



# The South African Energy Independent Power Producers Procurement Programme (IPPPP)

A partnership between:

Department of Energy

National Treasury

Development Bank of Southern Africa

..."it (REIPPPP) has already established a flagship public-private partnership model for South Africa, and indeed the rest of Africa, and in the process is helping alleviate Eskom's current power crisis while also reducing greenhouse gas emissions."

- Enabling Renewable Energy in South Africa: Assessing the REIPPPP, WWF, August 2014



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# Overview

- IPP Office role and mandate
- Progress to date | 2010 – 2015
  - IPPPP portfolio overview
  - REIPPPP highlights (electricity capacity and broader benefits)
- Where to from here | 2015 and beyond
  - IPPPP going forward
- Issues and challenges
  - Key issues and solutions



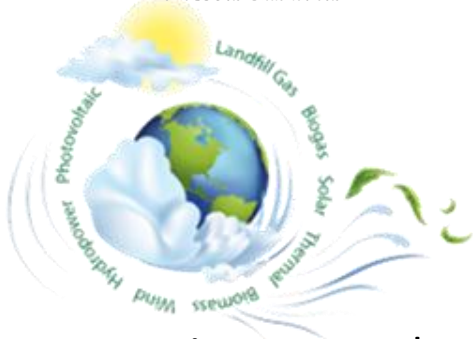
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# IPPPP ROLE AND MANDATE



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# Role and mandate of the IPPPP Office

- Primary mandate is to secure electrical energy from the private sector for renewable and non-renewable energy sources.
  - Established Nov 2010 by the South African Department of Energy (DoE), National Treasury (NT) and the Development Bank of Southern Africa (DBSA)
- Designed to contribute to the broader national development objectives of job creation, social upliftment and broadening of economic ownership.



## Non Renewable Energy Procurement

- Coal (base load)
- Cogeneration
- Gas

## Renewable Energy Procurement

- REIPP Procurement Programme (onshore wind, solar PV, CSP, small hydro, biomass, biogas, landfill gas)
- Small RE IPPs
- Hydro
- Cogeneration (from agricultural waste / byproducts)

## Advisory services

- Gas Utilisation Master Plan (GUMP)
- Small projects fund
- Others (Biofuels, demand side management, cross-border)



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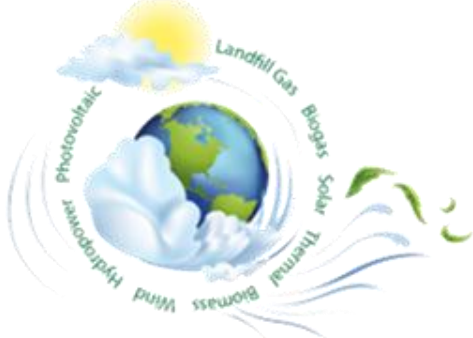


2010 to 2015

# WHERE DO WE STAND TODAY?



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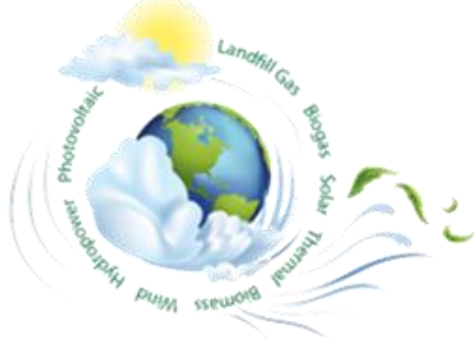


# IPPPP portfolio status at a glance (...1)

## Non-renewable IPP programmes

Carrier (Capacity determined)	Master planning	Project preparation	RFP	Bid submission	Bid announcement	Financial close	COD
Coal (2 500 MW) – local and cross boarder	IRP	Completed	15 Dec 2014	Nov 2015	Q2 2016/17	Q2 2017/18	2021 onwards
Cogen (1 800 MW)	IRP	Completed	4 June 2015	1a – 11 Aug 2015; 1b – 9 Sept 2015	1a - 15 Dec 2015 1b – Q3 2016/17	1a – Q2 2016/17 1b – Q4 2017/18	1a - Q4 2016/17 1b – Q4 2017/18
Floating Power Plants	August 2015	Conceptualization	1 <sup>st</sup> draft RFP completed	Project currently on hold			
Imported Gas to Power (3000 MW)	Dec 2015 <sup>2</sup>	Document preparation	RFQ – Q2 2016/17 RFP – Q4 2016/17	Q3 2017/18	Q4 2017/18	Q4 2018/19	First power 2021/22 - ongoing
Domestic and Piped Gas (126 MW)	Dec 2015 <sup>2</sup>	Document preparation	Q3 2016/17	Q1 2017/18	Q3 2017/18	Q1 2018/19	2018/19 - ongoing
Peakers (1 020 MW)	IRP	Completed	Completed	Completed	Completed	Sept 2013	30 Sept 2015 <sup>5</sup> ; 9 Sept 2016

Where COD – Commercial Operation Date, RFP – Request for Proposals; IRP – Integrated Resource Plan (\*Green areas indicate milestones completed with completion dates shown. Grey areas indicate planned milestone dates.) **Note 1.** GC – Grid connected. **Note 2.** A Gas Policy and Strategy Framework is in the process of development. **Note 3.** 16 of the 17 projects have signed. One IPP still to finalise financial close. **Note 4.** Dates applicable to the 4 response submissions under BW1. **Note 5.** Dedisa reached COD on 30 September 2015.



# IPPPP portfolio status at a glance (...2)

## Renewable IPP programmes

Carrier (Capacity determined)	Master planning	Project preparation	RFP	Bid submission	Bid announcement	Financial close	COD
<b>Renewable energy (13 225 MW)</b>							
<b>Bid window 1 (1 424 MW)</b>	IRP	Completed	3 Aug 2011	4 Nov 2011	6 Dec 2011	5 Nov 2012	100% COD 100%GC <sup>1</sup>
<b>Bid window 2 (1 044 MW)</b>	IRP	Completed	3 Aug 2011	5 Mar 2012	21 May 2012	9 May 2013	78% COD 89% GC <sup>1</sup>
<b>Bid window 3 (1 456 MW)</b>	IRP	Completed	3 May 2013	19 Aug 2013	29 Oct 2013	12 Dec 2015 <sup>2</sup>	0% COD 5.88% GC <sup>1</sup>
<b>Bid window 3.5 (200 MW CSP)</b>	IRP	Completed	-	31 Mar 2014	15 Dec 2014	Q1 2016/17	Q4 2018/19
<b>Bid window 4 and 4 additional (2 205 MW)</b>	IRP	Completed	26 May 2014	18 Aug 2014	16 Apr 2015	Q2 2016/17	Q2 2017/18 onwards
<b>Bid window Expedited (1 800 MW)</b>	IRP	Completed	25 Jun 2015	11 Nov 2015	Q2 2016/17	Q4 2016/17	Q4 2018/19 onwards
<b>Bid window 5</b>	IRP	Document Preparation	Q2 2016/17	Q3 2016/17	Q1 2017/18	Q3 2017/18	Q2 2020/21 onwards
<b>Small renewables First Stage Two (49 MW)</b>	IRP	Completed	-	3 Nov 2014	4 Oct 2015	Q1 2016/17	Q3 2018
<b>Small renewables Second Stage Two (51 MW)</b>	IRP	Completed	18 Dec 2015	Q2 2016/17	Q3 2016/17	Q2 2017/18	Q3 2020
<b>Small Renewables Bid Window 3 (100 MW)</b>	IRP	Document preparation	Q2 2016/17	Q3 2016/17	Q1 2017/18	Q3 2017/18	Q2 2020/21 onwards

Where COD – Commercial Operation Date, RFP – Request for Proposals; IRP – Integrated Resource Plan (\*Green areas indicate milestones completed with completion dates shown. Grey areas indicate planned milestone dates.) **Note 1.** GC – Grid connected. **Note 2.** 16 of the 17 projects have signed. One IPP still to finalise financial close.



# The REIPPPP is most advanced and already making a significant contribution to power supply in the country

**As at 31 December 2015:**

**6** bid rounds (bid windows 1, 2, 3, 3.5, 4 and 1S2<sup>1</sup>) **completed**

**334** bids received and **evaluated** (17.9 GW total capacity)

**102** **selected** as preferred bidders identified with...

**6 376** MW electricity capacity **procured**

**2 021** MW already **operational** from 40 IPPs

**R194 billion** investment attracted for energy infrastructure in bid windows 1 – 1S2

Note 1. bid window 1S2 | Small scale projects, first completed procurement window comprised of a two stage bidding process



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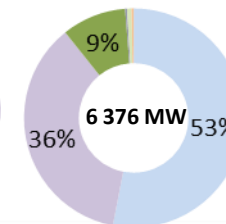
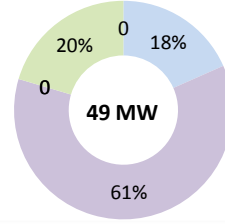
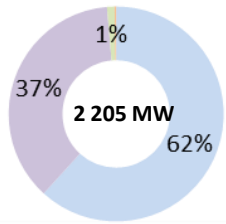
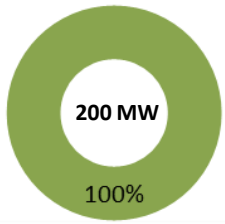
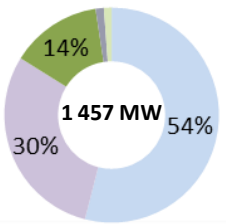
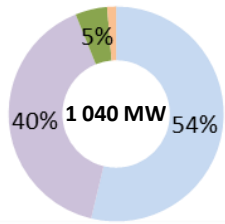
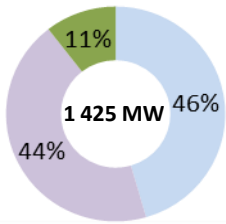


# From November 2011 to December 2015 6 376 MW from 102 renewable energy projects have been awarded

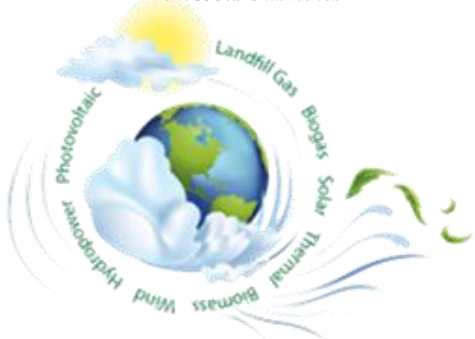
– Wind projects contribute more than half of total capacity

Renewable Energy  
(13 225 MW)

	BW1		BW2		BW3		BW3.5		BW 4		Smalls		ALL	
	Capacity MW	No. of Projects	Capacity MW	No. of Projects	Capacity MW	No. of Projects	Capacity MW	No. of Projects	Capacity MW	No. of Projects	Capacity MW	No. of Projects	Capacity MW	No. of Projects
Wind	649	8	559	7	787	7			1 362	12	9	2	3 366	36
Solar PV	627	18	417	9	435	6			813	12	30	6	2 322	51
Solar CSP	150	2	50	1	200	2	200	2					600	7
Landfill Gas					18	1							18	1
Biomass					17	1			25	1	10	2	52	4
Small Hydro			14	2					5	1			19	3
	<b>1425</b>	<b>28</b>	<b>1040</b>	<b>19</b>	<b>1457</b>	<b>17</b>	<b>200</b>	<b>2</b>	<b>2 205</b>	<b>26</b>	<b>49</b>	<b>10</b>	<b>6 376</b>	<b>102</b>

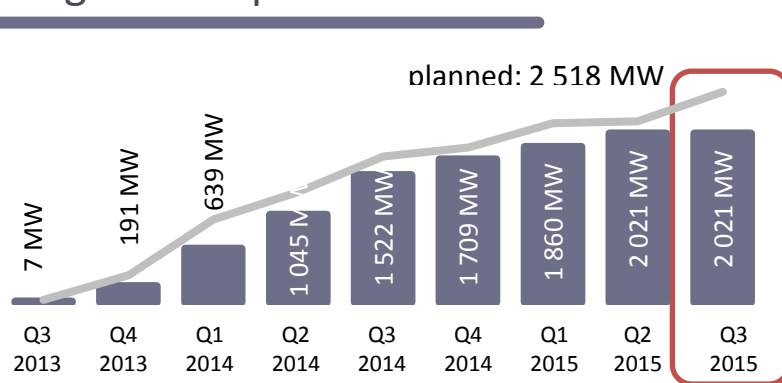


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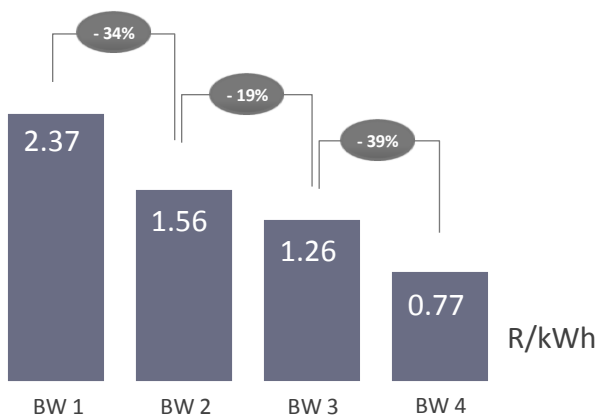
# The REIPPPP is bringing electricity online quickly and cost effectively

megawatts operational



**83%** of IPPs have reached commercial operation as scheduled<sup>1</sup>

REIPPPs have consistently delivered capacity according to schedule since the end of 2013, delivering critical generation capacity quickly and generally on time.



## Price trends<sup>2</sup>

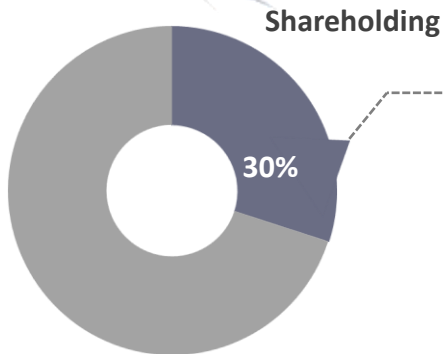
The REIPPPP is delivering energy at increasingly cost competitive rates

REIPPPP **estimated**<sup>3</sup> price trends  
 Energy weighted average (R/kWh) considering average technology RFP submission price (published) for each bid window and the projected annual energy contribution / share per technology type.

**Note1.** 40 IPPs have reached commercial operation date (COD) out of 48 that were planned by December 2015. **Note 2.** Contracted price (at which power is sold to Eskom) per IPP was weighted with consideration of the technologies and their relative, projected annual energy contribution (P50) (in April 2015 terms); **Note 3.** Contracted price (at which power is sold to Eskom) per IPP was weighted with consideration of the technologies and their relative, projected annual energy contribution (P50) (in April 2013 terms). BW 3 estimated rate incorporates the peak tariff (270% of base rate) applicable to CSP. BW 3.5 is not included as it is technology specific.



# The programme is effectively contributing to broader development objectives in SA



Shareholding by Black South Africans across the complete supply chain (for the 63 projects in BW 1, 2 and 3)



With 11% held by **local communities**

# 49%

**local content** achieved in construction

**local content** reported as percentage of Total Project Value achieved during construction



# 111 %

**of planned employment** achieved during construction (BW 1, 2 and 3)

Even though BW 3 has only recently started construction, 11% more direct employment opportunities for South African citizens reported (21 673 actual vs 19 523 planned job years) during construction than originally projected by developers



**+ twice as many** people from local communities employed by IPPs during construction than was contractually required

**Note1.** For actual achievements only BW1, BW2 and BW3 data is reported – BW3.5, BW4 & BW1S2 have not completed financial close.



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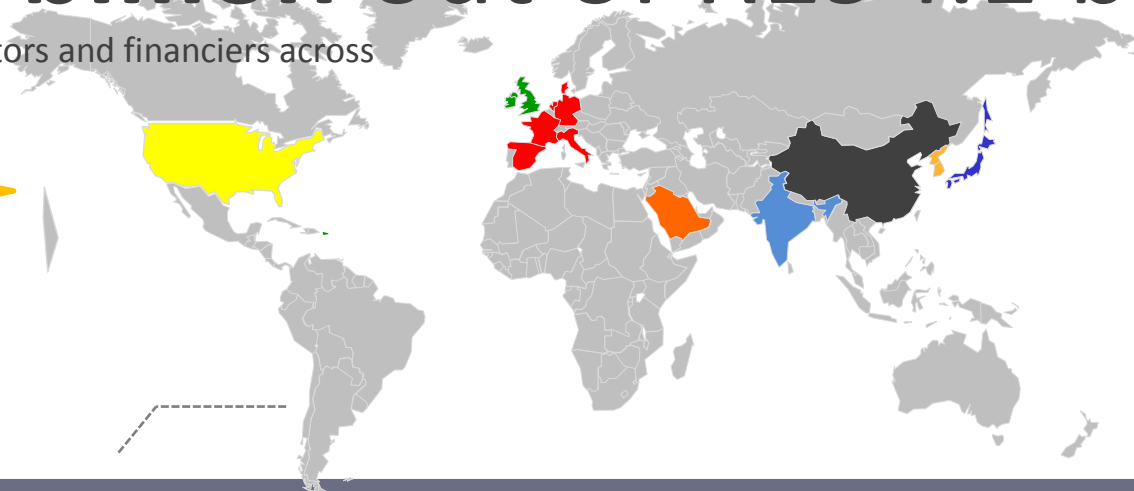
Whilst securing equity for South Africans, the REIPPPP has also attracted significant FDI into the country

For bid windows 1 – 4 and Small projects<sup>1</sup>

# R53.4 billion out of R194.1 billion

from foreign investors and financiers across the globe

i.e.: **27.5%**



Foreign equity in the REIPPPP (BW1 – BW4 and 1S2) is R35.2 billion, equivalent to 56.2% of the inward FDI attracted into South Africa during 2014 (R62.6 billion) and **155.8% of total inward FDI in 2015 (R22.6 billion)<sup>2</sup>**

**Note 1.** Small projects bid window analysis included. **Note 2.** South African Reserve Bank (SARB). 2016. Quarterly Bulletin March 2016:40. Pretoria: SARB.



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2015 and beyond

# WHERE TO FROM HERE?



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# Targeting 1 800 MW of co-generation linked to existing industrial processes where electricity is produced as a by-product

**Co-gen**  
(1 800MW<sup>1</sup>)

800 MW determined Dec 2012 and 1 000 MW Apr 2015

## Status

- **RFP revised** to facilitate an **expedited procurement of cogeneration capacity**, allowing the first 4 bid windows to run on a six weekly basis. Focus of first bid window on existing plants with underutilised generation capacity to sell such potential capacity into the grid.
- **4 July 2015** request for bids issued by the DoE for first bid window (structured into 4 submission rounds)
- **Dec 2015 Co-gen Preferred Bidder** for first submission round (1a) announced
- To enable procurement of different types of new Co-gen facilities not aligned with the definition in the current New Generation Regulations, the DoE embarked on a **process of amending the New Generation Regulations** and has completed a **public consultation** process

## Next Steps

- To harness potential other Co-gen opportunities the DoE is in the process of **considering a proposal to procure new Co-gen plants at acceptable tariff levels (Greenfields programme)**
- **The Promulgation of amended New Generation Regulations** (Amended Regulations under the ERA) is critical for the roll out of the Co-gen programme.
- **Subject to the approval of the New Gen Regulations, the second bid submission announcement is planned for Q3 2016/17**
- **Subject to the approval of the New Gen Regulations, the third bid submission phase is planned for Q3 2016/17.**

**1 800**  
MW target

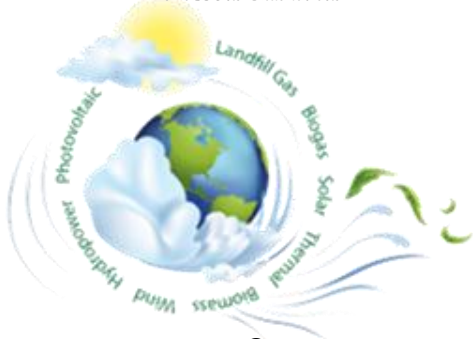
BW 1a and 1b expected to deliver **15.6 MW**

**Note 1.** The ability to procure 1 800 MW of cogeneration capacity will depend on whether such generation options can be procured at competitive prices.



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# Pursuing the development of gas as a sustainable, alternative energy source

## Status

**Gas to power**  
(3 126 MW)

- **Procurement framework** developed. Structured into two sub-programmes:
  - (i) Domestic Gas Programme; and
  - (ii) Imported Gas Programme.
- **July 2015: Gas to power RFI** received and analysed 173 complete responses
- Facilitated the **Gas Options conference**, which drew significant support for and interest in South Africa's Gas Programme
- Collaboration established with Transnet Corporate and Transnet Ports Authority (TNPA), CEF and PetroSA
- IPP Office commissioned EIAs and undertook public consultations in order to obtain **environmental authorisation** for LNG terminal, and power project
- Project development work is being done by DoE, including procurement, siting and obtaining authorisations

## Next Steps

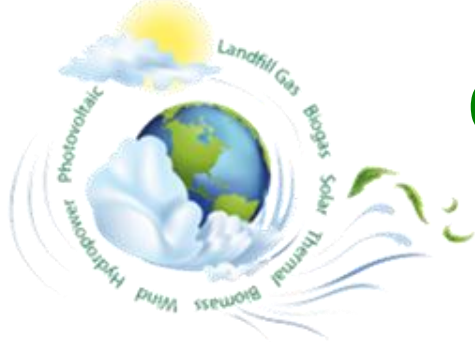
### Taking Gas to Power forward

- **Release of the Preliminary Information Memoranda:**
  - **Q2 2016/17** | Release Imported Gas to Power RFQ
  - **Q3 2016/17** | Release Domestic Gas RFP (CBM, UGC, etc.)
  - **Q4 2016/17** | Release Imported Gas to Power RFP
  - **Q4 2016/17** | Obtain Environmental Authorisation for LNG terminals (imported LNG) at three ports
  - **Q1 2017/18** | Bid Submissions for Domestic Gas

The Gas Programme will stimulate the **gas industry** and **gas infrastructure development** within South Africa, requiring new **policy frameworks and legal and regulatory amendments**



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# Opportunities for coal IPPs have been identified

**Coal IPPPP**  
(2 500 MW)

## Status

- **Initial interest (June 2014)** shown by 80 IPPs including **potential projects in Botswana, Zimbabwe, Swaziland and Mozambique**
- **December 2014, first coal IPP bid window released to market** (domestic, single buyer PPA)
- Strategic framework to guide the procurement of cross border projects is under development
- **2 Nov 2015 | First bid submission date.** Received two bids for combined capacity of **900 MW** (submission delayed from August 2015 at request of the market) up to
- The coal bids are currently under evaluation

## Next Steps

- **Bid Window 1 Preferred bidder announcement**
  - planned for FY Q2 2016/17
- **Second Bid Window Bid Submission**
  - planned for FY Q3 2016/17 – 1 600MW
- **NOTE:** Research as to cleaner technical solutions to be done for future rounds of the coal programme

**2 500 MW**  
by 2020



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# The REIPPP is being expanded to unlock more renewable energy opportunities

## Status

**Renewable Energy (13 225 MW)**

- **11 November 2015** | Bid submissions for the **expedited window** closed; receiving 106 bids. 1 800 MW available for procurement

**Solar PV:** 4 725 MW, **Wind:** 6 360 MW, **CSP:** 1 200 MW, **Small Hydro:** 195 MW, **Landfill Gas:** 25 MW, **Biomass:** 210 MW, **Biogas:** 110 MW and **Small Scale REIPPPP:** 400 MW

**Small RE (400MW)**

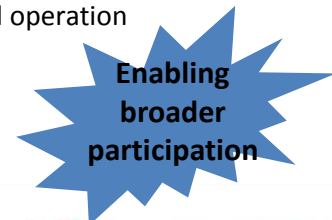
- **BW 1S2:** First BW Small REIPPPP divided in 2 bid cycles
- **Ten Preferred Bidders** announced October 2015 from BW 1S2 and 49 MW was procured of 400 MW determined for Small REIPPPP

**FIRST - Small RE Projects Fund**

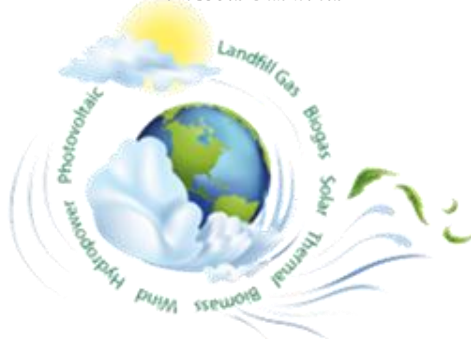
- **Facility for Investment in Renewables Small Transactions:** Fund being developed in conjunction with private financial institutions and KfW.
- Fund developed independently from the DoE and is intended to provide **funding to small, local, new RE developers.**

## Next Steps

- **Q2 2016/17** bid announcement for **expedited BW**
- **RFP review in process** incorporating extensive consultation (the dti, DWAS, DEA, NERSA and Eskom) to address market feedback, monitoring results and DOE concerns
- **Q2 2016/17** release of revised RFP for **bid window 5**. Key aspects of redesign include (i) definition of local community, (ii) mechanisms to ensure early, efficient and equitable benefits to communities, and (iii) local content / industrialisation regime. (iv) refinancing provisions
- **Q3 2016/17** bid submission date for bid window 5
- **Simplification of Small REIPPPP** to provide for a less complex and costly bidding process
- **Q2 2016/17:** target date for second stage two (2S2), seeking to procure 51 MW; Release of RFP for BW3
- **Q1 2016/17:** Date for fund operation



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# Harnessing regional collaboration through the cross border programme

## Cross Border IPPPP

### Status

- **Potential Cross Border Initiatives**
  - **Hydro:**
    - The signed Grand Inga Treaty between SA and the DRC effective March 2015
    - Obliges SA to negotiate an off-take agreement for 2 500 MW of hydroelectricity from the Inga Hydro Project
  - **Coal:**
    - A 3750 MW determination to be gazetted
    - Procurement of Coal IPPs in the region (Botswana, Swaziland, Zimbabwe & Zambia)
  - **Gas:**
    - Significant opportunities for gas supply and gas-to-power projects in Mozambique
  - **Renewables:**
    - sharing experiences (bilaterally and on demand) with African countries seeking to roll-out their RE strategies

### Next Steps

**Regional engagement framework being developed for South Africa's collaborative role in regional capacity building, investment and trade in energy:**

- **Generation Projects:**
  - Cross-border projects in Botswana to be developed after inter-Government and inter-utility agreements signed ;
  - Capacity support for INGA PMU
- **Regional Transmission Networks:**
  - Strategy formulation for development and expansion of transmission infrastructure in SADC
- **Advisory and Capacity Development Activities**
  - Structuring and Formalisation



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# Peaking IPPs helping to alleviate electricity constraints

**Peaking  
IPPs  
(1 005 MW)**

## Status

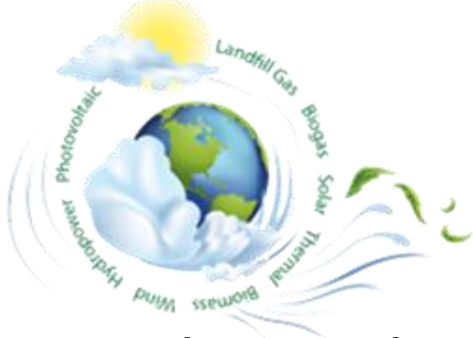
- The **Dedisa** OCGT Plant is located in the Coega IDZ, Eastern Cape with 335 MW capacity
- Completed and generating electrical energy since 30 September 2015.

## Next Steps

- The **Avon** OCGT Plant is located near Shakaskraal, Kwa-Zulu Natal with a capacity of 670 MW
- To be completed by October 2016.



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## Key challenges

- **Alignment between generation and transmission planning**
  - Alignment between generation and transmission planning and implementation remains an issue requiring a variety of forward planning initiatives between the various role-players and making timely funding available for investment in transmission and distribution infrastructure.

**IPP Office mapped all responses across IPP programmes against the existing grid and future grid planned, identified areas of constrained grid, and are seeking ways of mitigating grid connectivity constraints (in consultation with Government and Eskom)**



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# THANK YOU

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