



RWTA National Conference

The National Electricity Market

What the Future Holds

What to do about it

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General Information Only

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Background

- Positive Observations of RWTA & it's Members
 - Energy & Energy Efficiency are clearly on the National Agenda
 - Recognition of Threat/Opportunity posed by energy market
 - Acknowledgement of the importance of energy to the industry
 - RWTA & it's Members are engaged and active in energy matters
 - Real resources have been applied to the issue, not just rhetoric
 - Accessing diverse range of experts (EUAA, Consultants, products & services)
 - Trying a broad range of new initiatives
 - Showcasing success and best practice
 - Sharing knowledge and results
 - Rewarding behavioural leadership
 - RWTA a model for the Peak body of an energy intensive industry
 - RWTA Members likely to have grasped low hanging fruit!!!

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WHY ARE WE HERE?

Utilities Price Inflation*
Year-ended

Components

Water & sewerage

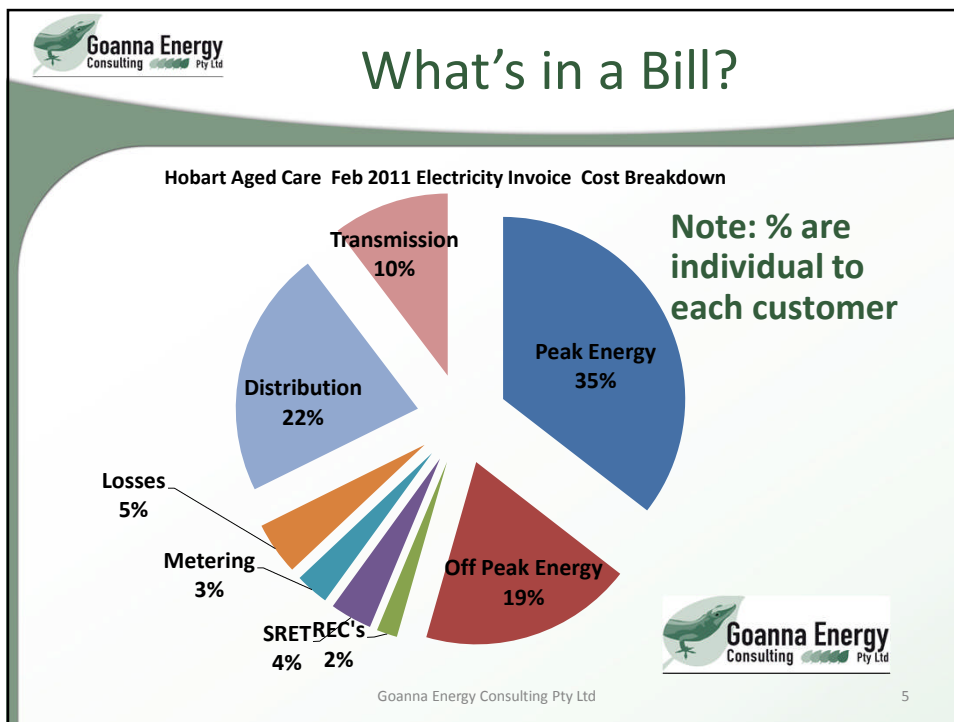
Gas**

Electricity

Source: Dec 2010 RBA Bulletin

* Adjusted for the tax changes of 1999–2000
 ** Includes other household fuels
 Sources: ABS; RBA

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2009 Port Jackson Partners

NOT JUST A CARBON HIT ON ELECTRICITY PRICES

“Many factors will drive a doubling of electricity prices in many states by 2015. This will have a major impact on virtually all businesses.”

Edwin O’Young Principal of Port Jackson Partners Limited (2009)

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2010 GRANT KING CEO ORIGIN ENERGY

“ELECTRICITY prices across Australia were likely to triple over the next 10 years” THE AUSTRALIAN 18/4/2010

Mr King told the Committee for Economic Development of Australia that a combination of the federal government's **mandatory renewable-energy** targets, energy policy uncertainty, higher electricity transmission/distribution costs, and higher fuel costs would drive the increase.

- Boom in sales of energy-inefficient flat-screen televisions
- Cost of electricity **transmission and distribution** (historically 50%), would go **up to 60 – 70% of bills**.
- Large amounts of renewable energy forced into system.
- Fuel prices in **Australia repriced to international levels**.

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19 JULY 2010 CEO ESAA

- *“Financial market upheaval and continuing greenhouse policy uncertainty have contributed to a decrease in the estimated capital expenditure” ...Generation, “over the next five years from \$18 billion in 2009 to \$8.2 billion in 2010”.*
- *“Rising population – including economic growth in regional areas – together with future requirements to connect wind capacity to the grid, and the roll-out of smart meters in some areas are also contributing to an increased investment requirement.”*
- ***“Overall, the 2010 survey results suggest that more than \$94.1 billion is needed to refinance existing generation and network assets and to invest in both existing and new assets”.***

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ENERGY NETWORKS ASSOC

- **ENA 2010 ANNUAL REVIEW**
 - Ministerial Council on Energy (MCE 4 Dec 2009) notes:
 - Price rises expected to occur in coming years, due to
 - Ageing infrastructure
 - Growing Demand
 - Policies to reduce greenhouse gas emissions
 - Recent price review processes approved significant capital expenditure.
 - **Over \$42billion of capital expenditure approved.**
 - Network charges affected by increasing cost of sourcing long-term financing arising from GFC.
 - Competition for technical & engineering staff in still expanding resources sector & relatively tight labour market.

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Network Investment

Electricity Network Capital Expenditure*

June 2009 prices

Year	Capital Expenditure (\$b)
03/04	2.8
04/05	3.2
05/06	3.8
06/07	4.5
07/08	5.5
08/09	6.2
09/10	6.8
10/11	7.2
11/12	7.5

* Estimates for 2009/10 onwards; includes transmission (excluding private interconnectors) and distribution expenditure
Sources: Australian Energy Regulator; Office of the Tasmanian Economic Regulator

AER Internal Review suggested previous rules "Encouraged over-investment in the network infrastructure".
Source: Andrew Reeves SBS Insight "Power Play" 4 Aug 2011

Source: Dec 2010 RBA Bulletin

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Peak Demand Driving Network Investment

Table 2: Demand forecasts for distribution network providers

	Average during regulatory control period		
	Customer numbers '000	Peak demand Average annual growth rate, per cent	Total energy sales
EnergyAustralia - NSW	2,103	2.6	-0.4
Energex - QLD	1,420	3.8	3.6
Country Energy - NSW	1,357	3.6	0.5
Integral Energy - NSW	876	3.6	1.2
ETSA - SA	846	2.4	-0.7
Powercor - VIC	740	4.2	2.1
Ergon Energy - QLD	706	3.4	3.2
SP AusNet - VIC	654	4.5	2.5
United Energy - VIC	638	3.1	2.6
Citipower - VIC	325	2.7	1.7
Jemena - VIC	317	2.6	1.9

Source: AER decisions

Source: RBA
AER Decisions

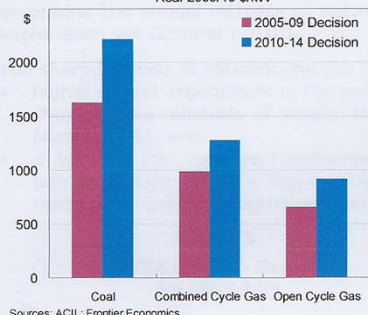


Capital Cost of Generation

Graph 9

Assumed Capital Costs - NSW

Real 2009/10 \$/kW

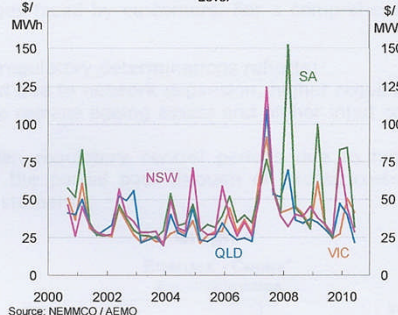


Sources: ACIL; Frontier Economics

Graph 10

Wholesale Electricity Prices

Level



Source: NEMMCO / AEMO

Whilst network cost increases have been one of the recent drivers of overall cost increases, with peak demand growing & the increasing cost of new generation, something has to give doesn't it?

Source: RBA

Retail Costs & Retailers

- State Government monopolies dis-aggregated and privatised since 1995.
- Ensuing Multi-Billion dollar game of “Pac Man” has seen the emergence of dominant energy Retailers.
- Vertical (Re)integration of Retail & Generation portfolio’s offsetting commercial risks of the wholesale and spot markets and in some cases the “Spark Spread” between Natural Gas & Electricity prices.
- Significant investments in Forecasting, Risk Management, Billing, Settlements and Customer Relationship Management Software to handle smart meter data, retail transfers and spot market risks and reconciliations.

Renewable Energy

- Mand. Renewable Energy Certificates LREC ~2% of total cost.
- **Cal 2011 Renewable Power Percentage (RPP) is 5.62%**
- **Will increase each year to 20% in 2020.**
- As the RPP increases each year, so to can the total cost.
- **New Mandatory SRET \$6.208 in Cal 2011 ~4% of total cost.**
- *The sun & wind may be free, but renewable energy isn't* (RD EUAA).
- Renewable technologies continue to decline in cost.
- Some innovators considering what would be required for total disconnection from Grid.
- If/when/as this happens the implications for the rest of us are considerable, grid costs don't go away overnight!



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Price Signal!!!



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TCCO Wedges Report MMA 2009

- Exec Table 2: Abatement potential from lowest cost options in Tasmania.

OPTION (Extract)	COST \$/Tn CO ₂
• Energy efficiency	-\$440
• Increasing freight transport efficiency	-\$349
• Alternatives to air transport	-\$144
• Improved vehicle fuel efficiency	-\$35
• Switching to biofuels for transport	-\$4
• Cogeneration	\$17
• Switching from vehicles to walking and cycling	\$52
• Exporting renewable energy	\$93
• Switching to low emission vehicles	\$98

Source: MMA analysis. For energy options, includes potential for displacing emissions on the mainland.

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Long Term Planning



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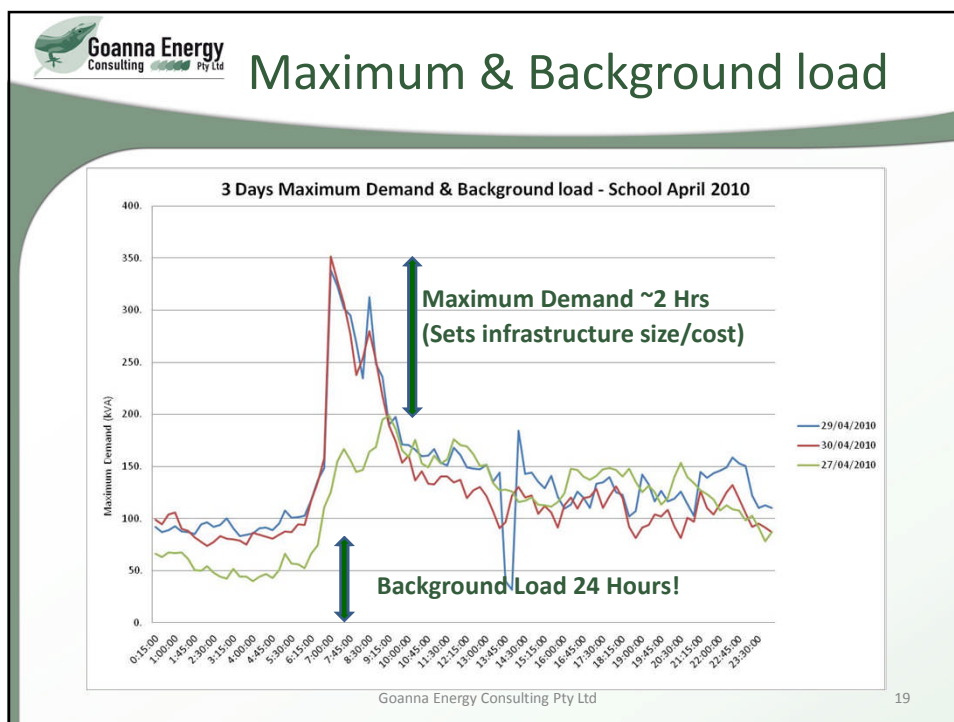
Smart Meters

- Energy and cost data
- Map to it to key Production data
- Develop your own key indicators
- Set Key Performance Indicators (KPIs)
- Monitor and review KPIs
- ***You're paying for it so you may as well access the benefits!***



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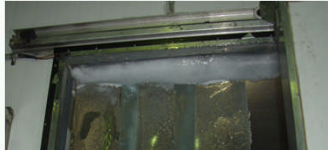
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Future: Cost of Carbon

- Minister Ferguson July 2011, “Treasury modelling suggests a 10% increase in the price of electricity from 1 July 2012”.
- **The only controllable element is your consumption!**
- A reasonable person would surely look to energy efficiency, simply to reduce their exposure.
- We receive far more enquires regarding wind and solar power investments, than Energy Efficiency, but the MMA 2009 “Wedges Report” commissioned by the Tasmanian Government showed **“Energy Efficiency” by far the most cost effective** measure to reduce carbon emissions.
 - EE Save \$440/Tn CO₂e
 - Hybrid Car Spend +\$98/Tn CO₂e



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The last word on energy

- Retail competition appears to have waned.
- Ageing Network & Generation infrastructure.
- Peak demand growth = additional capital investment.
- Renewables remain more expensive in the near term.
- Smart grid technology adds to capital cost in short term.
- Network Regulation in need of review.
- Mandatory Renewables add to cost, must be connected to grid with more new infrastructure, and often must be backed up by new (gas fired) generation plants.
- Carbon Tax from 1 July 2012 will add to costs.

- ***“The Perfect Storm for Energy Users”?*** (RD EUAA)

What can I do about it?

- Do we consider energy in our long term/capital plans?
- Have I negotiated the best contract? *Check the market.*
- Am I on the best network tariff? *Optimise it!*
- Am I being billed correctly? *Each of the 13+ elements!*
- Am I minimising my consumption at Peak Times?
- Am I minimising my Maximum Demand/Power Factor?
- Is all that background load necessary?
- Do I have the best Fuel strategy? *Nat Gas V's Electric?*
- Have I got the most efficient applications/appliances?
- Obvious signs of waste, leaks, comp air, water? *Audit it.*
- Temp settings, staging, insulation, controls, lamps?
- What is best practice? *Are we all alert to the opportunities?*



Thank You

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