

PAMSA

Comment & recommendations



Stakeholder Consultation on Draft IEP/IRP 2016

7 December 2016 | Jane Molony & Sue Rohrs



+ A CASE FOR CO-GENERATION



Case for Co-generation

- **Energy efficiency** gains through improvements in fuel conversion efficiency and use of waste resources and fuels. *[An Eskom boiler and generator is typically 25% thermally efficient - valuable energy out divided by total energy in - and typical co-gen thermal efficiency is 75%. The same ratios apply to water consumed, ash dumped and CO₂ emitted].*
- **Reduction in utility infrastructure investment** due to decentralisation of energy production, as well as Transmission and Distribution equipment. *[Co-gen already has Grid Connection. Some adjustments are needed, but they ride on back of existing Tx and Dx infrastructure]*
- **Has come to aid of state during recent power shortages.**



Case for Co-generation

- **Reduced transmission and distribution losses** [*because the power is generated by same industry consuming it.*]
- **Fuel saving** by improved thermal efficiency compared to Eskom coal generation [*as above 25% vs 75%*]
- **Reductions in greenhouse gas emissions (CO₂)**
- **Opportunities for creating employment in industrial sector** [*more investment = more industrial activity = more jobs; also prevents potential loss of employment*]



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DRAFT IEP



Draft IEP

- Draft 2016 IEP Problem Statement (as set out in DoE presentation):
 - ***There is currently inadequate supply in both the electricity and liquid fuel industries due to a lack of timely investments in new capacity.***
 - Electricity generation is constrained due to insufficient capacity and inadequate availability of existing infrastructure.



Draft IEP

- Draft 2012 IEP: The then 800MW which was allocated to Co-Gen in 2012 Ministerial Determination was included in IRP 2010 Committed Build Plan.
 - *This has not been done in draft IEP 2016, and it is suggested that it should be. Thus, the 1800MW allocated to Co-Gen in 2012 and 2015 by Minister of Energy should be referred to in draft IEP.*
- Current draft IEP Report states that:
 - *Electricity generation system remains constrained in the short term (i.e. within the next five years) with the only new technologies that can be rapidly deployed to address the constraint being those with short lead times, such as biomass and solar.*
 - **This is incorrect, as there is enough co-gen power available to address these constraints immediately.**

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DRAFT IRP



Draft IRP

- Co-Gen Ministerial Determination allocating 1800MW to Co-Gen is not referred to amongst the others in paragraph 2. (*although amended Determination was gazetted as recently as August 2015, and there have been 2 bid windows for Co-Gen RFB*)
- Paragraph 3 – no Co-Gen or forestry/mill residue has been taken into account in reports referred to informing draft IRP.
- Ministerial determinations are allowed to lapse, except for *Renewables* up to Bid Window 4.5, and 900MW of coal – the Co-Gen Determination of 1800MW therefore lapses.

Draft IRP

- No MTRMP provided for in draft IRP, and therefore no provision for short-term supply constraints (as envisaged in draft IEP)
- If there is no provision for Co-Gen in draft IRP, without an amended MTRMP, then there is no mechanism for the Minister to determine an allocation to Co-Gen going forward.



Draft IRP

- If there is no allocation to Co-Gen, then there is no market for sales by Co-Generators, as Co-Generators (who have existing capacity, surplus to own needs), have traditionally only been able to sell into the following programmes:
 - *MTPPP programme (which is no longer operational)*
 - *STPPP programme (Eskom has advised STPPP generators (approximately 800MW of Co-Gen power) that this programme will no longer be continued)*
 - *Eskom's WEPS purchases (Eskom has expressed doubt that this programme will continue)*
 - *Co-Gen RFB (which will no longer be applicable, according to draft IRP)*

Draft IRP

- **Amendment to New Generation Regulations**
 - New Gen Regs were amended to provide for sales of existing capacity under Co-Gen RFB
 - It would now appear that these amendments serve no purpose.



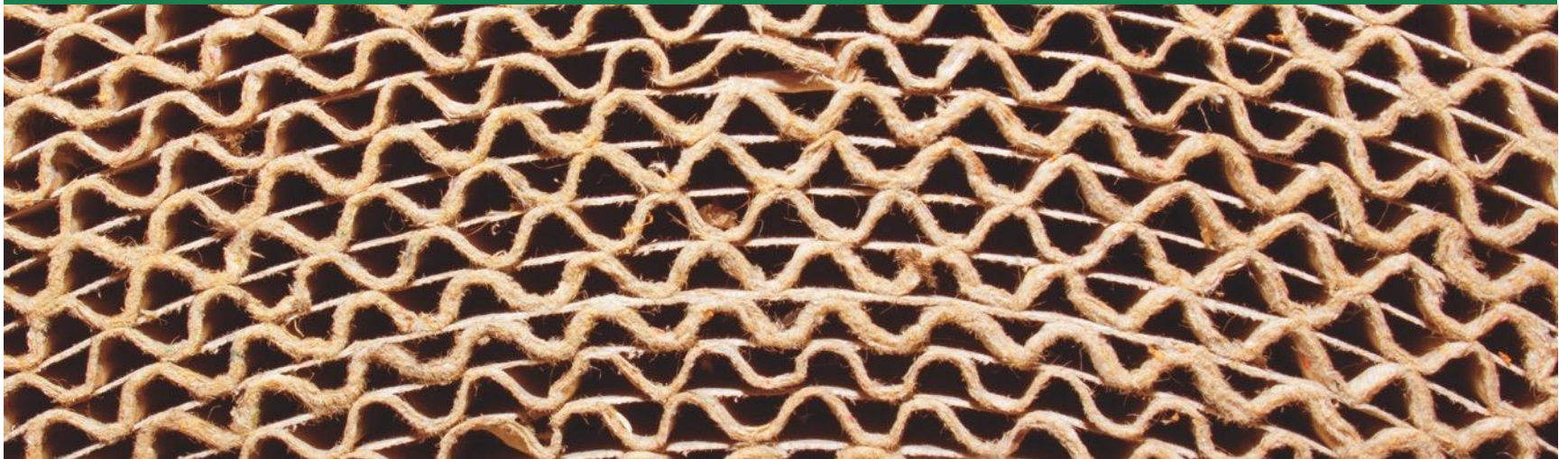
Draft IRP

■ Electricity Regulation Act

- ERA provides that generators must apply for licences.
- In licence applications they must show compliance to IRP, or give reasons for deviation for consent of the Minister.
- In absence of an allocation to Co-Gen under draft IRP, and/or an MTRMP-like provision in IRP, co-generators will not be able to show compliance to IRP.
- There will therefore not be a guaranteed licence to generate, or a licence amendment, even for their substantial existing generation.
- This also applies to other generation sources and technologies not catered for in the draft IRP which are able to satisfy the short term capacity constraints identified in the Problem Statement referred to in the draft IEP presentation.

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DISCREPANCIES



Discrepancies in DoE Docs relating to Draft IRP

Some discrepancies are as follows:

■ IRP Update Presentation – Assumptions

- Information in slide “*Non-Eskom Plant*” is missing in draft IRP.
 - Installed capacity of Sappi is set out as 144MW, and Mondi as 120MW. Installed capacity of various Sasol plants is also mentioned.
 - *None of this information is used in IRP 2016 Draft.*
 - Cumulative Capacity from Procured Determinations is shown as 11MW for Co-Gen, *but is not referred to in draft IRP.*

Discrepancies continued

■ Draft IRP

■ Scenarios – not listed:

- “Transmission and distribution infrastructure is to be dealt with in the IRP, which should assess these in detail, taking into consideration the grid planning currently conducted by Eskom” (source: 2016 Draft IEP Report)
- New technology (storage)
- Adequacy of regulatory framework for Gas
- Adequacy of Gas infrastructure
- Co-Generation (if suggestions to re-instate previous Co-Gen Ministerial Determinations and Co-Gen RFB are not accepted)



Discrepancies continued

■ Annexures:

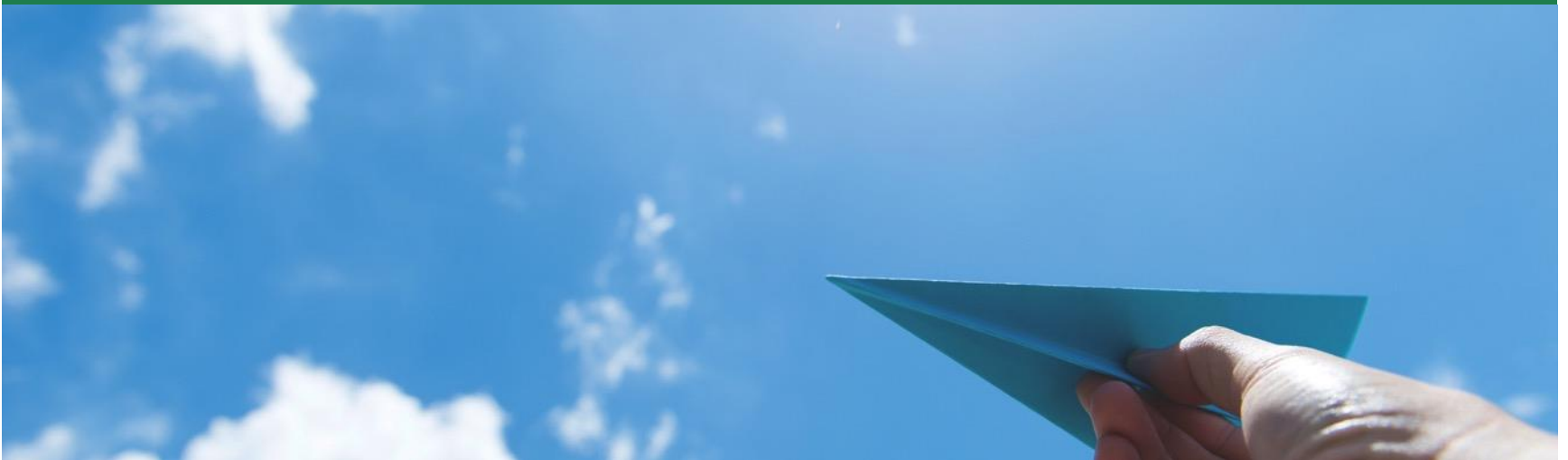
- EPRI Report (technology costs) *[no reference to Co-Gen]*
- Demand Forecast
- Technology Learning Rates*
- Discount Rate Presentation*
- Additional Assumptions Report*

**Last 3 annexures not available on DoE website, and are critical for meaningful assessment of draft IRP.*



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RECOMMENDATIONS



Recommendations

- 1800MW allocated to Co-Gen in 2012 and 2015 by the Minister of Energy should be referred to in draft IEP.
- Following provision in draft IEP:
 - “The electricity generation system remains constrained in the short term (i.e. within the next five years) with the only new technologies that can be rapidly deployed to address the constraint being those with short lead times, such as biomass and solar.”
 - Should be amended by *deletion of the words*:
 - “with the only new technologies that can be rapidly deployed to address the constraint being those with short lead times, such as biomass and solar”, and the substitution thereof of the words “but this may be addressed by utilising immediately available Co-Generation capacity”

Recommendations

- If assessment regarding implications of Co-Generation's non-appearance in draft IRP is correct, then supply of Co-Generation should be specified as being exempt from any Ministerial Determinations and from the requirement, as interpreted by NERSA and the DoE, that new generation capacity may only be procured by a Ministerial Determination.
- Re-assess draft IRP based on, amongst other things, price likely to be charged for natural gas procurement (if not already agreed), grid infrastructure constraints and gas regulation, policy and infrastructure constraints.
- Treat 1800MW of Co-Gen previously determined by the Minister as Committed Build, and therefore part of the new IRP.

Recommendations

- Amend draft IRP to cater for procurement of this 1800MW.
- Provide that the Ministerial Determination for 1800MW of Co-Gen still applies.
- Continue to procure energy from both “greenfields” and “brownfields” plants as enabled in the Co-Gen RFB and in the Amended New Gen Regs.
- Make provision for “willing buyer/willing seller” sales and “wheeling” (i.e. private transactions between IPPs and non-State buyers) as NERSA will determine if the tariffs are acceptable (cost-effective supply).

Recommendations

- Stipulate that these sales are deemed to be compliant to IRP.
- Stipulate that these sales do not require a Ministerial Determination ito s34 of the ERA.
- Stipulate an exemption from compliance with the IRP regarding technologies not included in the IRP, up to a specified capacity.
- Make provision for sales of electricity to other countries.
- Insert an MTRMP-like document as an annexure to draft IRP (for short term supply constraints).



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Thank you