



Renewable Energy IPP Program

SOUTH AFRICA

IRENA

Renewable Energy Policies

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Abu Dhabi

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- South African energy policy has favored the entry of IPPs and the development of renewable industry
 - 1998 White Paper on Energy proposed liberalization of the power sector
 - 2001 Cabinet decision proposed a 70/30 split between Eskom generation (100% Government owned) and IPPs
 - 2004 White Paper on Renewables proposed renewable targets
 - National Government extremely supportive of creating a green economy that supports localization and job creation
 - 3 725 MW from Renewable IPP before 2016 (Ministers Determination)
 - 17 800 MW allocated to Renewable Generation in IRP by 2030

Driver 1: Reduction in carbon intensity

- IRP 2010 predicated on reducing CO₂ emissions from 912 g/kWh to 600 g/kWh by 2030
- Diversifying current generation supply mix

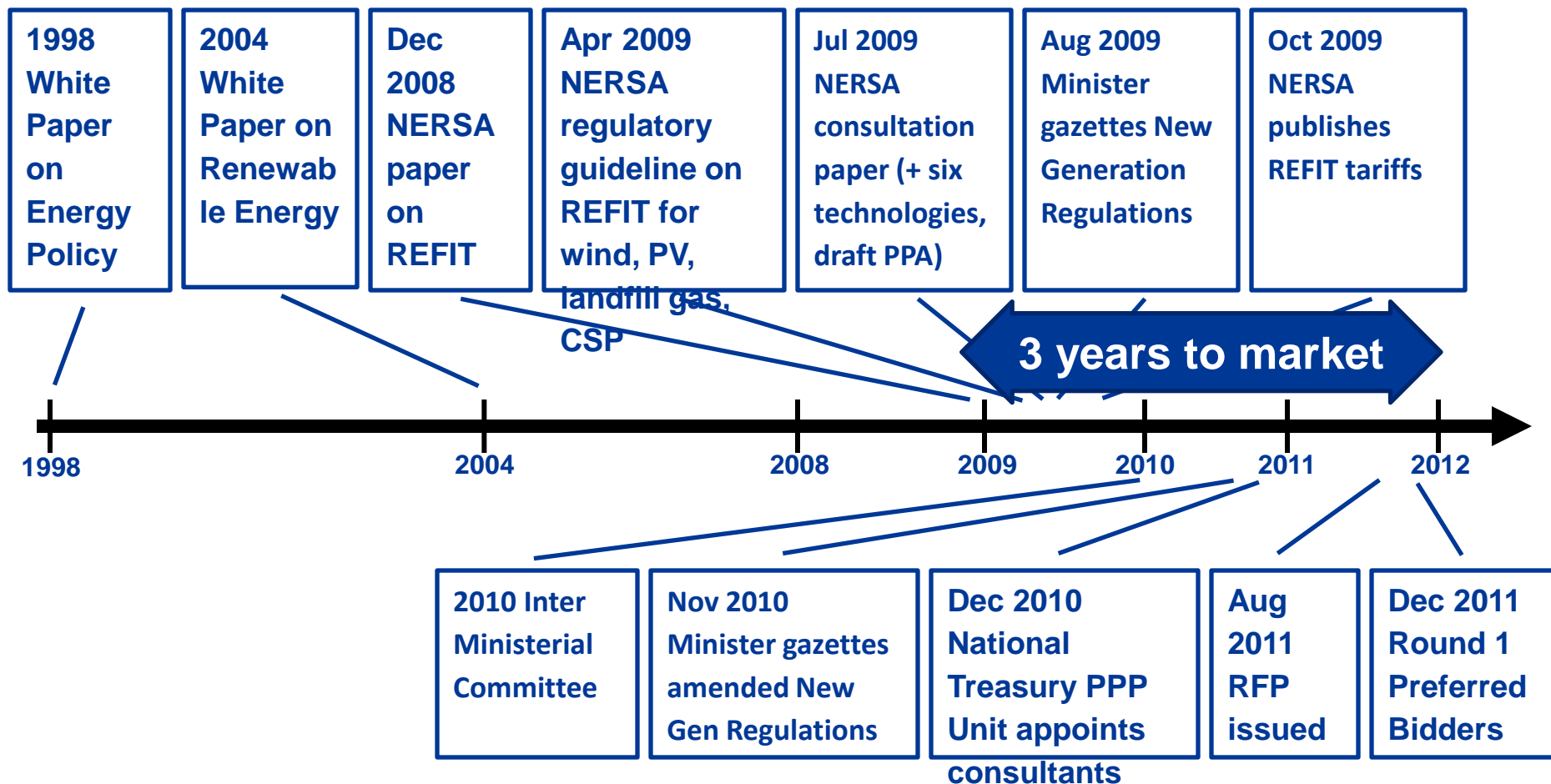
Driver 2: Additional generation capacity

- Quickest to build
- Builds on learning from previous IPP initiatives
- Simpler than other IPP transactions

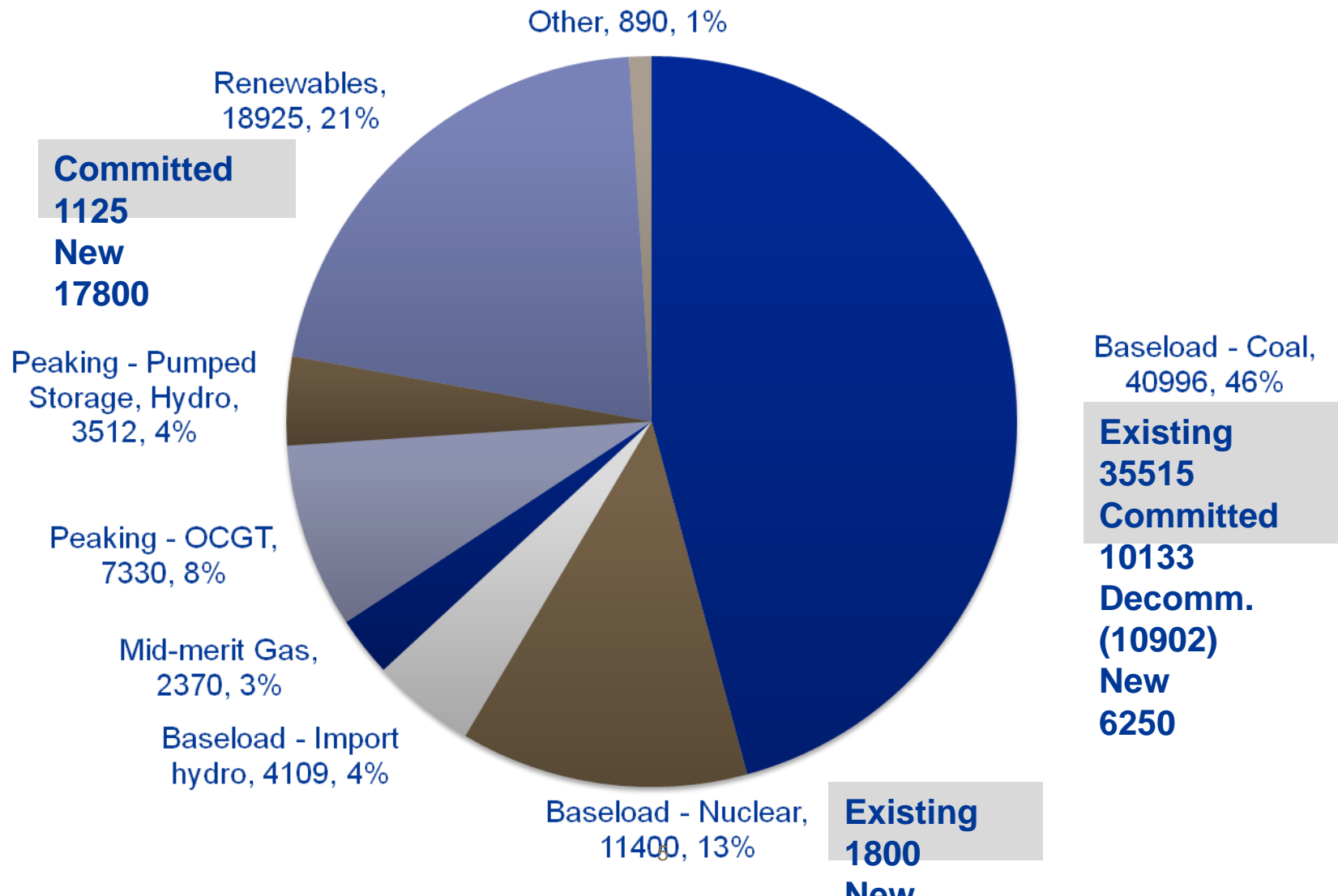
Driver 3: Economic development opportunities

- Creating a Green Economy
- Job Creation

REIPPPP Policy Path



RSA Electricity capacity, 2030 (MW)



Implementation: Firm commitments

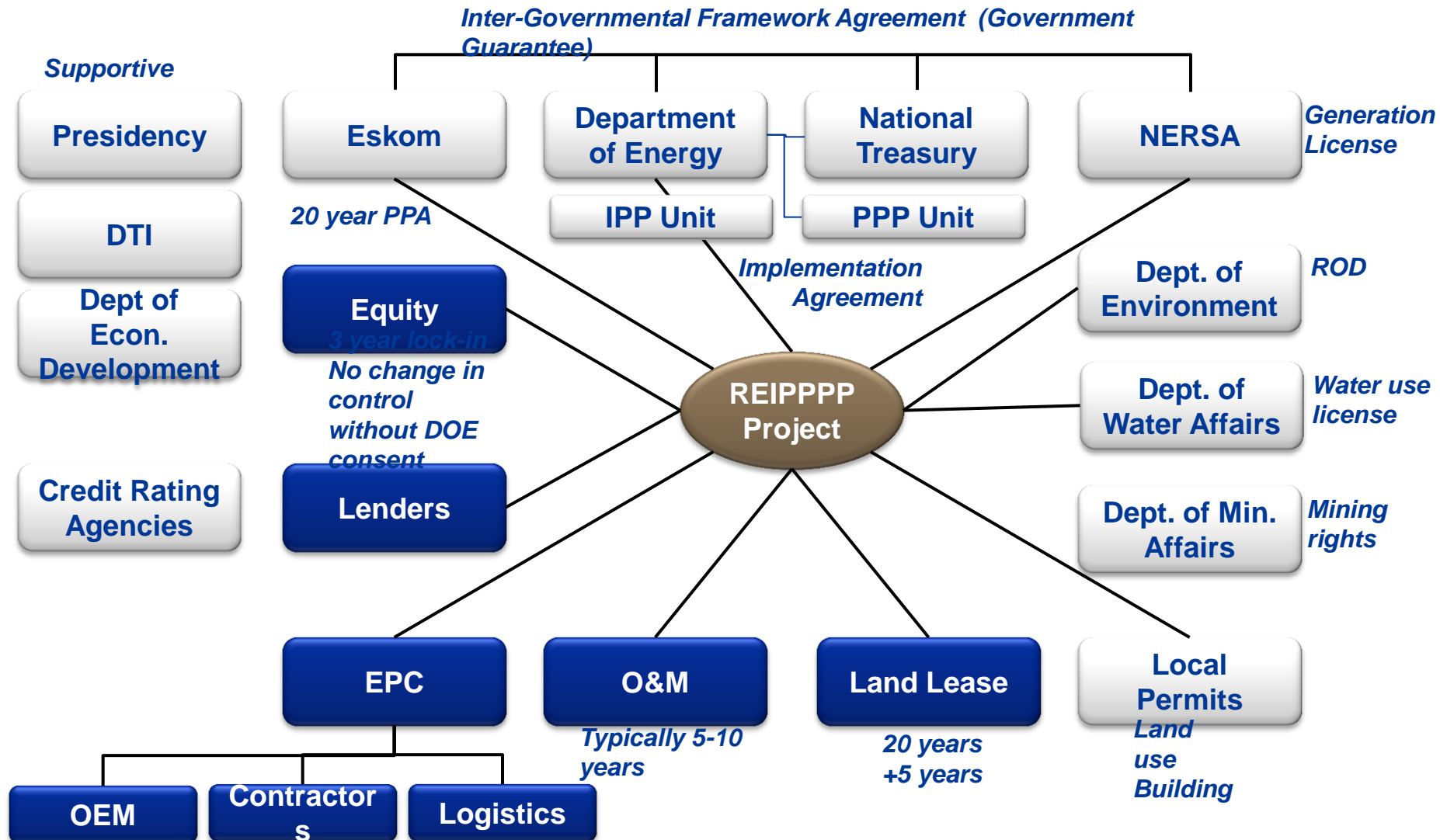
	New build options							
	Coal (PF, FBC, imports, own build)	Nuclear	Import hydro	Gas – CCGT	Peak – OCGT	Wind	CSP	Solar PV
	MW	MW	MW	MW	MW	MW	MW	MW
2010	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	300
2013	0	0	0	0	0	0	0	300
2014	500 ¹	0	0	0	0	400	0	300
2015	500 ¹	0	0	0	0	400	0	300
2016	0	0	0	0	0	400	100	300
2017	0	0	0	0	0	400	100	300
2018	0	0	0	0	0	400 ⁴	100 ⁴	300 ⁴
2019	250	0	0	237 ³	0	400 ⁴	100 ⁴	300 ⁴
2020	250	0	0	237 ³	0	400	100	300
2021	250	0	0	237 ³	0	400	100	300
2022	250	0	1 143 ²		805	400	100	300
2023	250	1 600	1 183 ²	0	805	400	100	300
2024	250	1 600	283 ²	0	0	800	100	300
2025	250	1 600	0	0	805	1 600	100	1 000
2026	1 000	1 600	0	0	0	400	0	500
2027	250	0	0	0	0	1 600	0	500
2028	1 000	1 600	0	474	690	0	0	500
2029	250	1 600	0	237	805	0	0	1 000
2030	1 000	0	0	948	0	0	0	1 000
Total	6 250	9 600	2 609	2 370	3 910	8 400	1 000	8 400

■ Firm commitment now

■ Final commitment in IRP 2012

1. Built, owned & operated by IPPs 2. Commitment necessary due to required high-voltage infrastructure, which has long lead time
 3. Commitment necessary due to required gas infrastructure, which has long lead time 4. Possibly required grid upgrade has long lead time and thus makes commitment to power capacity necessary

Essential Policy Alignments



Government has succeeded in aligning its' elements.

REIPPPP Outcomes

Awards (MW)	Available	Round 1	Round 2	Balance
Wind	1,850	634	563	653
Solar PV	1,450	632	417	401
CSP	200	150	50	0
Other	125		14.3	111
Total	3,625	1,416	1,044	1,165

Procurement model changed BW 1 to BW2 (Capped allocation)

Bidders	Round 1	Round 2	Round 3
Bidders	53	79	??
Preferred bidders	28	19	??
Success rate	53%	25%	

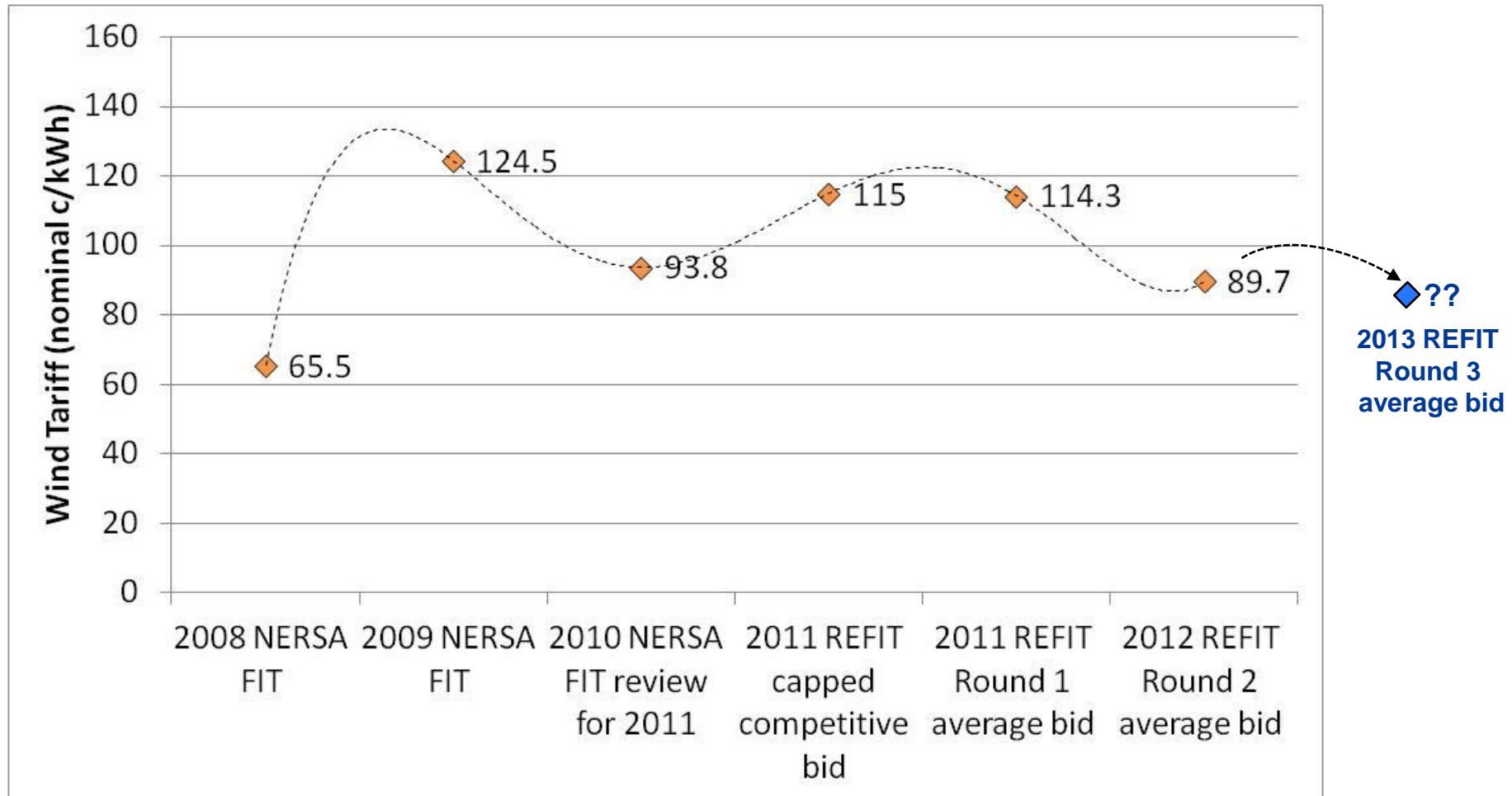
Shift to real competition



Tariffs	Round 1		Round 2		Change
	ZAR/kWh	USc/kWh	ZAR/kWh	USc/kWh	
Wind	1,143	14.3	897	11.2	-22%
Solar PV	2,758	34.5	1,645	20.6	-40%

Significant drop in average bid tariff

Wind Tariff Evolution



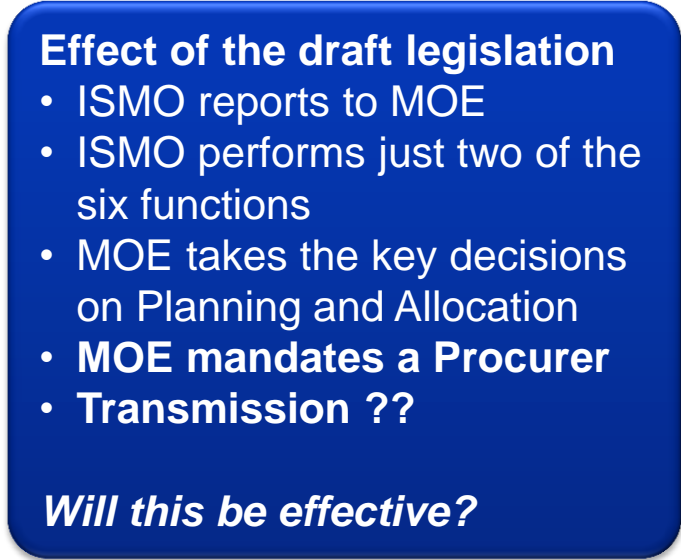
- **Timelines were not realistic**
- **Bureaucracy (time to approve) of Government approvals**
- **Some concern around Alignment of Provincial Approvals and National Approvals (Land rezoning etc)**
- **Lack of skills transfer from external consultants to sustain future procurement programs**
- **Must create competitive environment to enable lowest possible price (Round 1 no real competition)**
- **Create some flexibility in renewable resource categories and its allocation (CSP fully subscribed by round 2)**
- **Get your ceiling price close to market prices (BIOMASS and BIOGAS no takers)**
- **Need to communicate better to Industry and Bidders**

- **GRID CONNECTION**
 - Ability to Connect
 - Time it takes to connect
- **Capital Markets**
 - ZAR debt constraints
 - Innovative instruments to access capital markets?
 - Foreign lenders?
- **Can the retail tariff path continue to fund the Renewable IPP program**
- **Build / Logistics / Operationsnot yet tested**

- **Creating a supportive enabling environment**
 - **Policy (New Generation Regulations Regulations)**
 - **Integrated Resource Plan (IRP 2010, 20 year country energy plan)**
 - **Regulatory support and commitment**
- **Government Commitment (All Ministries: Energy, National Treasury, Public Enterprises, Environmental Affairs, Agriculture Ministry, etc)**
- **International Best Practice (International Consultants brought in to assist developing the Request For Proposal)**
- **Being a first of a Kind for South Africa (Engaged with lending institutions to ensure bankability of Agreements)**
- **Social and Economic Development Criteria**
- **Competitive pricing for round 2**
- **Maintaining Lender, Developer interests**

DOE proposed further determinations

Draft 2012 REIPPPP Determination	Capacity (MW)
CSP	400
Wind	1,470
Solar PV	1,075
Biogas	47.5
Biomass	47.5
Small hydro (≤ 40)	60
Small projects (≤ 5 MW)	100
Total	3,200





Thank you

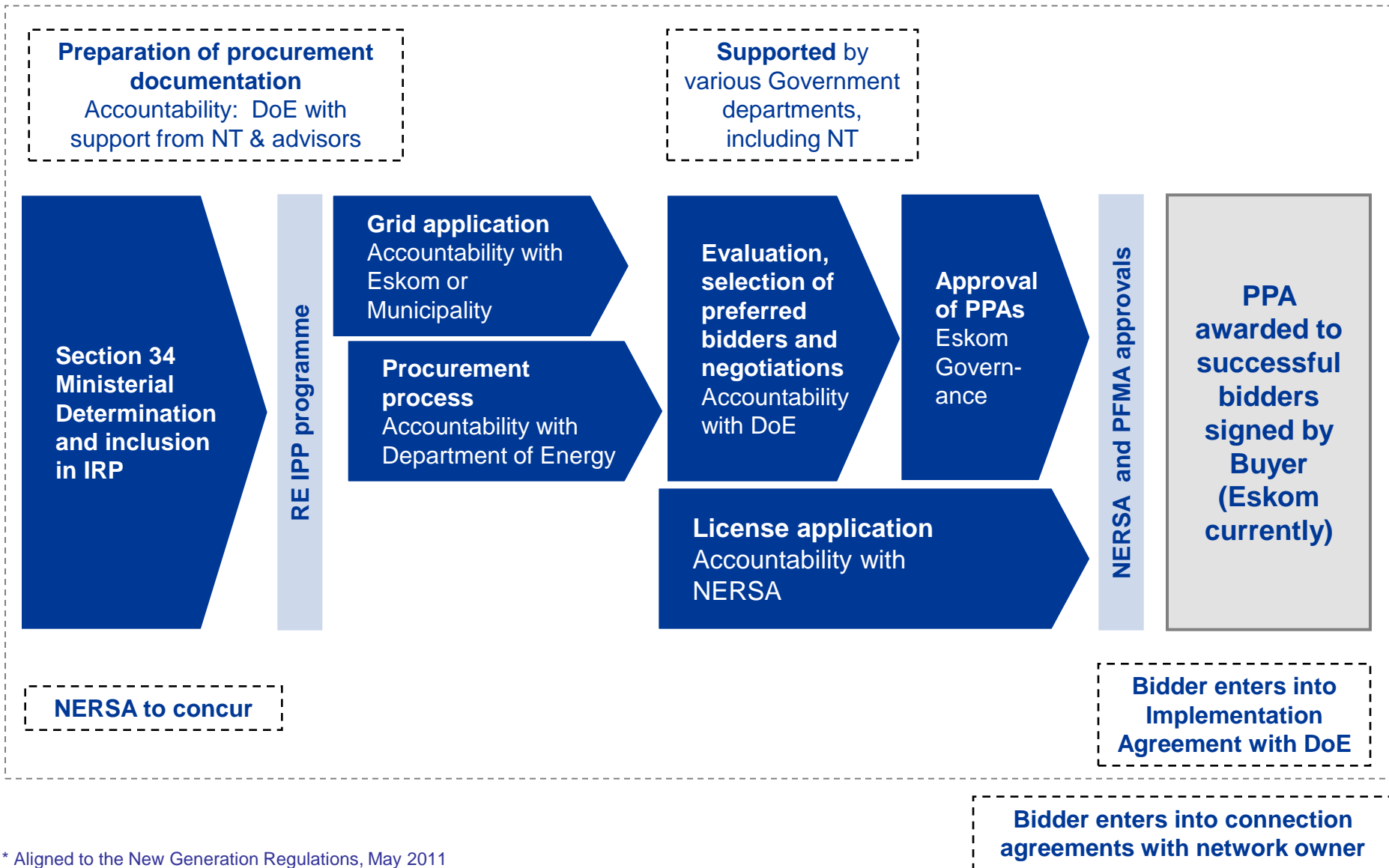
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- Embrace energy saving as a national culture, joining the global journey towards a sustainable future
- 49M campaign aims to create a culture of energy efficiency in SA
- Remember the three Ps: save **p**ower, save your **p**ocket and save our **p**lanet .
If you're not using it, switch it off!



High level process* for the renewable energy IPP programme and possibly other programmes



Once preferred bidders are announced,
Eskom will support the DoE to financial close

- Preferred bidders will enter into an Implementation Agreement (IA) with the DoE
- Eskom will enter into the following key agreements:

Eskom and the Project Company:





Power Purchase Agreement (PPA)	Standard PPA per technology
Transmission Agreement (TA)	Standard connection and use of system agreement
Distribution Agreement (DA)	Standard connection and use of system agreement for Eskom networks

Eskom and the Lenders:

PPA Direct Agreement	Standard PPA Direct Agreement
TA/DA Direct Agreement	Standard TA and DA Direct Agreement

- Signing of all agreements is subject to PFMA and NERSA approvals

REIPPPP Timelines

REIPPPP milestones	2011				2012				2013				2014			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
RFP published			Aug													
Round 1 Bid submission				Nov												
Round 1 Preferred bidders				Dec												
Round 1 Financial close target						Jun										
Round 1 Financial close (revised)							Sep									
Round 1 Planned COD..from										Jun						
Round 2 Bid submission					Mar											
Round 2 Preferred bidders						May										
Round 2 Financial close target									Dec							
Round 2 Financial close (revised)									Mar							
Round 3 Bid submission									Oct							
Round 3 Bid submission (revised)										May						

Carbon intensity reduction

Net energy supplied by all power sources shown in TWh p.a.

