

Parliamentary
Select
Committee
On Energy
25 July, 2013

Cogeneration in the Pulp and Paper Industry

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MANUFACTURERS ASSOCIATION
OF SOUTH AFRICA (PAMSA)

About PAMSA

- Formed in 1992
- Promotes the interests and efforts of the South African pulp and paper industry
- Members – Lothlorien, Kimberly-Clark, Mondi, Mpact, Nampak, Sappi
- Platform for the development and presentation of common views on pre-competitive industry issues – energy, environment, recycling, education, research etc
- PAMSA also oversees the efforts of:
 - Paper Recycling Association of South Africa (PRASA)
 - Promotes paper recycling in South Africa through increased education and awareness initiatives
 - South African Tissue Manufacturers Association (SATMA)



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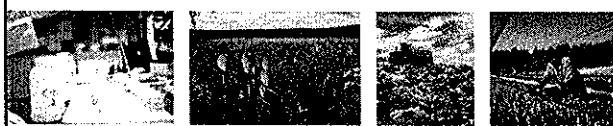
SA industry overview

- 600 million trees across 762,000 hectares are grown for use in pulp and paper manufacture.
- These trees sequester carbon and mitigate climate change.
- Industry plants in excess of 260,000 trees every single day.
 - All paper in South Africa is produced from plantation-grown trees, recycled paper or bagasse (sugar cane fibre).
 - Fibre is not sourced from the wood of rainforests, indigenous or boreal trees.
 - Highest level of FSC certification in the world *forest sustainable*
- Use of renewable biomass-based energy has enabled the industry to avoid the use of 1,3 million tons of fossil fuels such as coal, oil and gas annually and therefore associated carbon emissions.
- Significant employer of over 150,000 people.
- Contributes to jobs in rural areas, foreign exchange earnings and GDP growth.
- Continued investment in roads in deep rural areas, clinics, hospitals, schools and community development.
- Part of IPAP.



Challenges

- Fibre supply – 100 000 hectares – BBBEE transformation charter – (now 20 000 ha pre year needed) also bagasse, recovered paper.
- Land security – workable land claims model
- Securing a skilled workforce for the future – PAMSA Education
- Innovation, research and development – process research unit
- Cost of energy – essential maximise renewable energy opportunity
- Climate change and emissions trading – forests greater value
- Recovered paper – growing collections and beneficiation
- Environmental risks – gaining ear of government
- Water – well managed, wetlands, FSC, reduction in mills



Some Basics – Cogen in SA

- Combined Heat and Power
- Renewable biomass vs Industrial biomass
- Cogeneration + industrial biomass
- CHP requires a heat demand from a process
- Many pulp and paper mills require new boilers
- High pressure boilers produce power & heat.
- New sources of biomass from the forests

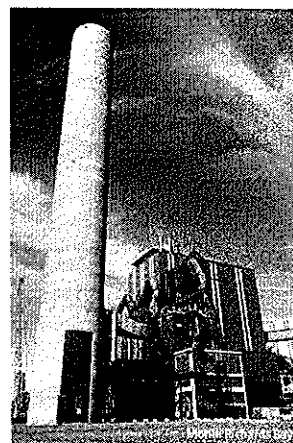
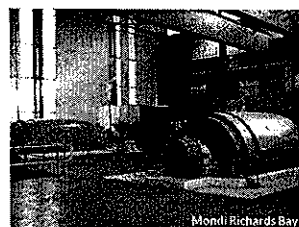


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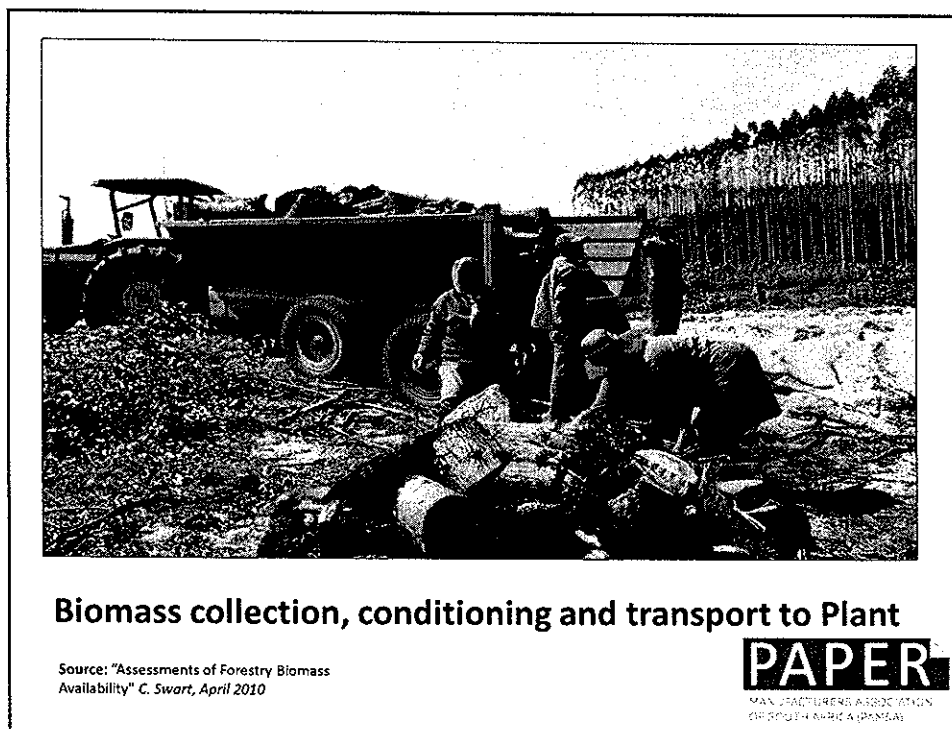
Old and New Boilers with Turbines



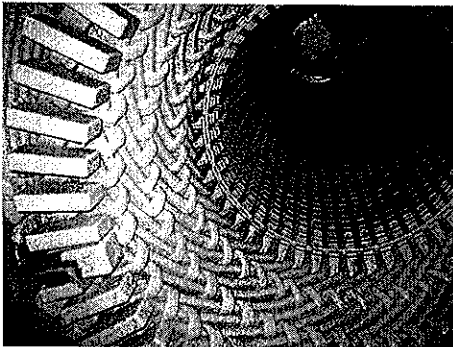
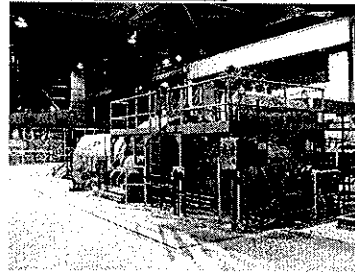
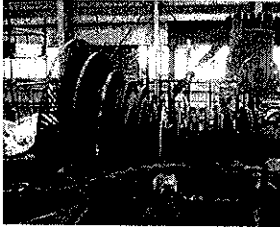
Upgrade



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Pulp and Paper Power Generation in SA



Turbo - Generators

1 Gas Turbine + WHB

15 Steam

6 sites

301 MW

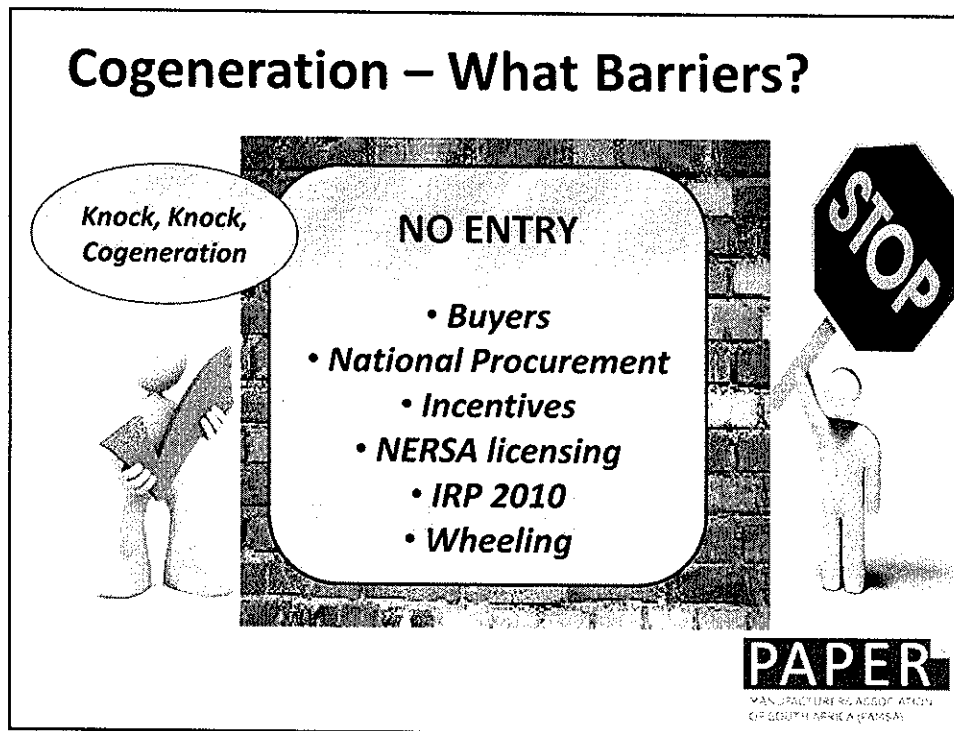
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Cogeneration – What can we do?

Pamsa Members' Cogeneration and Biomass Project Opportunities

Characteristic	MW	Number
Projects	390	17
Condensing Power	257	12
Cogeneration Power	133	11
New Boilers	223	8
Refurbished Boilers	63	2
Existing Boilers	104	7
New Turbo Alternators	361	15
Renewable Fuels	371	13
Non-Renewable fuels	19	6
Start within 12 months	71	3
Start within 24 months	87	7

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Cogeneration – What Barriers?

- **Need a buyer:-**
 - Eskom – short term sales only
 - Eskom – National procurement programme
 - Private buyer in wheeling arrangement
- **National Procurement:-**
 - NERSA and COFIT history
 - Last serious National procurement in 2008.
 - 2 RFI exercises in past 18 months
 - Cogen procurement in 2013?

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Cogeneration – What Barriers continued..

- **Incentives Required**
 - Can't compete against Eskom
 - New boilers and turbines
 - Forest collection and transport
- **Legal and Regulatory**
 - NERSA generator licensing
 - IRP 2010
 - Wheeling uncertain and risky
 - Municipalities
 - Own use




Cogeneration – What Barriers?

LAWS:-

Electricity Regulation Act –

Section 10 (2)(g) "...evidence of compliance with any integrated resource plan applicable.....or reasons for deviation...."





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Enquiries
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xx June 2013

Mr. xxxxxxxxxxxx
Head of Energy
xxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxx

Dear Mr.

APPLICATION FOR AMENDMENT OF XXX LTD'S GENERATION LICENCE

The National Energy Regulator of South Africa (NERSA) hereby acknowledges receipt of your application for an amendment of your generation licence on 3 June 2013.


The following outstanding information is required before NERSA can start processing your application:

- Fuel supply agreement, and
- Reasons for deviation from the Integrated Resource Plan (IRP2010).

Please note that in terms of the Electricity Regulation Act, 2006 (Act No. 4 of 2006) (the ERA), the Energy Regulator is obliged to make a decision on the application within 120 days from the day all required information is submitted.

Yours sincerely

xxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxx



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Regulator of Electricity, Gas, Water and Sanitation for the Republic of South Africa (NERSA) is a public entity established in terms of the National Energy Regulator Act, 2006 and is not a public body for the purposes of the Promotion of Access to Information Act, 2000.

IRP 2010 – Table 3

Table 3: Policy Adjusted IRP

New Build Options

	Coal (PF, FBC, Imports)	Gas CCGT (natural gas)	CCGT (diesel)	Import Hydro	Wind	Solar PV	CSP	Nuclear
	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	300	0	0
2013	0	0	0	0	0	300	0	0
2014	500	0	0	0	400	300	0	0
2015	500	0	0	0	400	300	0	0
2016	0	0	0	0	400	300	100	0

Extract from Staatskoerant, 6 Mei 2011, No. 34263 17

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Cogeneration – Conclusions

- **National Cogeneration Procurement:-**

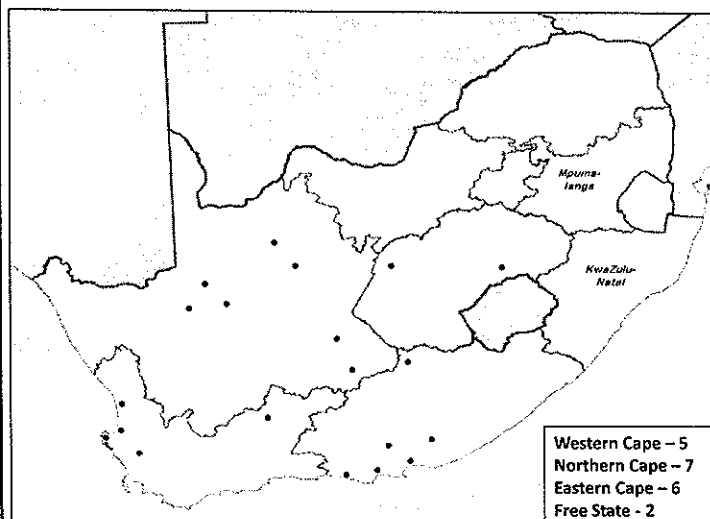
- Speedily move from talk to action
- Meet the needs of IPPs

- **Barriers to Investment**

- Government action on regulations
- NERSA more supportive of IPPs
- Support wheeling
- Bold and clear national plan for > 2000 MW

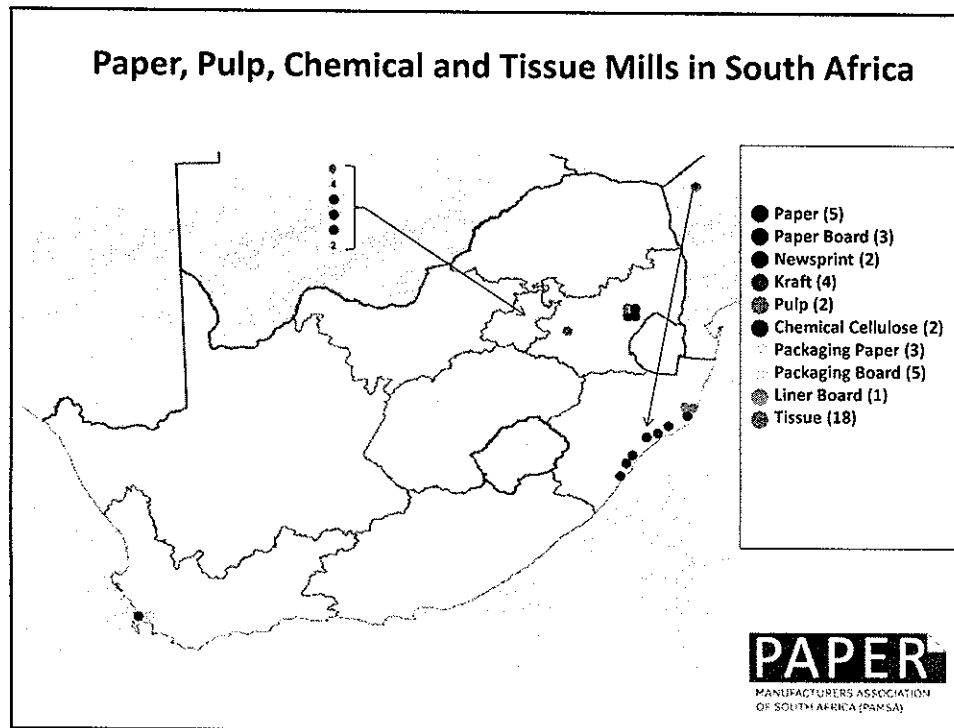
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Renewable Energy Firms in South Africa – Preferred Bidders Geographical Distribution



- A total of 28 preferred bidders, representing 1416 MW
- 18 preferred bidders for photovoltaic solar, representing 631.53MW
- Eight wind projects with a total of 633.99MW
- Two concentrated solar power, representing 150MW

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Cogeneration in the Pulp and Paper Industry

Biomass – It is as renewable as the wind and the sun with the added advantage of quick access to the Grid, high load factors and the potential job creation in the biomass supply industry.

Thank you!