)



Enterprise development (ED)¹



Activity spread for ED and SED Projects spend reported by Dec 2017(% of total)



1. Performance data obtained from IPPPP Quarterly Report (Oct - Dec 2017)

Early achievements of IPPPP as applies to Renewable Energy

The REIPPP represents the country's most comprehensive strategy to date in achieving the transition to a greener economy. It has catalysed large investments in manufacturing and indirect job creation, nearly all these achievements have been reversed due to programme roll-out delays

Local content spend¹ (Rand billion)

Committed

45%

of total project value

R67.1 billion

Actual at Dec 2017

50%

of total project value
realized to date which is
over achievement

R41 billion

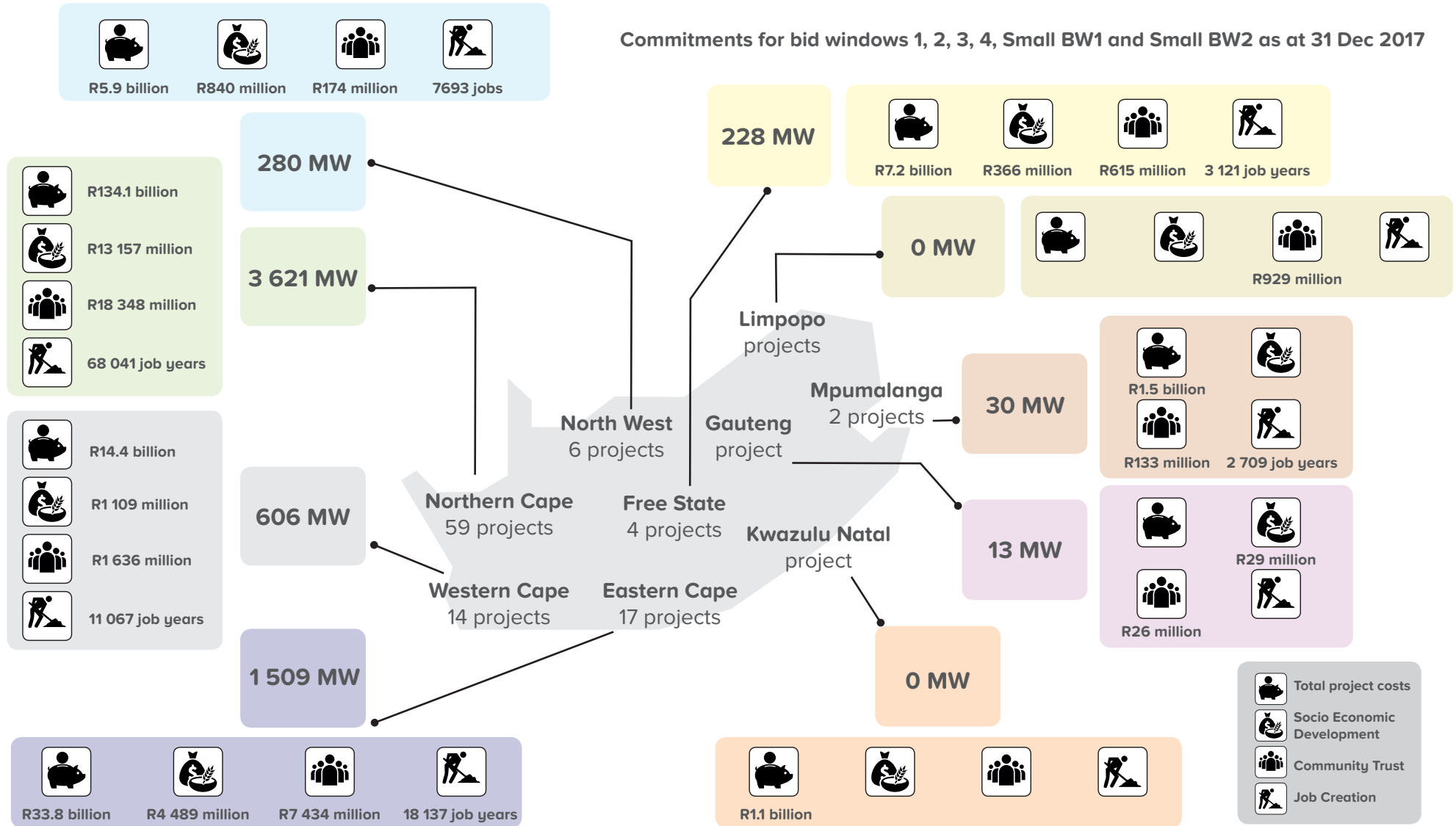
The local content commitments for all procured projects amount to approximately R67.1 billion of which the recently 27 projects signed represent R22.5 bn.

- Local content (South African manufactured products) minimum threshold and targets were set higher for each subsequent bid window.
- For a Programme of this magnitude, with construction procurement spend alone estimated at R75 billion, the result should be a substantial stimulus for establishing local manufacturing capacity.
- REIPPPP has boosted local manufacturing to the extent that the small export industry has started to develop with imports of solar photovoltaic and wind turbine components progressively declining since 2012.
- However, due to the delays in the signing of the PPA's and uncertainty regarding the future of Renewable Energy IPPPP at least 14 manufacturing companies closed down and decided to withdraw from South Africa or put their investments on hold, additional industry training schemes have been put on hold.



The REIPPPP is providing benefits to all nine provinces

Commitments for bid windows 1, 2, 3, 4, Small BW1 and Small BW2 as at 31 Dec 2017





IPPPP Achievements : Energy Procured at Competitive Prices

Electricity prices for the first two REIPPPP bid windows were much higher than in the subsequent rounds:

- this was expected given that the sector had to be established in SA, and is a **regular phenomenon for any new technologies and industry development.**

Going forward:

- a **dramatic downward cost trajectory** for renewable id already evidenced and expected trend is that it will continue to levelised cost of energy (LCOE)
- **Forward looking renewables and gas is the cheapest new generation capacity.**

Section 10 of the Electricity Regulations of New Generation Capacity allows for Eskom to recover all its costs on the REIPPPP and any other section 34 procured IPP programme through the electricity tariff and therefore provide certainty.

The **impact on Eskom's balance sheet is effectively mitigated by the cost pass-through** and the concurrence of the National Energy Regulator(NERSA) when determinations are made by the Minister in terms of section 34 of the ERA.



IPPPP Achievements: Jobs

- The 62 signed IPPs under REIPPPP that have completed construction had planned to deliver 17 5289 jobs during the construction phase, but achieved 27 775 new jobs. This is 58% more jobs than committed. A total of **6729 jobs have been created during operation** by the end of December 2017.
- The recently signed **27 projects under REIPPPP Bid Windows 3.5 and 4 will create 58 419 full time equivalent jobs** (using the DPW calculation) for SA citizens - mostly during construction period and mostly for youth.
- A total of 20 100 **full time equivalent jobs** will be created in Limpopo and Mpumalanga through the First Coal Bid Window. In the remaining Coal Energy Determination is procured, this will deliver a total **estimated 60 000 full time equivalent jobs for SA citizens**.
- The planned Gas-to- Power IPP Programme will deliver about **50 000 per annum economy-wide, full- time equivalent job opportunities over the next 25 years**.
- Although jobs are created during the construction period, the anticipated rolling procurement programme was designed to ensure ongoing job creation.