

Biomass Utilisation in Australia

IEA Bioenergy Task 32 Meeting

Salt Lake City

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Bob Saunders – Stanwell Corporation Ltd - Bioenergy Australia

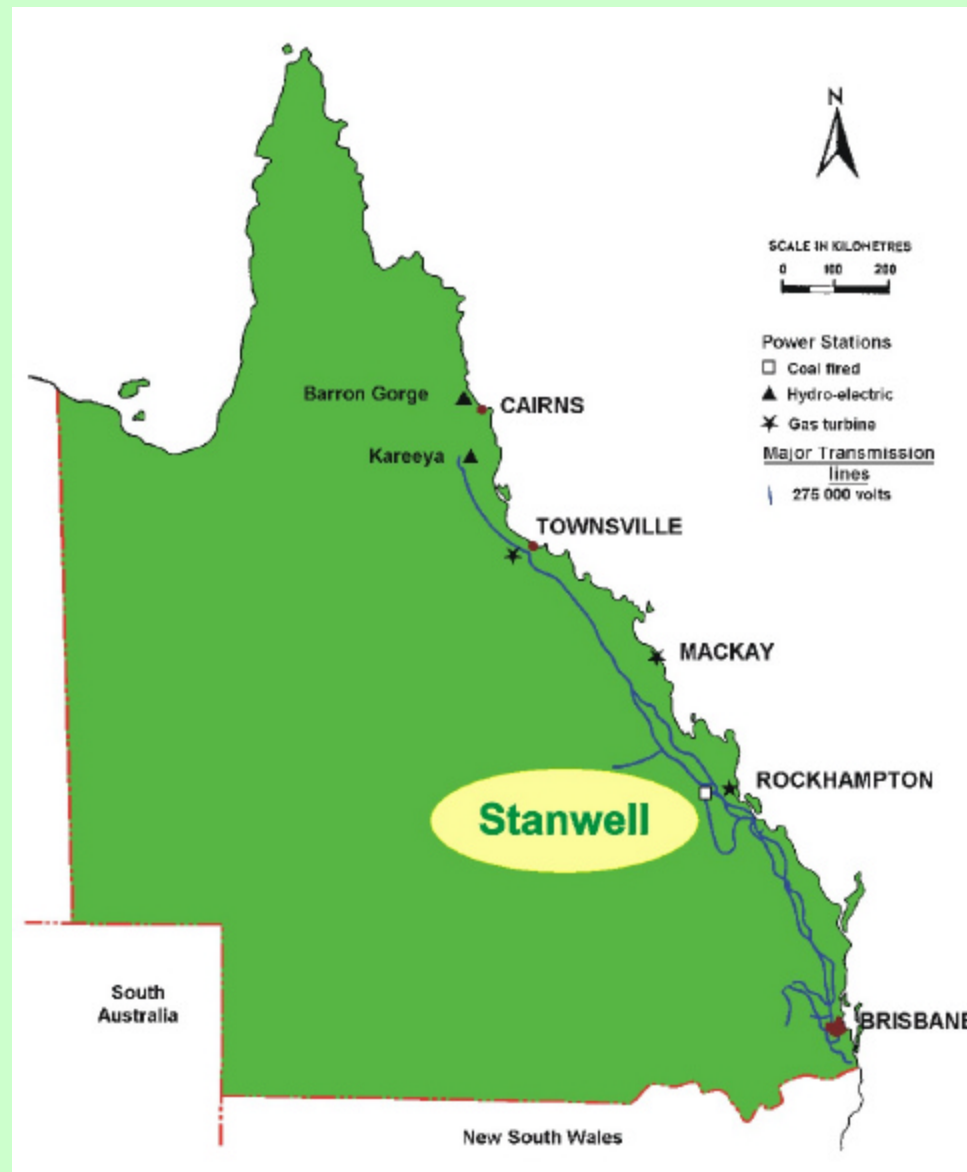
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Introductions

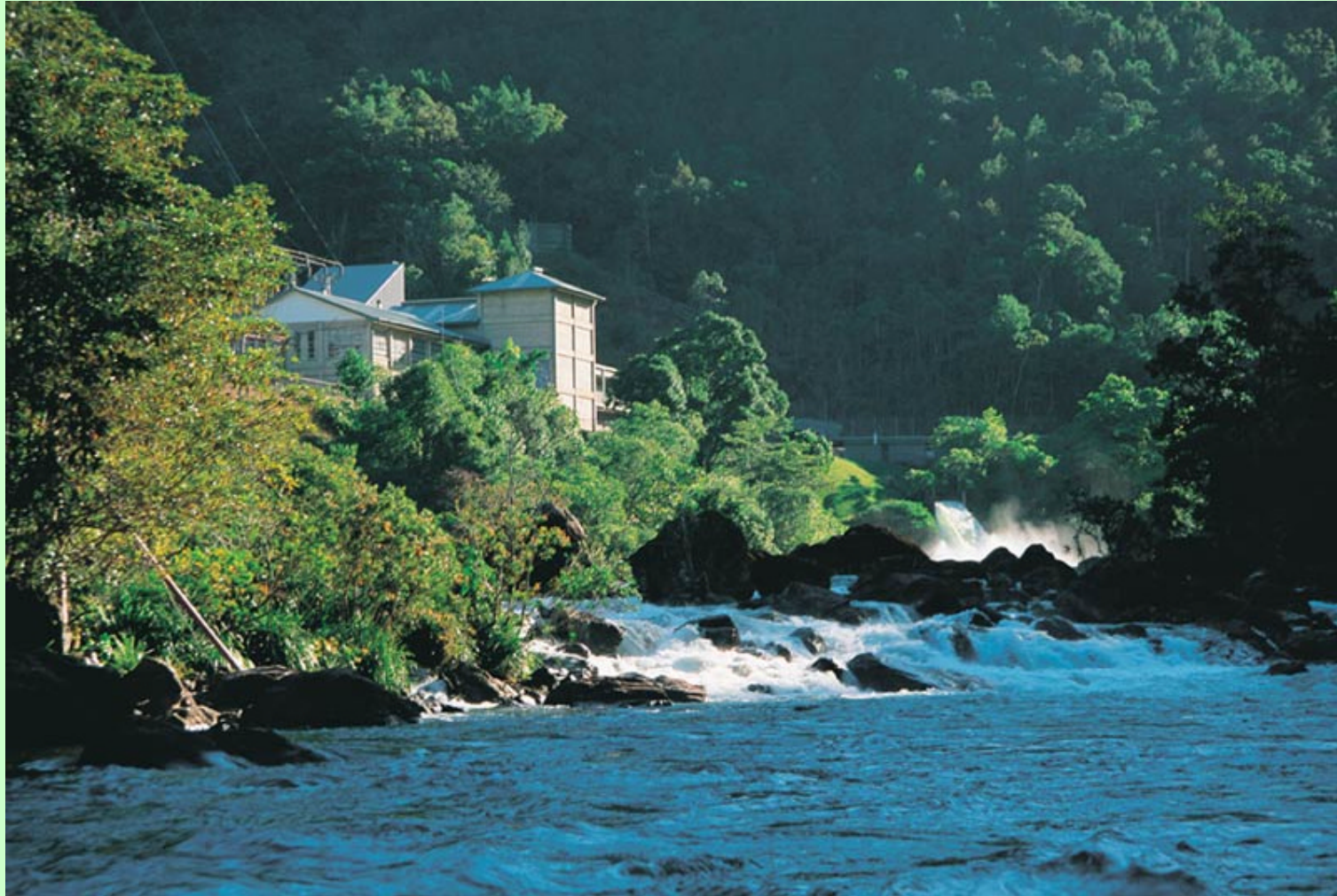
- Bob Saunders – Project Manager Business Development
 - Engineering, management, project development
- Stanwell Corporation
 - Queensland state government owned corporation
 - Coal (Stanwell PS), wind, hydro, biomass (Rocky Pt)
 - 1635 MW total (Queensland 6000MW, Australia)
 - development of renewables, particularly in the sugar industry
- Bioenergy Australia
 - Association of 48 industry, government and research organisations







Stanwell Power Station – Central Queensland 1400MW



Barron Gorge Hydro – North Queensland 60MW



Kareeya Hydro – North Queensland 72MW



Windy Hill Wind Farm – Atherton Tableland NQ 12MW



Great Keppel Island – (no project but nice place!)

Drivers

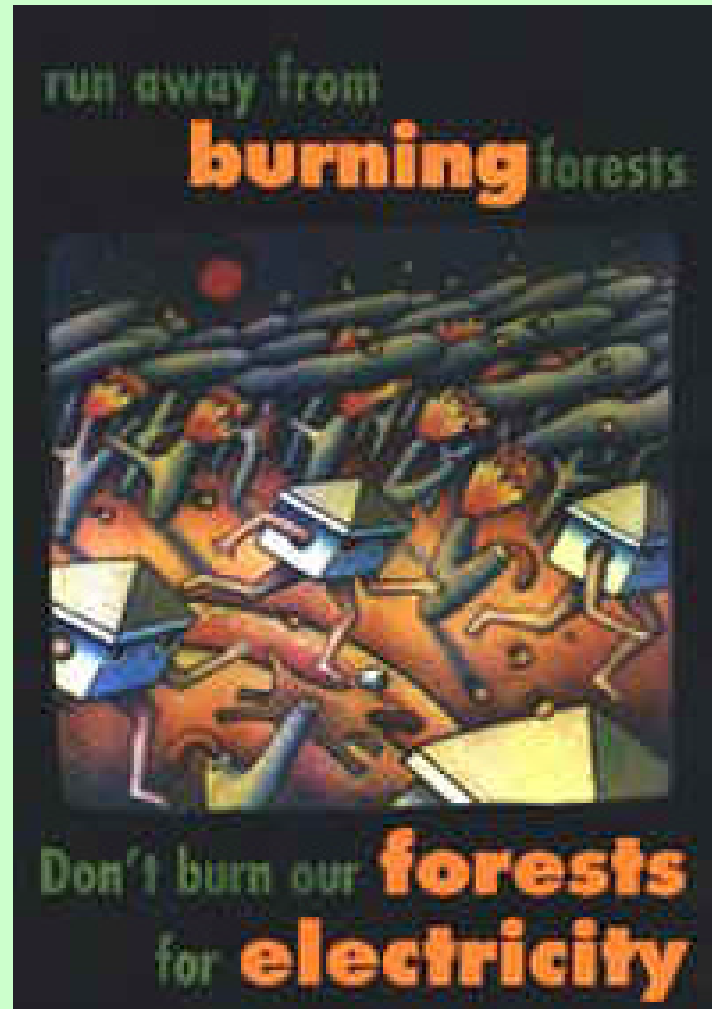
- Kyoto
- Recognition of contribution by energy to green house
- Legislation - Mandatory Renewable Energy Target
 - Additional 2% on 97 levels in 10 years
 - 9500 GWh
 - Renewable Energy Certificates (RECs), premium of US\$19/MWh
 - Total energy price US\$33/MWh
- Availability of sources –
 - timber plantations,
 - Sugar bagasse
 - Sugar cane trash (cane cleaning)
 - Waste streams

Drivers

- State of the sugar industry in Australia
 - Need for smarter use of capital
- Inefficiencies in existing plant, particularly sugar
- Increasing need for waste disposal, costs of disposal
 - Urban
 - Saw mills
- Diversification of generation portfolio
- Green-ness and marketing value
- Niche market - strategic direction

Impediments

- Bucket loads of cheap coal!! US\$0.50 / GJ
- Not enough value yet on cost to environment
 - Emissions
 - Waste disposal
 - Carbon sequestration
- Escalating capital costs of plant
- Perception of risks versus rewards by developers
- Limited expertise, particularly in biomass handling
- Non acceptance by greens,
 - particularly of native forest residues (koala RECs)
 - but biomass in general
 - consequent political disquiet

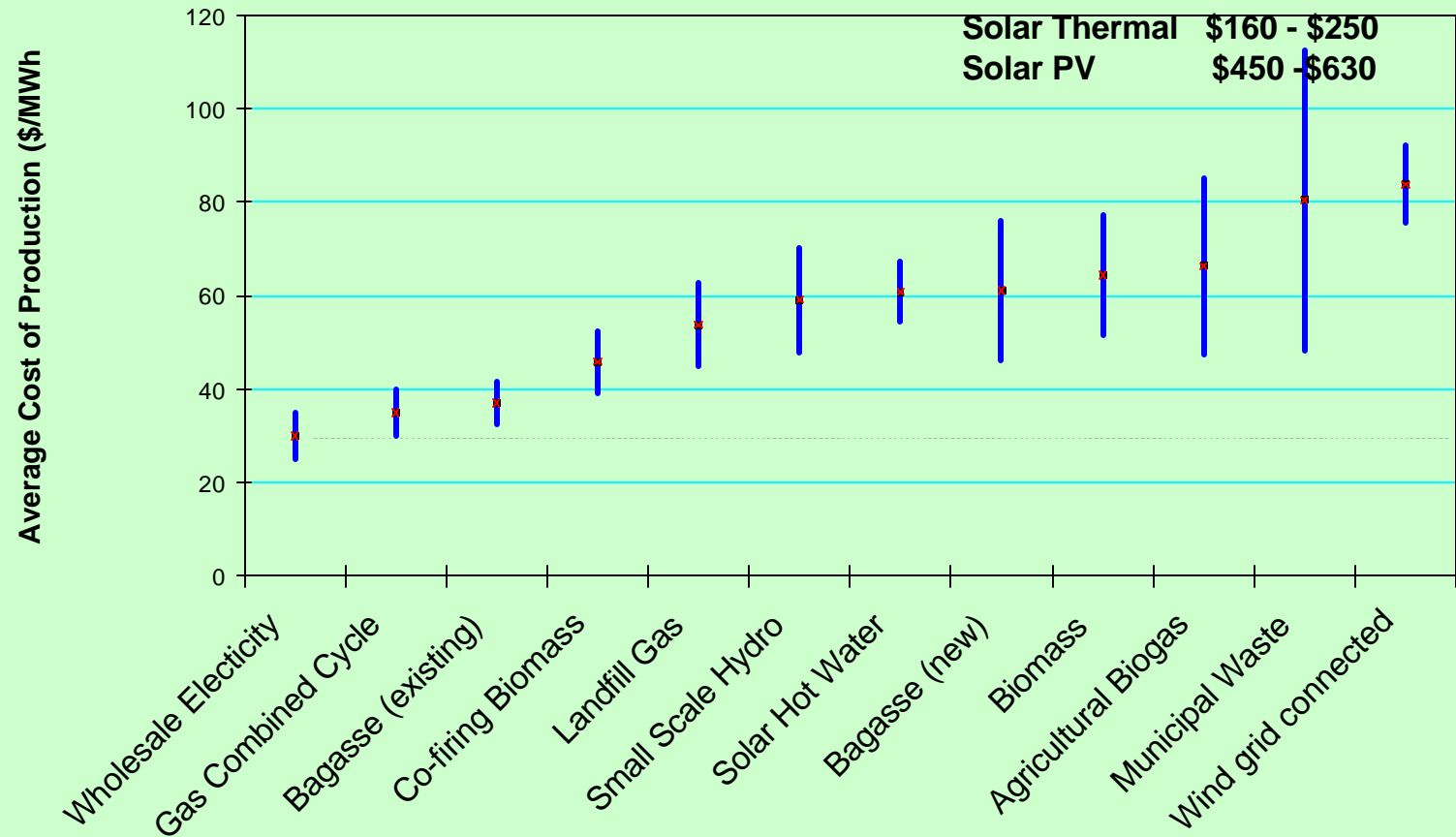


Impediments

- State of the sugar industry in Australia
 - counter party credit risk
 - fuel risk
- State of the forest plantation industry
 - Investment no longer tax effective
 - Long term supply dubious
- World events and attention
- Review of MRET
 - Developers unsure if value of RECs will be maintained
- Lack of clarity of acceptability of fuels
- Onerous auditing requirements

Impediments

- Non acceptance by Environment Protection Agency
- Community perceptions of burning biomass
- Price – wind power putting cap on biomass price



State of Play

- Renewables, particularly biomass, a little on the back burner
- Biomass probably not the contributor to renewables originally envisaged – wind greater than envisaged
- Projects continue particularly where multiple drivers present eg need to get rid of waste plus generate RECs
- Cogeneration and cofiring projects continue development or await the right commercial conditions

Generation and Cogeneration

- Condong Sugar Mill (30MW) bagasse and cane trash
- Broadwater Sugar Mill (30MW) bagasse, cane trash, woody weeds
- Harwood Sugar Mill and Refinery (30MW) bagasse
- Rocky Point (30MW) bagasse, green waste and land clearing
- Invicta Sugar Mill (39MW) bagasse
- Maryborough Sugar Factory Cogen (58MW) bagasse and plantation residues
- Visy Paper Tumut (MW), pine chip and greenwaste
- Auspine ?
- Tantanoola (30MW) pine plantation residues
- Earth Power anaerobic digester – Sydney (fuel cell micro 8MW)
- Brightstar SWERF



Maryborough Sugar Cogen (Stanwell)



Rocky Point Cogen (Stanwell)



Broadwater Sugar Mill (Delta and Sunshine Sugar)

Biomass Cofiring

- Liddell Power Station (Macquarrie Gen)
 - Plantation wood residues, processed vegetable oil
- Wallerawang PS (Delta)
 - Plantation wood residues
- Muja Power Station (Western Power)
 - Plantation wood residues
- Swanbank (CS Energy)
 - Green waste and land fill gas
- Stanwell Power Station (Stanwell Corp)
 - Trials on plantation residues
- Eraring Power Station (Eraring Energy)



Wallerawang Cofiring (Delta)

Research

- CSIRO (Wes Stein)
 - Database on Biomass Characteristics
 - <http://www.det.csiro.au/science/energyresources/biomass.htm>.
- University of Newcastle
 - A Fundamental Study on Combustion Characteristics of Pulverised Coal/softwood Blends

Future

- Review of MRET
 - Target increase?
 - Penalty increase?
- COAG (Parer) review
 - Demise of MRET?
- Return to the environment
- Maturing markets
- Continued development of expertise and learning
- Increased value on waste disposal

Conclusion

- Future will be affected by outcomes of present review of MRET and electricity market Parer Review
- Despite the tight economic conditions projects have and will be developed
- Cofiring proving successful and will be a significant contributor to renewable energy production
- Research and the development of expertise will need to continue in order to support the biomass industry in Australia

