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# asx statement

43 May 2008

The following presentations will be made at AGL's Equity Investor Day being held today.

Paul McWilliams Company Secretary

# **AGL Energy Limited**

**Equity Investor Day** 

Presentation Pack Sydney, May 2008



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<sup>»</sup> Equity Investor Day

<sup>»</sup> Sydney, May 2008

# AGL Energy Limited Group Strategy

Michael Fraser Managing Director & CEO

Equity Investor Day Sydney, May 2008



# Agenda

- > Industry Trends
- > AGL Energy Today
- > The Integrated Strategy
- > Strategy Implementation



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# Industry trends

Retail and wholesale energy markets experiencing industry redefining trends.

- > Paradigm shift with carbon pricing & renewables:
  - » Strategic positioning will dictate outcomes for industry players
- > Increased international focus on upstream gas reserves:
  - » Emergence of CSM sector, LNG development focus, reserves upgrades and increased valuations
- > Industry consolidation:
  - » Ongoing consolidation appears set to accelerate with further privatisation and ongoing M&A activity
- > Wholesale (gas & electricity) market volatility:
  - » Increased volatility places focus on getting the upstream physical and contract portfolio settings correct
- > Retail churn and future regulatory pricing:
  - » On-going churn emphasises need for competitive capability
  - » Regulatory pricing management is critical in a rising cost environment









# AGL Energy Today



# AGL Energy today

### Market leading positions deliver substantial strategic value.

- > Australia's largest natural gas & electricity customer base
- > Australia's largest dual-fuel customer base
- Australia's largest privately owned & operated renewable generation portfolio
- Australia's largest contracted gas portfolio & emerging positions in new CSM developments
- Substantial integrated generation portfolio with diversity across geography, fuel type & generation mix
- Industry leading portfolio of renewable & thermal development projects
- A world class, scaleable customer management & billing system (Project Phoenix)
- > Industry leading customer acquisition & service costs
- > 'Iconic' Australian energy brand









# Current portfolio

### **OPERATIONAL SNAPSHOT**

### **Retail Customer Accounts**

- 3.4 million Accounts (includes 100% of ActewAGL JV)
  - 1.5 million gas
  - · 1.9 million electricity
  - · 1.3 million dual-fuel
- . 0.35 million LPG (Elgas)

### **Current Generation**

- ~ 3,500 MW owned and / or operated
- · ~ 315 MW under construction

### **New Generation Developments**

- · ~1,400 MW identified renewables
- ~1,100 MW identified gas

### Current Gas Reserves<sup>1</sup>

- ~3,200 PJs contracted gas
- ~900 PJs equity gas

### **Energy Sales**

- Electricity ~41 TWh p.a.
- Gas ~235 PJ p.a.

### Other

### Elgas (Australia):

- 50% investment in Australia's largest domestic marketer of LPG
- ~350,000 customers

### CSM Energy (Australia):

35% investment in coal mine methane extraction company

1. 1 PJ (Petajoule) = ~1 BCF (billion cubic feet)

### **PNG**

### **Upstream Gas**

• ~ 3.6% equity in proposed LNG project / ~330 PJ



### **SOUTH AUSTRALIA**

### **Customer Accounts**

- 68,000 gas
- 443,000 electricity

### Generation

- . Torrens Island (1,280 MW)
- Hallett 1 Wind farm (95 MW off take)
- Hallett 2 Wind farm (71 MW under construction)
- Wattle Point Wind Farm (90.8 MW off-take)

### Upstream Gas

Cooper Basin - 485 PJ (contract)

### QUEENSLAND

### **Customer Accounts**

- 73,000 gas
- 457,000 electricity

### Generation

- · Yabulu Gas (242 MW) Dispatch Rights
- · Oakey Gs (282 MW) Dispatch Rights

### Hantsons Co

- Moranbah Project (50% equity) 208 PJ
- North Queensland (Moranbah) 121 PJ (contract)
- Bowen / Surat Basin 1,120 PJ (Contract)
- QGC (24.9% equity) ~328 PJ

### **NEW SOUTH WALES**

### **Customer Accounts**

- 751,000 gas
- 252,000 electricity

### Generation

AGL Hydro (62.2 MW)

### **Upstream Gas**

 Sydney Basin - (50% equity) 41 PJ & 116 PJ (contract)

### ACT

### **Customer Accounts**

- 107,000 gas
- 151,000 electricity

### **VICTORIA**

### **Customer Accounts**

- 489,000 gas
- 637,000 electricity

### Generation

- AGL Hydro (583 MW) & Bogong Expansion (140MW)
- Somerton (150MW)
- Loy Yang A Coal (32.5% OF 2,120 MW)

### **Upstream Gas**

- Gippsland Basin 1,014 PJ (contract)
- Otway Basin 300 PJ (contract)

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# The integrated strategy

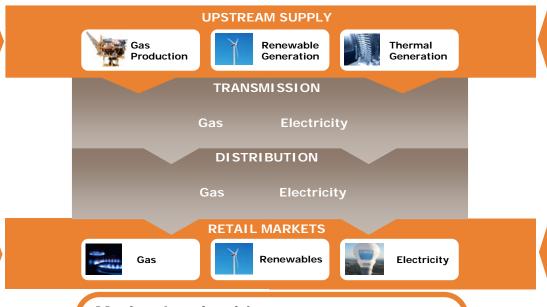
Balancing risk between upstream supply and retail markets, providing access to multiple profit pools.

### **Upstream Gas**

- > Equity gas
- Contract gas
- > Transmission& haulagecontracts
- Gas storage

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Capturing value & growth opportunities



### Generation

- Thermal generation
- > Renewable generation
- Carbon solutions

Capturing value & growth opportunities

Hedge products & trading

### Market Leadership

- > Economies of scale
- > Customer service
- > Sales & marketing capability
- > Regulatory and risk management

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# Strategy implementation

### Key strategic initiatives.

- > Retail:
  - » Industry leading retail cost model
  - » Investing in the brand and competitive capability
- > Upstream:
  - » Growth in renewables
  - » Growth in generation
  - » Gas portfolio management and investment
- > Organisational capability:
  - » Re-shape asset base, restructure balance sheet
  - » Building a high performance culture









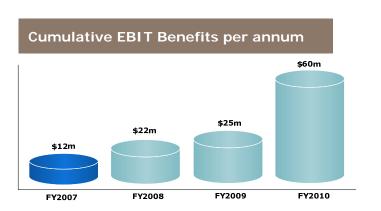
# Industry leading retail cost model

# Generating retail efficiency and cost savings.

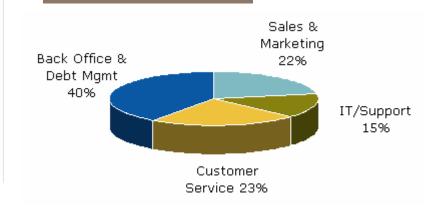
Comprehensive 4 year program – Phoenix - completely rebuilding retail business capability based on model of operational excellence.

### **ACHIEVEMENTS:**

- Successfully migrated over 50% of AGL customer base (~1.6 million)
- On track to substantially complete customer migration in calendar 2008
- > Delivered ~\$22+m p.a. cost savings to date
- On track to deliver a total \$60m p.a. ongoing cost savings









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# Investing in the brand and competitive capability

### Establishing world class competitive capabilities and brand value.

Phoenix also delivers the ability to operationalise material improvements in marketing & customer service.

### **ACHIEVEMENTS:**

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- Increased investment in direct sales activity and new channel partners, early deployment of Phoenix planned around win-back campaigns
- > Brand activation traditional marketing:
  - » Launched advertisements across all media, billboards, disruptive marketing
  - » Enhanced online capabilities new website and enhanced online optimisation and marketing capabilities
- > Brand activation external positioning:
  - » Across Government & media, business clients and retail customers
  - » Developing new product lines (carbon) and new channel strategies





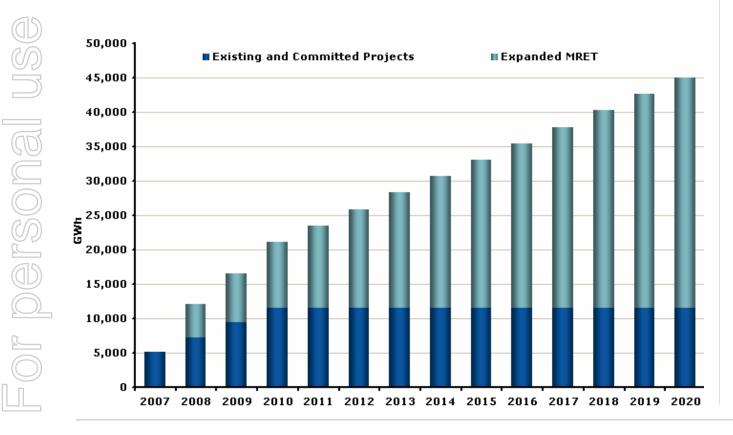




# Growth in renewables

### **Expanded Mandatory Renewable Energy Target (MRET).**

AGL's existing & identified renewable generation projects place it in a market leading position to benefit under expanded MRET target.



- New federal Government Policy
   by 2020 an additional 35,500
   GWh p.a. of renewable energy
   required to meet the target of 45,000 GWh p.a.
- Policy reconfirmed 6 March 2008 by Federal Government
- If all new capacity wind implies ~12,000 MW of new renewable capacity
- > Total investment value of implied capacity ~\$27 billion:
  - » based upon 35% capacity factor & \$2.3 million per MW
- > Trajectory to reach target to be determined in coming months

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## Growth in renewables

### Fastest growing renewable portfolio.

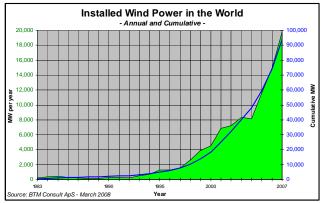
Continued focus on developing portfolio of renewable projects to deliver sustainable benefits in a carbon constrained environment.

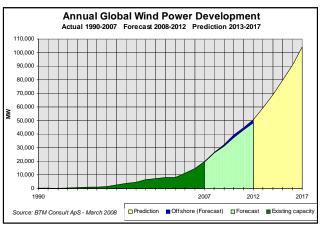
### **ACHIEVEMENTS:**

- Hallett 1 (95MW) wind farm completed on budget and on time
- Bogong Hydro (140MW) ahead of schedule and on budget
- > Hallett 2 (71MW) wind farm development commenced
- > Hallett 3 (90MW) wind farm development rights acquired
- Macarthur (330-450MW) wind farm joint development agreement executed

### **DEVELOPMENT PROJECTS:**

Additional ~1,400MW's









# Growth in generation

### Continuing growth in portfolio of generation assets.

Development and acquisition of generation assets to deliver increased control over wholesale electricity costs, reduce risk and access additional profit pools.

### **ACHIEVEMENTS:**

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- Acquired 1,280MW Torrens Island Power Station (SA) intermediate & peak load
- Acquired dispatch rights to 282MW Oakey Power Station (QLD) peak load
- Acquired dispatch rights to 242MW Yabulu Power Station (QLD)
   base load

### **DEVELOPMENT PROJECTS:**

> ~1,100MW's







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Disciplined execution of upstream equity gas and wholesale supply contracts.

Existing contract gas portfolio has material depth and flexibility across multiple markets, will remain market competitive

Supplementing contract portfolio with additional equity gas reserves:

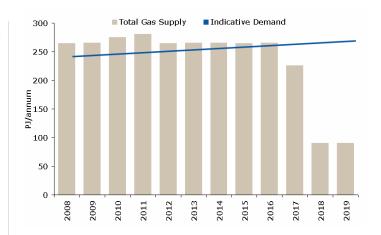
Discipline around trade-off between acquiring equity gas & EPS impacts

### **ACHIEVEMENTS:**

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- > QGC 740PJ, 20 year GSA and 24.9% equity stake
- Expansion of JV with Arrow Energy
- > Continued development of Sydney Basin JV
- Maintain flexibility to invest upstream or enter further contracts with existing suppliers based on value

### AGL wholesale contracted gas supply



### QGC value accretion<sup>1</sup>

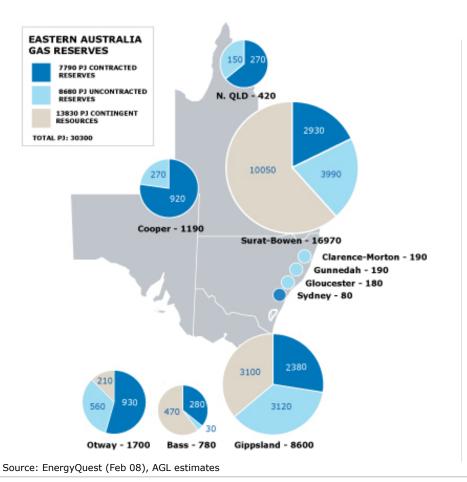


1. As at 5 May 2008. market capitalisation + net debt / 2P reserves

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### Eastern Australia demand including substantial LNG exports.



Eastern Australia 2P gas reserves and contingent resources exceed 30,000 PJ of which only ~26% are contracted:

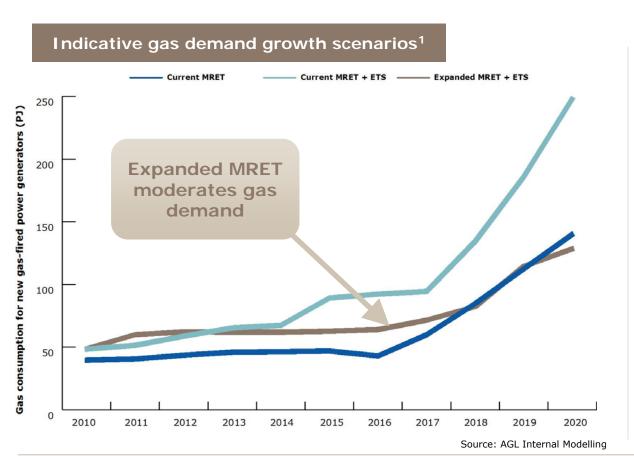
- Further increases are likely, particularly CSM reserves
- Supply covers current East Coast gas sales (~640 PJ pa) for over 40 years
- Could cover potential domestic gas sales and LNG exports<sup>1</sup> of ~1,000 PJ pa for 25 to 30 years

1. Based on two LNG trains

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Gas demand materially moderated under Federal Government's proposed ETS and expanded MRET policies.



- Expanded MRET drives uptake of renewable generation at the expense of higher gas volume base load (CCGT) gas generation
- Expanded MRET diverts development to lower gas volume peak load (OCGT) gas generation

### <sup>1</sup> Assumptions:

- Utilisation of a least cost model of the National Electricity Market (NEM)
- Publicly available assumption for new entrant and existing generators
- The second emission reduction trajectory published by the National Emissions Trading Taskforce ("States") 150mt by 2020 adjusted to reflect the NEM

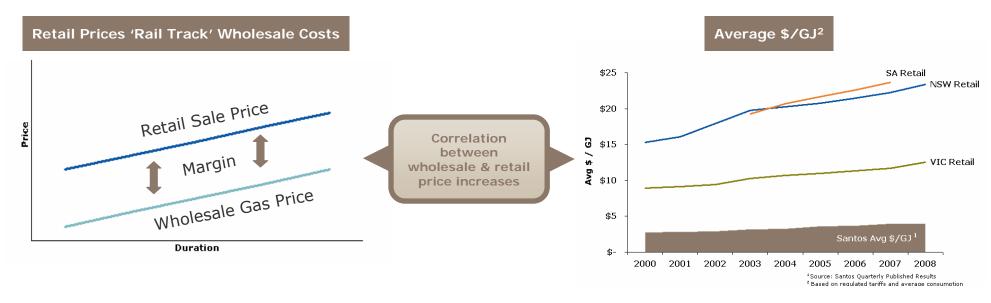
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### Pricing mechanisms ensure ongoing margin maintenance.

- > Considerable portfolio flexibility: ACQ 'up & down', MDQ, ToP & flexible delivery points
- Rolling buy long / sell short portfolio strategy
- > Market price reviews & contract flexibility ensures ongoing, sustainable competitiveness
- Independent arbitrators ultimately determine contract price with reference to 3rd party gas supply contracts
- Regulators reflect wholesale gas price escalation in tariffs if retailer can demonstrate prudent portfolio management



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# Re-shape asset base, restructure balance sheet

### Maximising balance sheet efficiency.

- Current asset base includes some assets that are sub-optimal from a capital deployment and/or structural perspective
- Disposal and/or restructure will deliver superior financial and/or operational outcomes/options for growth in core businesses

### **ACHIEVEMENTS:**



- > AlintaAGL (Western Australian gas retail JV: 33% AGL):
  - » Sold for \$520 million delivering pre tax profit of \$125 million
  - » Settled 12 December 2007
- > GasValpo (Chilean gas distribution business: 100% AGL):
  - » Sold for US\$ 90 million
  - » Settled 30 April 2008



- > PNG (oil & gas investment: ~3.6% AGL share of gas (LNG) project):
  - » Fiscal terms of PNG LNG project agreed by PNG Govt.
  - » Considerable domestic and international interest in stake
- > North Queensland Gas Pipeline (Moranbah JV: 50% AGL):
  - » Optimised asset & contractual mix to secure rights of upstream gas merchant business, sale process underway
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# Re-shape asset base, restructure balance sheet

### Disciplined approach to NSW privatisation.

- Exact structuring and timing yet to be formalised:
  - » Offering no comment/thoughts on potential sale structures until formally finalised by NSW Govt
- Recent macro economic and market conditions pointing to uncertainty on asset values
- > Generators key valuation issues:
  - » Carbon legislation & glide path pending
  - » Future pricing of coal (primary fuel source)
- AGL's current NSW market position makes organic growth a viable option:
  - » AGL has ~750,000 NSW gas customers
  - » AGL has ~250,000 NSW electricity customers













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# Building a high performance culture

### Performance culture that empowers, recognises and rewards.

To remain competitive we need high calibre individuals and a high performance culture where people are accountable, empowered, recognised and rewarded.

### **ACHIEVEMENTS:**

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- > Defined a clear brand promise and values
- > Applying an intensive focus on employee safety
- Measured and continue to track employee engagement via Hewitt Survey
- > Introducing a new performance management process
- Increased priority and compliance on regular 1-on-1 meetings and development plans
- Applied major focus on improving IT systems, responsiveness and desktop experience
- > Introduced web based leadership academy for senior leaders









# **Operational Targets**

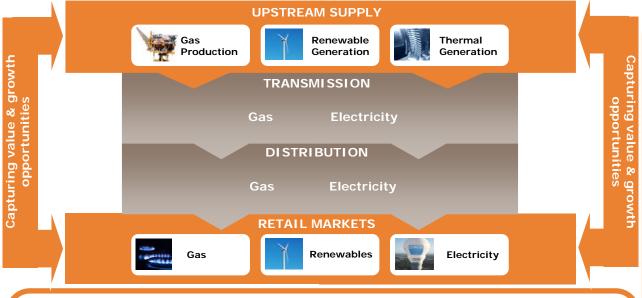


# Operational targets

The integrated strategy balances risk between upstream supply and retail markets whilst providing access to multiple profit pools.

### **Upstream Gas**

- Direct ownership of ~2,000 PJ (2P) over the medium term
- Essentially CSM strategy
- Disciplined decision around trade-off between acquiring gas and EPS impacts
- Will continue to contract if achieves superior outcome



### Market Leadership

- Potential base of 4 to 5 million customers given any participation in NSW privatisation
- > Customer base / channel to market important in leveraging upstream strategy & achieving retail economies of scale
- > Ultimate focus on managing and growing margin, not specific customer numbers targets

### Generation

- Currently ~3,800 MW of capacity owned and/or operated and under construction (~315 MW)
- Medium term target of ~6,000 MW
- > Achieve 60-70% of load (capacity) internally covered to deliver desired portfolio outcomes

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# AGL Energy Limited The New Energy Economy

Renewable Energy & Emissions Trading

Jeff Dimery Group General Manager Merchant Energy



Equity Investor Day Sydney, May 2008

# Agenda

### **Climate Change Policy:**

- > Global Landscape
- > Australian Landscape

### The Emergence of the New Energy Economy:

- The Expansion of MRET
- > Emissions Trading

### Impacts on AGL:

- > AGL's Generation Portfolio
- > Loy Yang Power



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# Climate Change Policy



# After Kyoto: the global landscape

### **United Nations Framework Convention on Climate Change:**

- Next phase after Kyoto
- Most commentators expect a broad global agreement to be announced in Copenhagen in 2009 for beyond 2012

### **Europe & UK:**

- Emissions Trading Scheme now in Phase 2
- New policies being negotiated for beyond Phase 2
- > 20% renewable energy (not just electricity) target for 2020
- > 20% cut in emissions (30% if international agreement reached)

### **USA:**

- Regional Greenhouse Gas Initiative (RGGI), a trading scheme for north western states
- Multiple Bills restricting greenhouse gas emissions have been introduced including the McCain/Lieberman Bill
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# The Australian landscape

### **Expansion of the Mandatory Renewable Energy Target (MRET):**

- > Target to increase from 9,500GWh in 2010 to 45,000GWh in 2020
- > One of the most significant policy measures ever flagged for the energy sector

### **Emissions Trading Scheme implementation in 2010:**

- Garnaut Review to provide input to Government on targets and scheme design by mid 2008
- > Government's Green Paper in July will provide insight into the detail of the scheme

### Wilkins Review of climate change policy

### Other government funding initiatives:

- \$500 million clean coal Commonwealth Government
- > \$500 million renewable energy Commonwealth Government

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# The Emergence of a New Energy Economy

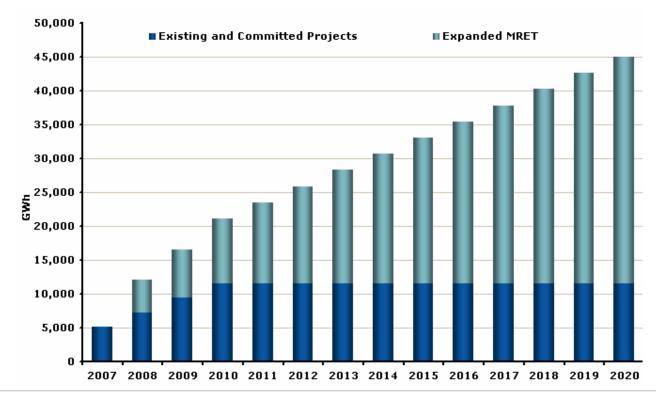
Renewable Energy Target



# The expanded renewable energy target

# Expansion of MRET significantly alters the outlook for the energy market moving forward:

Additional 35,500GWh or 11,600MW of renewable energy capacity requires investment in excess of \$27b



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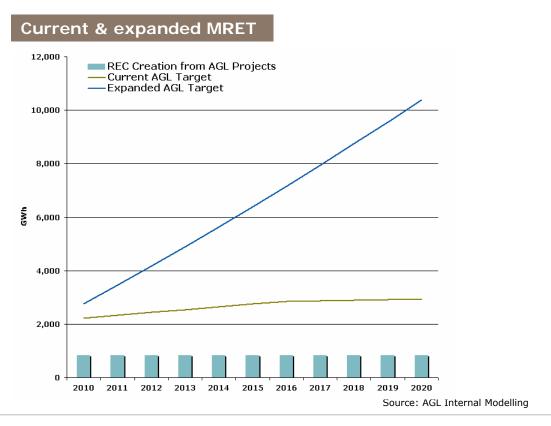
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# AGL's opportunity under the expanded MRET

Expansion of the MRET scheme results in significant opportunity for development of renewable generation to self supply AGL's requirement for renewable energy certificates.



- AGL's existing renewable assets provide a significant proportion of its target under the current MRET
- An expansion of MRET will provide AGL with significant opportunity to increase its portfolio of renewable assets



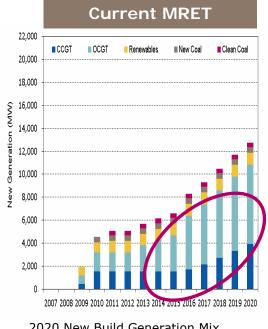
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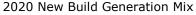
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# Growth in renewables

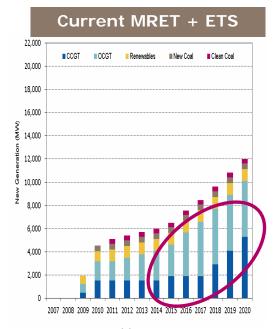
### Indicative new build generation mix

Investment in renewable generation under expanded MRET displaces gas fired generation and moderates gas demand as a transitional fuel.



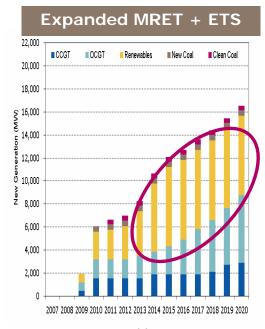


- CCGT ~ 3,900 MW
- OCGT ~ 6,900 MW
- Renewables ~ 1,000 MW
- Balance coal



### 2020 New Build Generation Mix

- CCGT ~ 5,300 MW
- OCGT ~ 4,800 MW
- Renewables ~ 1,000 MW
- Balance coal



### 2020 New Build Generation Mix

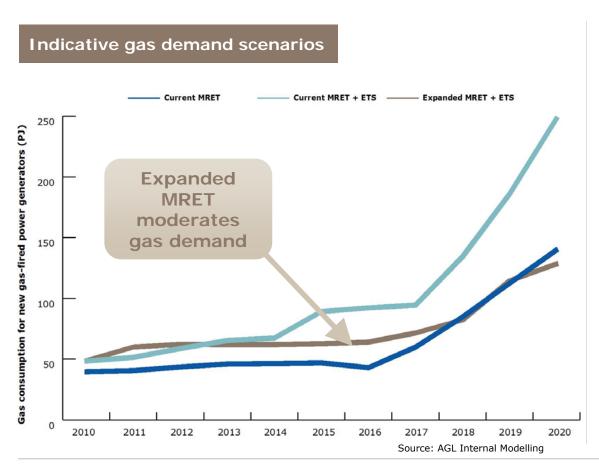
- CCGT ~ 2,900 MW
- OCGT ~ 5,900 MW
- Renewables ~ 6,900 MW
- Balance coal
- Source: AGL Internal Modelling

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# Gas market impacts

Gas demand is materially moderated under the proposed expansion of the Mandatory Renewable Energy Target.



A significant increase in gas demand was anticipated with the introduction of an ETS:

 CCGT expected to displace OCGT as most economically efficient means to meet emissions target

Expansion of MRET reduces requirement for non renewable capacity:

 Emissions targets met without CCGT due to renewable generation delivering 0.4 tonnes of abatement in excess of CCGT

Expansion of MRET requires greater capacity of OCGT to deliver system security:

 Significant implications for pipeline haulage capacity at times of peak energy demand

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**Emissions Trading** 



## Emissions trading: an example

#### **Assumptions:**

- > One gas producer Both covered by a cap and trade
- > One electricity generator
- > Economy wide emissions equal 150 tonnes (tCO<sub>2</sub>-e)

#### **ETS Introduced:**

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- $\rightarrow$  Cap of 125 tCO<sub>2</sub>-e
- > 120 permits are allocated and 5 permits are auctioned (1 permit =  $1 \text{ tCO}_2^{-e}$ )

Emissions		Permits Held	Emissions Cap
Gas Producer	50 tCO <sub>2</sub> -e	40 tCO <sub>2</sub> -e allocated	125 tCO <sub>2</sub> -e cap for the
Coal Generator	100 tCO <sub>2</sub> -e	80 tCO <sub>2</sub> <sup>-e</sup> allocated	economy

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## Emissions trading: an example

#### **Trade Commences:**

> Gas producer buys 5 permits at auction and 5 permits from the coal generator

Emissi	ons		Permits Held	Emissions Cap
Gas Producer		50 tCO <sub>2</sub> -e	Allocated = $40 \text{ tCO}_2^{-e}$ Bought at auction = $5 \text{ tCO}_2^{-e}$ Bought from coal generator = $5 \text{ tCO}_2^{-e}$ Total permits = $50 \text{ tCO}_2^{-e}$	125 tCO <sub>2</sub> -e cap for
Coal Generator		100 tCO <sub>2</sub> -e	Allocated = $80 \text{ tCO}_2^{-e}$ Sold to gas producer = $5 \text{ tCO}_2^{-e}$ Total permits = $75 \text{ tCO}_2^{-e}$	the economy

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## Emissions trading: an example

#### Low emissions investment commences:

- > Gas producer maintains production but at higher cost
- > Coal fired generator cuts production
- > New renewable generator is constructed to meet energy demand

Emissions		Permits Held	Emissions Cap	
Gas Producer		50 tCO <sub>2</sub> -e	Allocated = $40 \text{ tCO}_2^{-e}$ Bought at auction = $5 \text{ tCO}_2^{-e}$ Bought from coal generator = $5 \text{ tCO}_2^{-e}$ Total permits = $50 \text{ tCO}_2^{-e}$	
Coal Generator		Reduced production to emit 75 tCO <sub>2</sub> -e	Allocated = $80 \text{ tCO}_2^{-e}$ Sold to gas producer = $5 \text{ tCO}_2^{-e}$ Total permits = $75 \text{ tCO}_2^{-e}$	125 tCO <sub>2</sub> -e cap for the economy
Renewable Generator		Zero	Zero emissions generation: Requires no permit	

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## The new energy economy with an ETS

Source: AGL Internal Modelling

# Impact on generators ■ Pool Price Increase Resulting from ETS ■ Cost of Buying Permits ■ Net Realised Pool Price Uplift Coal Generator Gas Generator Renewable Generator

- Key issue for each generator is the emission intensity of plant, carbon price and emission intensity of the market
- Where individual plant emission intensity is lower than market average, pool revenues increase beyond the cost increase for that plant:
  - » Existing renewable generation is the biggest winner under an ETS
- Over the long term, existing high emissions generators (coal) are likely to experience reduced margin and reduced output:
  - » Long-term effects are likely to be partially mitigated by Government through permit allocation to compensate for disproportionate loss

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# The New Energy Economy

Impact on AGL



# Australia's No1 private investor in renewable and low emission generation

AGL's industry leading hydro, renewable & gas fired generation portfolio delivers a competitive advantage over direct competitors.

	Туре	Capacity	Approximate Emission Intensity (tCO <sub>2</sub> -e/MWh)
Southern Hydro	Hydro	645MW	Zero
Bogong	Hydro	140MW	Zero
Hallett I & II	Wind	166MW	Zero
Torrens Island	Gas	1280MW	0.7
Somerton	Gas	150MW	0.7
Yabulu	Gas	242MW	0.7
Oakey	Gas	282MW	0.7
AGL Low/Zero	Emission A	0.4	
Loy Yang	Coal	689MW	1.2
AGL Overall Em	nission Aver	0.7	
NEM Average		<b>1.0</b> Source: AGL Internal Estimate:	



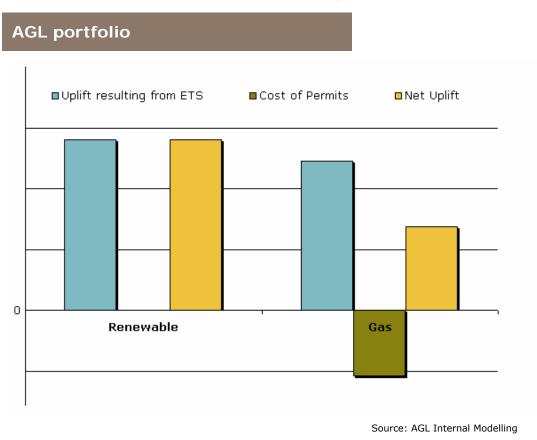


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## Impact on AGL's portfolio

The future value of AGL's generation portfolio will increase in a carbon constrained energy economy.



- AGL's renewable and low emission generation portfolio has a lower emission intensity than the NEM average
- This portfolio will realise a net benefit from the increase in electricity pool prices that will result from the introduction of an ETS
- Pool revenue increase will outweigh any costs associated with permit acquisition

#### **Assumptions:**

- > Carbon price of \$20/tonne
- Pool price uplift of \$16.80/MWh
- Uplift discount on Southern Hydro of 70% due to profile of energy dispatch

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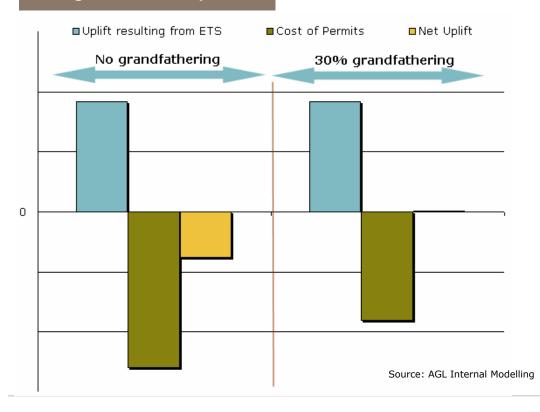
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## Case for compensation – coal generation

A smooth transition to the new energy economy is essential to ensure Australia's economic prosperity.

#### Coal generation impacts



#### Ongoing reliability of supply:

- Continued availability of capacity existing generation cannot be replaced in the short term
- High standards of plant performance - loss making entities will not invest in ongoing operations

#### Liquidity & market function:

 Lack of investment certainty created by the sovereign risk associated with no permit allocation will impinge upon the effective function of the market and impede liquidity

#### **Assumptions:**

- > Carbon price of \$20/tonne
- Pool price uplift of \$16.80/MWh

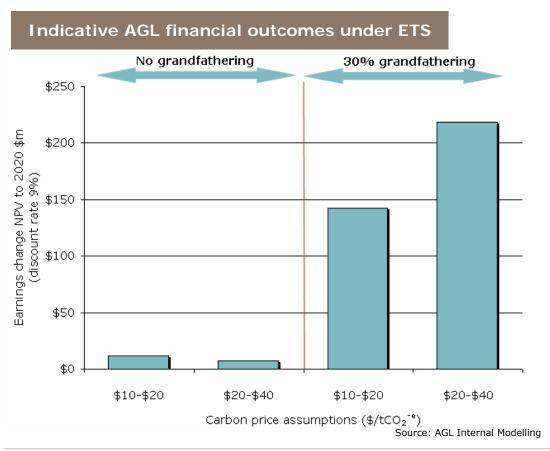
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## Emissions trading scheme – financial impacts

The Federal Government's planned ETS will potentially deliver upside to the current and planned AGL portfolio.



- The diagram at left highlights the potential impacts to the current,
   3,800MW¹ AGL owned and/or operated generation portfolio under an ETS
- Without grandfathering, portfolio diversity still results in a marginal positive impact
- With grandfathering, and as AGL builds out its planned generation portfolio, material upside potential exists

#### **Assumptions:**

- Based upon NETTS II emission profile
- Pool price uplift reflects NEM average (discounted for peaking)
- Cost increases reflecting plant emissions intensity
- > Outputs based on historical averages

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## Key Strategic Priorities



- > Work with Government to ensure detailed policy outcomes are consistent with a smooth transition to the new energy economy
- Develop a competitive portfolio of supply for AGL in the new energy economy
- Leverage AGL's expertise and leading position in renewable and low emission generation to develop new markets and products to contribute to the future profitable growth of AGL

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## AGL Energy Limited Wind Farms – Technical and Project Fundamentals

Mike Moraza Group General Manager Gas & Power Development



Equity Investor Day Sydney, May 2008

## Agenda

- > Why Invest in Wind Farms?
- > Key Success Factors for Wind Farm Development
- > Australia's Wind Resource
- Wind Turbine Technology Maximising Yield
- > Strategic Direction



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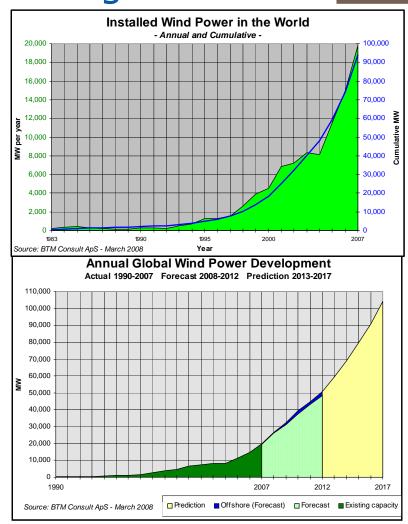
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Why Invest in Wind Farms?



## Wind power showing strong global growth

- Cumulative global capacity reached 94,000 MW by the end of 2007
- New global capacity installed in 2007 was 19,791 MW
- Average growth rate in period to 2012 expected to be 20.7% per year



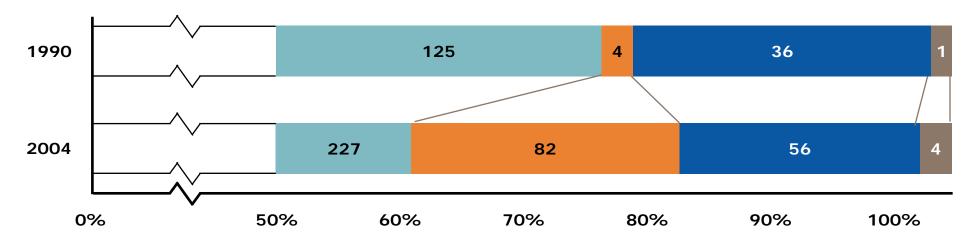


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## Wind compared to other renewables

#### Fastest growing global renewable energy source\*



#### \* Generation in TWh

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> Low cost renewable energy source

- Mature technology
- Meets scale needs of industry

Source: IEA WEO 2006

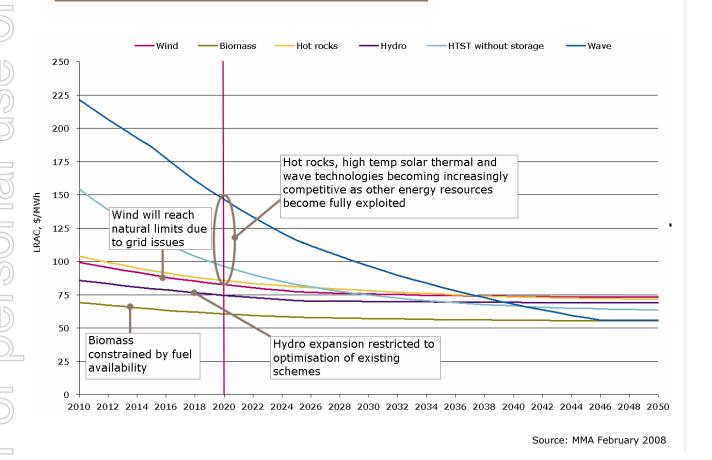
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## Wind is competitive on the cost curve

#### Renewable energy cost curve summary



- Wind will dominate as the most economic large scale renewable technology for the next 10 years
- Other viable renewable energy sources will emerge in the next decade
- Wind has low technology risk with a proven track record

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## Key Development Success Factors



## Key development success factors

A number of critical issues can mean success or failure of a wind farm development:

- > Wind resource
- > Land access (support by landowners)
- > Capital cost (10 times more important than O&M costs):
  - » Typical split of capital costs for 70MW wind farm:
    - 86% EPC, 11% electrical connection, miscellaneous 3%
- > Connection access: (cost, loss factor, grid capacity)
- > Wind farm scale (to absorb certain fixed cost)
- > O&M costs (typically only around 1.5% of capital cost per year)

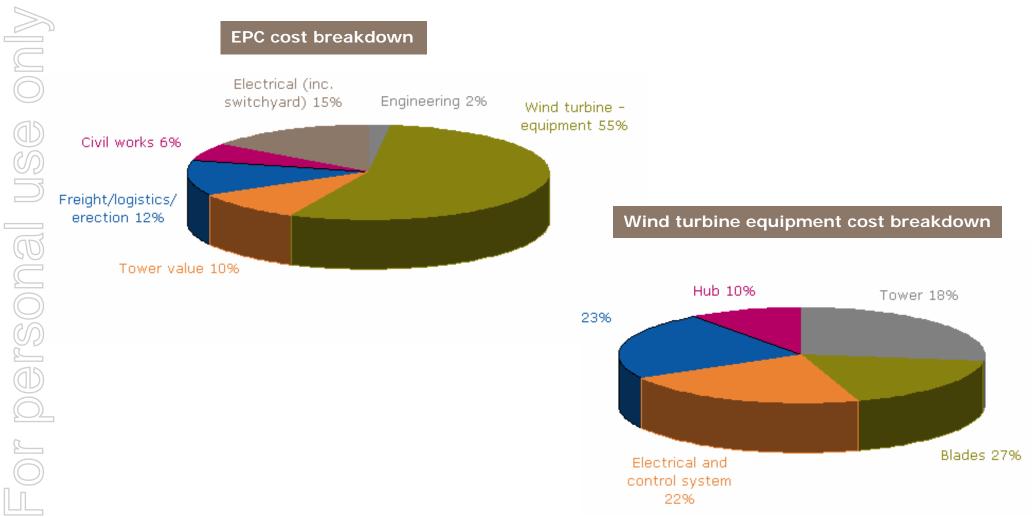
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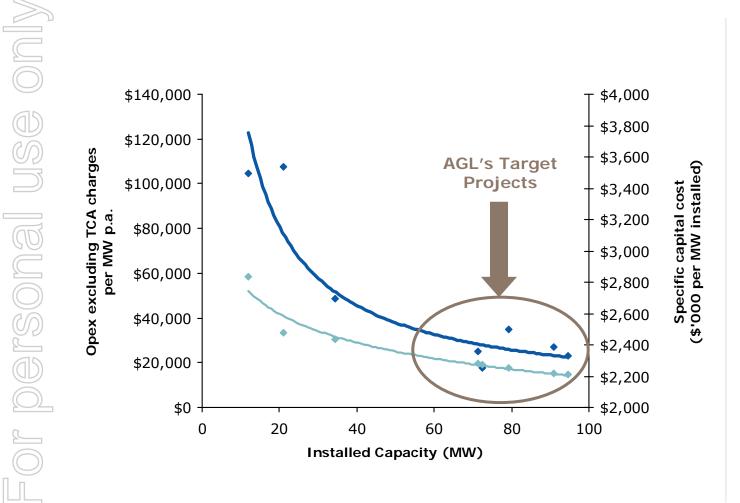
## High level cost breakdown



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## AGL's approach to wind farm development



- Target high wind yield locations where communities are supportive
- Target scale projects to overcome high fixed cost components in civil works, balance of plant and electrical connection



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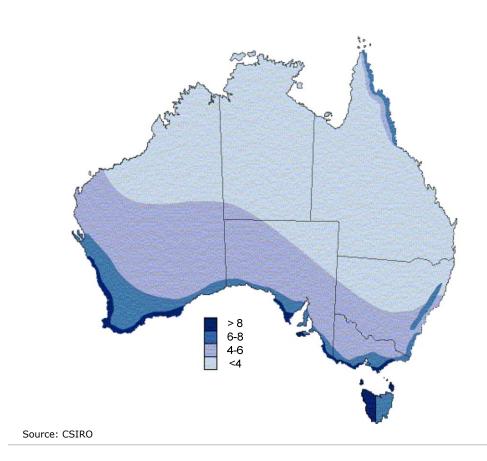
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## Australia's Wind Resource



### Australia has a world class wind resource

Average wind speeds (metres per second)



- Wind resource is best in Tasmania and areas in Western Australia, South Australia and Victoria
- NSW, Queensland and the Northern Territory have limited large scale wind potential
- The best wind sites are already being taken in Tasmania, South Australia and Western Australia

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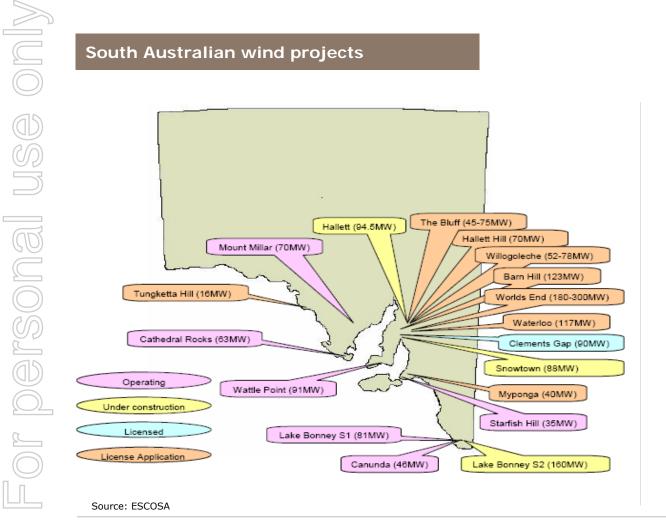
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## South Australia leads the market in wind

#### South Australian wind projects



- South Australia has 900 MW of committed projects
- Above 1,400 MW, increasing risk of dispatch constraint
- AGL's Hallett wind project complex could support about 500 MW of renewable energy generation

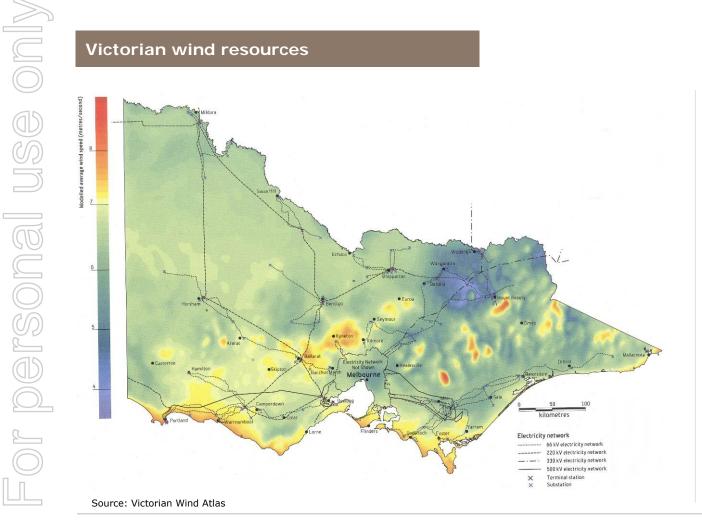
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## Victoria's wind project potential is strong

#### Victorian wind resources



- Victoria's wind resource is best along the coast
- Recent VenCorp study stated that about 4,000 MW of wind capacity can be connected to the Victorian electricity network
- Victoria currently has about 200MW of wind projects in operation

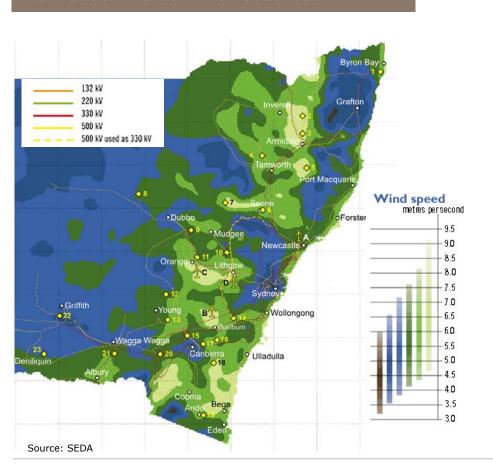
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## NSW has some wind project potential

#### **New South Wales wind resources**



- NSW wind resource is generally moderate. Most projects lack scale
- NSW network capacity can handle several thousand MW of wind farms
- Currently less than 100MW installed in NSW

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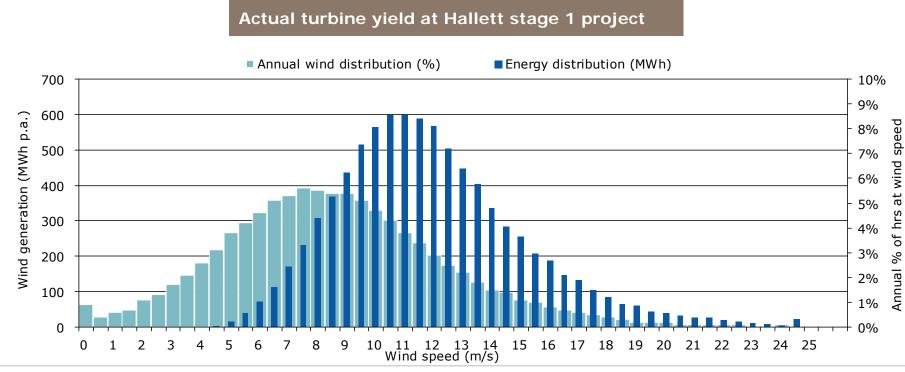


## Wind Turbine Technology – Maximising Yield



## Wind turbine yield drives overall project economics

- > Each site has a unique wind distribution around a mean
- > Turbine power curve defines power output as a function of wind speed
- > Yield is total output of the wind distribution across the power curve



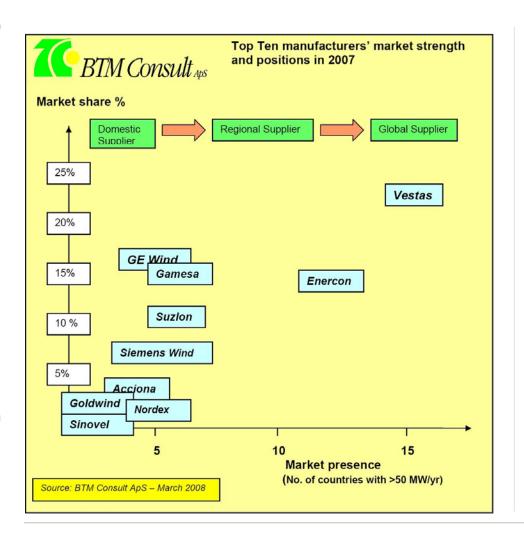
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## Global wind turbine suppliers strategic positioning



- Vestas, GE, Gamesa, Suzlon and Enercon have substantial market shares
- Top ten suppliers of wind turbines supply more than 91% of the total market
- Suzlon acquired RePower in 2007 and is becoming vertically integrated in the turbine manufacture supply chain

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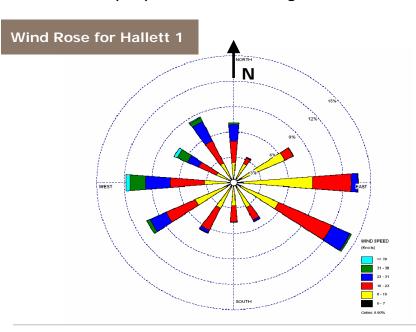


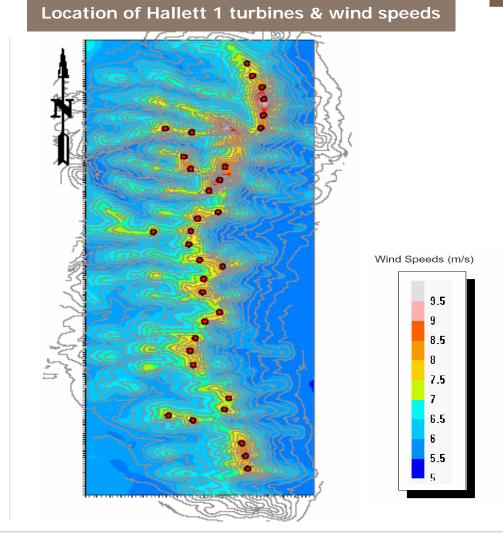
Wind speed and direction drives turbine selection and

location

Wind speed generally increases with height

- Wake effects reduce yield and drives turbine spacing
- Hallett Wind Farm stages 1 & 2 are classic wind farm sites with prevailing winds perpendicular to ridge





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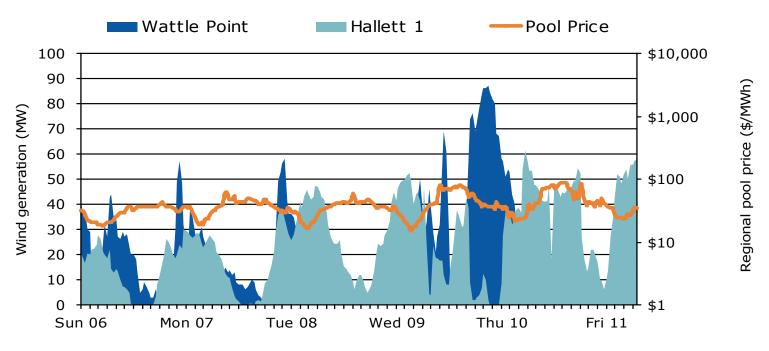
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## Wind project diversity improves reliability

Geographical diversity is important to provide a level of 'firm' generation.

Hallett 1 output 6-12 April 2008



Half hour time increments (Sun 6th to Sat 12th April 2008)

Source: AGL Internal Modelling

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## Key Strategic Priorities



## Key strategic priorities

- Secure deep pipeline of high potential wind projects across
   Australia
- > Implement scale projects in high quality wind resource areas
- Pursue strategic alliances with developers and turbine suppliers to ensure advantaged supply arrangements
- Build market leading position in renewable generation

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# AGL Energy Limited Power Development

Mike Moraza Group General Manager Gas & Power Development



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## Agenda

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- > Key Strategic Issues for Developing Power Projects
- > AGL's Response to Meeting Renewable Energy Targets
- Project Update
- > Power Development Project Pipeline



#### Key strategic issues

#### AGL's key power generation focus areas:

- > Southern NEM (Victoria & South Australia):
  - » New projects to meet renewable energy targets
- Northern NEM (New South Wales & Queensland):
  - » New gas-fired peaking and intermediate power generation projects

#### Government policy and market environment influence:

- Preferred generation mix
- Project timing
- > Location decisions



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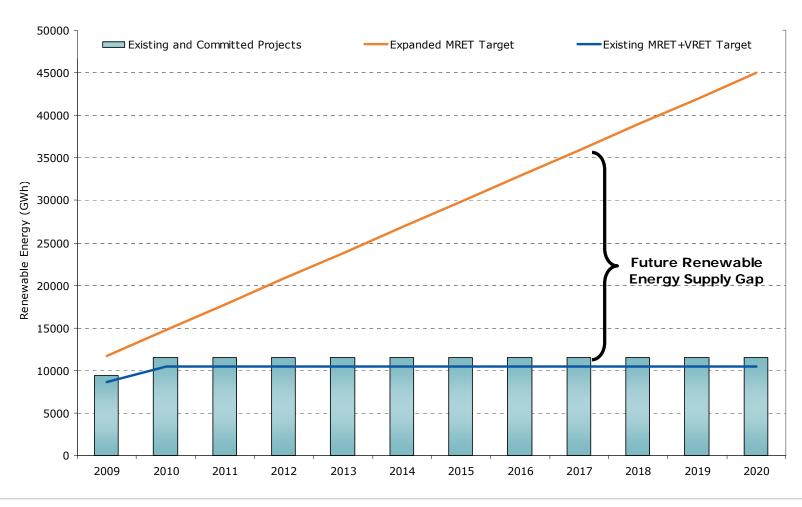
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#### New renewable energy target:

#### Where Australia is today in meeting an expanded MRET.



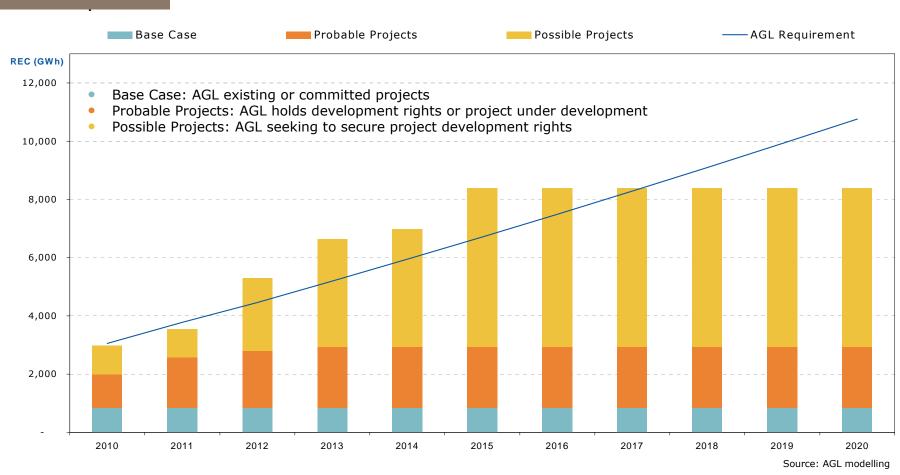
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#### AGL's renewable energy projects current and future





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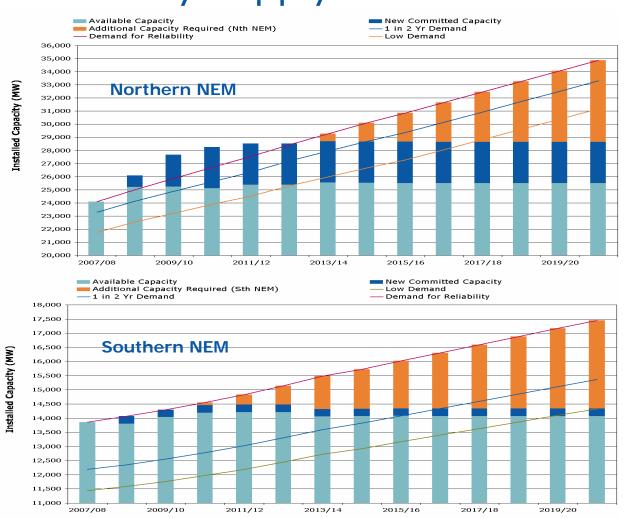
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#### AGL Project Update



#### Electricity supply & demand outlook



- Growth rates projected to be
   2-4% in the North and 1-2% in the South
- By 2020 the market will require ~5,500MW of new capacity in the North and ~3,000MW in the South

#### **Current AGL installed CAPEX estimates:**

- > \$2.5m per MW Wind
- > \$2.0m per MW Hydro
- > \$1.2m per MW CCGT
- > \$0.8m per MW OCGT

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Source: NEMMCO 2007 SOO



#### Development project pipeline - Southern NEM

Project	Location	Туре	Nominal capacity (MW)	Earliest operational date	Project Definition	Status
Bogong	Victorian Alps	Hydro	140	October 2009	Under Construction	Committed
Hallett 1 (Brown Hill)	SA – Hallett	Wind	95	May 2008	Commissioning	Committed
Hallett 2 (Hallett Hill)	SA – Hallett	Wind	71	Jan 2010	Under Construction	Committed
Hallett 3 (Mt. Bryan)	SA – Hallett	Wind	90	2010	In Development	Probable
Hallett 4 (Nth Brown Hill)	SA – Hallett	Wind	189	2011	In Development	Probable
Macarthur	Vic – West	Wind	330	2010	JV with Meridian Energy	Probable
Other	Various	Various	1440	-	Under Review	Possible

- Probable Projects: AGL holds development rights or project under development
- Possible Projects: AGL seeking to secure project development rights





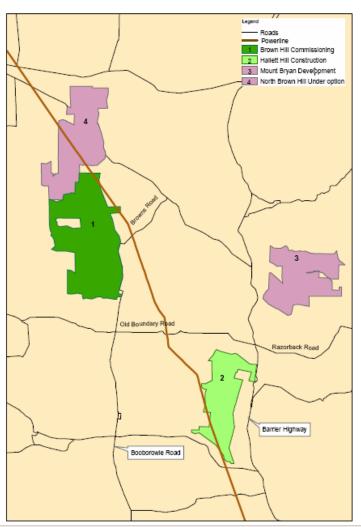
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#### Hallett wind farm complex



#### **Hallett Wind Farm Status:**

- > 1st stage being commissioned
- > 2nd stage under construction
- > Stages 3-4 in pre-feasibility

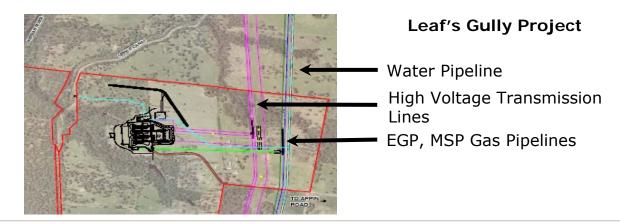
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#### Development project pipeline - Northern NEM

Project	Location	Туре	Nominal capacity (MW)	Earliest operational date	Project Definition	Status
SEQ 1	SE Qld - Ipswich	Gas Peaker	350	2011	Site secured, pre- feasibility	Probable
Leaf's Gully	NSW – Appin	Gas Peaker	350	2011	Permitting, pre-feasibility	Probable
SEQ 2	SE Qld – Kogan	Gas Peaker / CCGT	350/800	2012	Site acquired, pre- feasibility	Possible
NQ Peaker	North Qld – Townsville	Gas Peaker	350	2011	Site acquired, pre- feasibility	Possible

- Probable Projects: AGL holds development rights or project under development
- Possible Projects: AGL seeking to secure project development rights



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#### Key Strategic Priorities



#### Key strategic priorities

#### Renewable projects:

Developing deep pipeline of projects able to meet AGL needs with primary focus on wind

#### Renewable technologies:

 Review options to participate in other emerging technologies such as wave, geothermal hot dry rocks and solar

#### Gas fired generation:

Secure sites for open cycle and combined cycle gas generation at advantageous locations

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### AGL Energy Limited Gas Development

Mike Moraza Group General Manager Gas & Power Development



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#### Agenda

- Key investment themes
- > Infrastructure challenges being addressed by AGL
- > Update on current projects



## Key investment themes



#### Key investment themes

- Gas demand growth driven by power generation sector, with growth likely to be moderated by increased utilisation of renewable energy sources
- Increasing focus on growing AGL share of gas reserves from exploration and appraisal programs on existing asset base
- Infrastructure supply bottlenecks and associated market price signals creating investment opportunities for AGL
- Active watch on CSM and conventional gas sectors where AGL can gain a leveraged entry position
- Investment in equity gas reserves impacts short term earnings growth but creates long term growth platform

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#### Infrastructure challenges being addressed by AGL





Rights acquired to develop Central Queensland Gas Pipeline in JV with Arrow Energy

QSN Link deal with Epic Energy creates pipeline link between Qld, SA and NSW markets in Jan 2009

AGL's Berwyndale to
Wallumbilla pipeline will link
QGC gas supply to
Wallumbilla in Jan 2009

AGL investigating LNG peak plants and gas storage in SA, NSW and QLD

AGL facilitates infrastructure development – not long term holders

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# Update of Current Projects

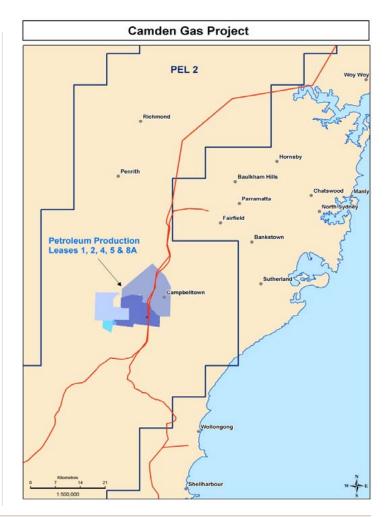


#### Sydney Basin CSM projects

#### **Camden Gas Project:**

- Currently producing about 15 TJ/d (or about 5.4 PJ pa)
- Production expected to double within 2 years following Spring Farm and Menangle Park extensions
- Well design moving to dual lateral SIS wells





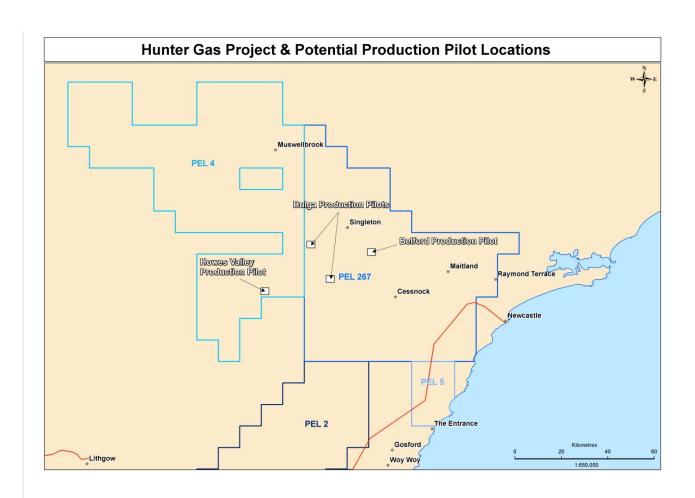
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#### Sydney Basin CSM projects cont'd

#### **Hunter Gas Project:**

- Core hole exploration drilling program underway
- Further interpretation of seismic data being carried out
- Planning and engineering underway for four production pilot locations
- Continued community consultation with Bulga Community Consultative Committee
- Accelerated certification program targeting 450 -500 PJ 2P reserves in 2009





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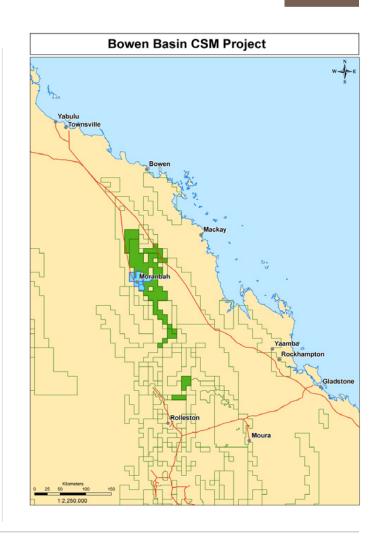
#### Bowen Basin CSM project

#### Moranbah Gas project Arrow/AGL 50/50 JV:

- Producing 46 TJ/d with the best performing well at around 2.6 TJ/d
- Heavy rainfalls recently suspended drilling and workover operations

#### North Queensland Energy project Arrow/AGL 50/50 JV:

- > Business recently acquired from Enertrade
- Achieving pre-acquisition forecasts
- Availability of the Townsville station has been in line with expectations
- Gas sales to 3rd party customers have been equal to or above expectations





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#### Key Strategic Priorities



#### Key strategic priorities

#### Focussed gas reserves growth through appraisal and exploration:

- > Hunter project area (AGL 50% interest)
- > Bowen Basin area (AGL 50% interest)

#### **Growth targets:**

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- Production and exploration assets in Eastern Australia
- Seek leveraged entry positions for AGL into CSM and conventional gas sectors through gas off-take contracts
- > Target 2,000 PJ equity gas reserves over medium term

#### Load factor (MDQ) management and infrastructure initiatives:

Sas storage, LNG storage, and gas pipelines



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# AGL Energy Limited Managing an Integrated Gas and Electricity Portfolio

Anthony Fowler General Manager, Energy Portfolio Management **MAGL** 

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#### Agenda

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- > Role of Energy Portfolio Management (EPM)
- > AGL Gas Portfolio
- Recent Electricity Price Outcomes
- > Energy Portfolio Management Value Creation



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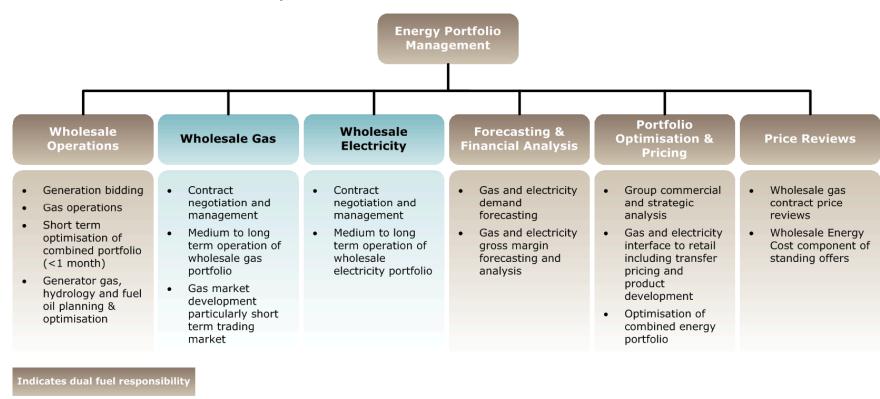
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# EPM Roles and Responsibilities



#### EPM roles & responsibilities

The Energy Portfolio Management (EPM) Group is responsible for managing the procurement and hedging of AGL's wholesale electricity and gas requirements (total annual cost of  $\sim$ \$2.6b).



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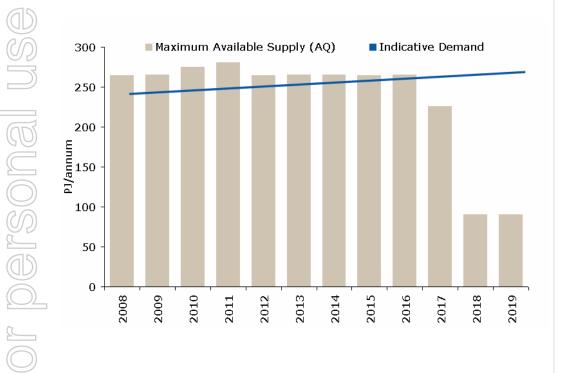


#### AGL Gas Portfolio



#### AGL wholesale gas contract portfolio

#### AGL wholesale contracted gas supply

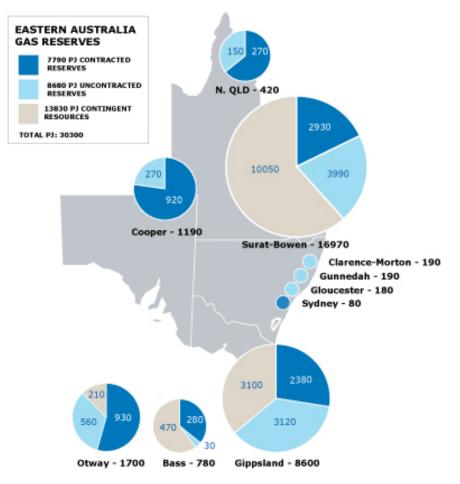


- > Rolling buy long / sell short portfolio strategy
- AGL's gas supply needs are substantially covered until 2017 through contracts and equity gas from 6 major supply basins:
  - » Considerable portfolio flexibility: ACQ 'up & down', MDQ, ToP & flexible delivery points
- In addition to gas supply AGL has access to flexible gas storage and haulage which provides optionality to deliver gas to the highest value market
- Majority of AGL's contract portfolio have price reset mechanisms which ensure ongoing competiveness of gas supply:
  - » Prices reset every 3-5 years to current wholesale price
  - » Resets ensure AGL can remain competitive in retail market irrespective of underlying gas price
  - » Some long term contracts have competitive fixed price or price cap

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#### Future opportunities to maintain supply flexibility



Source: EnergyQuest (Feb 08), AGL estimates

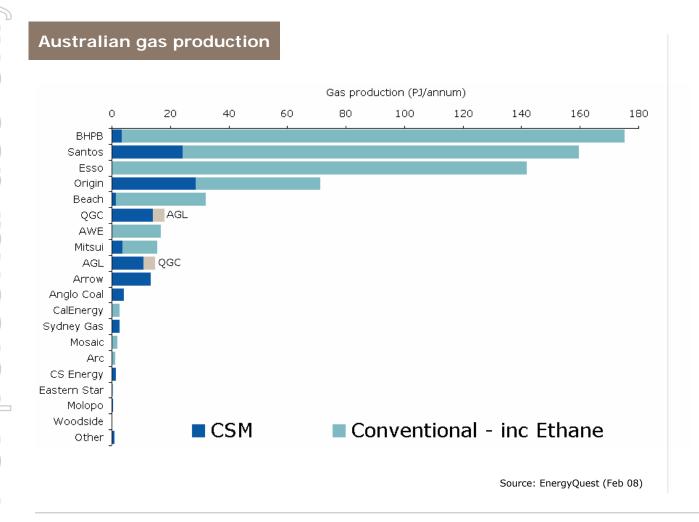
- AGL maintains flexibility to invest upstream or enter into further contracts with existing suppliers based on value
- AGL's view is that there is sufficient gas supply to meet its long terms needs but investment is required in capacity (storage and haulage)



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#### Future opportunities to maintain supply flexibility



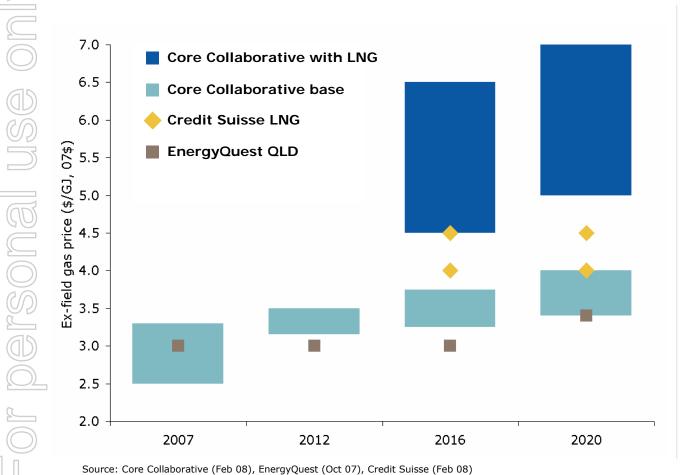
- 2P gas reserves in Australia have risen substantially in recent years
- Majority of uncontracted reserves are owned by pure upstream players who are unlikely to progress downstream and require channel to market

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#### Gas pricing observations



- Subdued gas price outlook in medium term due to supply overhang
- Emergence of LNG export projects will result in higher price expectations over time
- Some producers are warehousing gas reserves for LNG export projects

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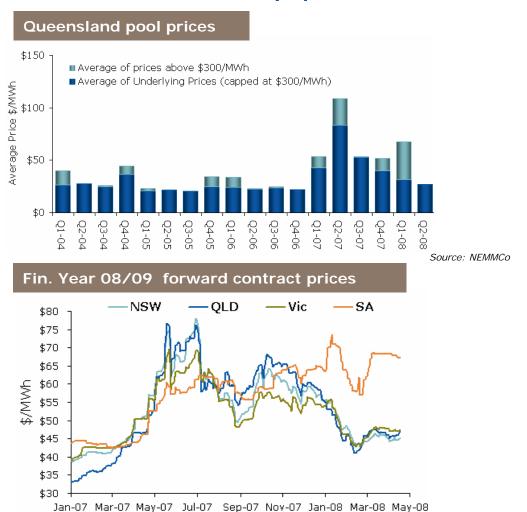


## Recent Electricity Price Outcomes



#### Recent electricity pool and contract price outcomes

Source: ICAP



- Traditionally the NEM has been a low underlying\* / high volatility spot market
- The combination of the drought and generator contract positions resulted in 2007 being a high underlying / high volatility spot market
- 2008 underlying pool prices have reverted to near "normal" levels.
   Extreme volatility has been observed in SA & QLD in Q1
- Forward contract prices have fallen over the financial year in all regions other than SA
- General upward trend in electricity prices indicates the importance of regulated mass market price increases which have been achieved in VIC and SA

<sup>\*</sup> Underlying pool prices are defined as pool prices observed during "typical" periods. For convenience these are represented by the average of pool price outcomes capped at \$300/MWh.



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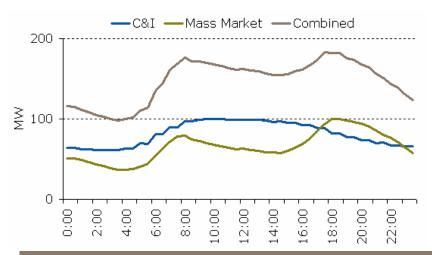
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Creating Value
Through Optimising
an Integrated
Energy Portfolio



#### Creating value through optimising intra- and interregional electricity load diversity

#### Illustration of intra-regional load diversity (winter)



#### Optimising inter-regional diversity: probability of coincident peak summer days

		Dependent City Temperature					
		37	35	33	34	36	
	endent City erature	Adelaide	Brisbane	Sydney	Canberra	Melbourne	
37	Adelaide	100%	1%	1%	23%	48%	
35	Brisbane	1%	100%	15%	7%	0%	
33	Sydney	1%	14%	100%	22%	3%	
34	Canberra	18%	4%	12%	100%	27%	
36	Melbourne	44%	0%	2%	32%	100%	

Source: Bureau of Meteorology Data 1985-2008

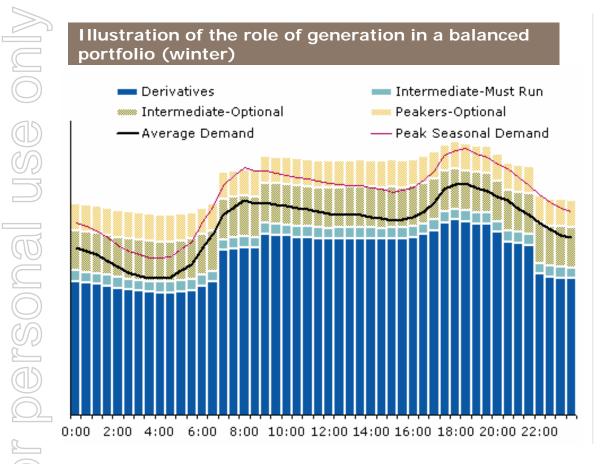
- Hedge products typically attract a premium over pool outcomes
- An intra-regional diversity benefit exists by having a large C&I and mass market portfolio which peak at different times of the day:
  - » A similar benefit occurs for gas, particularly in reducing fixed haulage costs
- An inter-regional diversity benefit arises because of the lack of correlation between extreme weather conditions across different regions
- The inter-regional diversity benefit can be realised if inter-regional price risk can be managed through market instruments and weather derivatives
- Optimising both diversity benefits requires sophisticated load forecasting based on probabilistic weather outcomes

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# Creating value through optimising optionality of the generation portfolio



- A flexible generation portfolio can provide significant portfolio optionality
- > Intermediate plant:
  - » A flexible gas portfolio allows the electricity portfolio to "ride the pool" during periods of low electricity price
  - » Moderate to high pool prices managed by increasing generation
- > Open Cycle Gas Turbines:
  - » Ramp quickly to capture price spikes
  - Can manage extended periods of moderately high pool price if required
- > Hydro and Small Diesel Units:
  - » Super fast start to capture sudden price jumps
  - » Sufficient energy to manage winter "devils horns"

AGL strategy is to capture further generation optionality through dispatch rights or ownership of 60-70% of load.

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# Creating value through active management of the hedge portfolio

- > Through active participation in the derivative, physical gas / electricity and retail markets across all states, AGL has access to a significant "information" advantage over the market
- Hedging strategy is governed by an extensive Risk Policy which allows some discretion regarding hedge timing and portfolio construction
- AGL is able to leverage its market position through accelerating/ decelerating hedging programs and managing inter-regional positions, provided risk is contained within the Profit at Risk limits

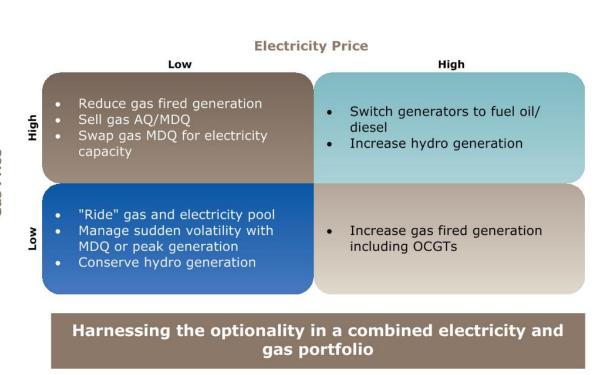
FOR ILLUSTRATION AGL VALUE MATRIX – CAL 2009 SWAPS						
		STATE 1	STATE 2	STATE 3	STATE 4	
Peak	View	Under Weight	Neutral	Neutral	Over Weight	
	Current price AGL	\$70.00	\$70.00	\$65.00	\$95.00	
	Past 5 years historical spot	\$97.40; \$43.20; \$55.02; \$66.31; \$35.97;	\$90.51; \$47.28; \$34.26; \$39.29; \$31.11;	\$97.35; \$36.20; \$34.77; \$47.28; \$29.78;	\$78.04; \$50.29; \$44.81; \$53.11; \$34.81;	
	5 Trade days ago price	\$68.60	\$69.80	\$66.82	\$102.19	
	20 Trade days ago price	\$72.95	\$73.11	\$70.95	\$102.93	
	Daily standard deviation	\$0.70	\$0.64	\$0.52	\$0.17	
	20 Days Volatility	14.85%	10.96%	12.03%	2.16%	
	Liquidity	Medium	High	High	Medium	
	Comments		•	to potential for	Q108 demands provide bullish sentiment for Q109	

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# Creating value through managing an integrated gas and electricity portfolio



- Managing the "spark spread" provides AGL optionality to:
  - » Swap electricity / gas capacity
  - » Benefit from low spot prices but minimise risk of extreme spikes
- Generation at TIPS and Oakey can be switched to fuel oil/distillate which creates a fuel arbitrage
- Hydro constraints can be partially managed by increased running of gas plant
- Other benefits of an integrated portfolio include:
  - » Managing gas take-or-pay
  - » Utilising 'stranded' gas haulage in non-winter periods

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# Key Strategic Priorities



# Key strategic priorities

- Combined optimisation of the integrated gas and electricity portfolio to manage load shape and capture diversity benefits
- Continue to proactively work with state regulators to manage regulated price outcomes
- Maintain AGL's competitive long term wholesale gas position through further contracting or upstream investment
- Capture the optionality and leverage of physical generation through ongoing investment and development
- Develop strategies to optimise the "spark spread" in AGL's flexible integrated physical gas and electricity portfolios



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# AGL Energy Limited Merchant Energy Risk Management

Gary Gavin Head of Wholesale Energy Risk Management

Equity Investor Day Sydney, May 2008



# Agenda

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- Risk Policy
- > Governance Structures
- > Risk Management Principles and Processes
- > Review Practices



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# Wholesale energy Risk Management Policy

### Current Risk Policy approved by the Board in May 2007:

- > Update to 2005 Risk Policy
- Reviewed by Ernst & Young
- Aligns with best practice promulgated by Committee of Chief Risk Officers (CCRO)

### Main features include:

- > Governance structure
- > Delegations of authority
- Principles for management of market, credit, operational, regulatory, contract and legal risk
- > Risk measurement methodologies
- Market and credit risk limits



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## Wholesale energy Risk Management Policy

The Risk policy is comprehensive, well disseminated and provides a coherent framework for risk management.

### **Organisational:**

- · Organisational purpose
- Establishment of RMC
- · Delegations from Board
- Segregation of duties
- Roles and relationships

Conceptual Methodologies

**Risk Measurement** 

CULTURE

**Risk Limits** 

Compliance Reporting

### 5 Risk Types:

- Market (price & volume)
- Credit
- Operational
- Regulatory
- Contract and legal

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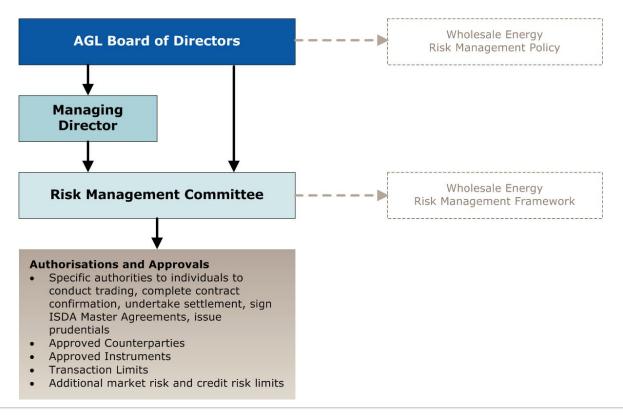
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# Governance Structures



# Authority delegations

- > Clear lines of authority delegations from the Board
- Rigorous processes for approvals
- > Well defined policy responsibilities and documentation



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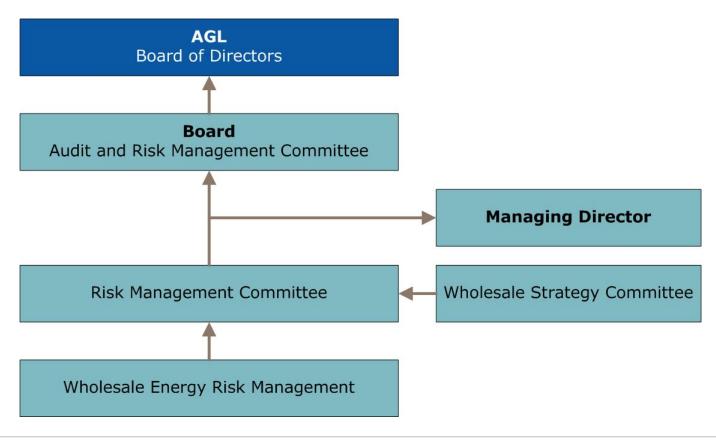
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# Organisational structure for reporting

- > Continual monitoring and reporting
- > Explicit mechanisms for reporting of breaches to Board





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## Risk Management Committee

# Risk Management Committee has a high level of seniority and detailed processes of operation.

### Group of senior executives including:

- > Chief Financial Officer
- > Company Secretary
- Group GM Merchant Energy
- > Group GM Gas and Power Development

### Meets monthly to:

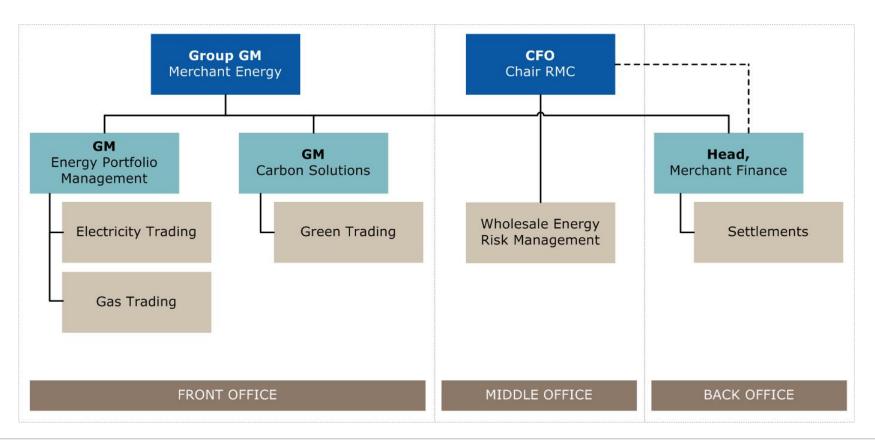
- Review detailed risk report from Wholesale Energy Risk Management detailing positions, risk measures, and legal and operational risk issues
- > Approve new individual authorities
- > Approve new counterparties
- > Approve transactions requiring its delegation
- > Approve updates to the Wholesale Energy Risk Management Framework
- Review papers of the Wholesale Strategy Committee

Receives a weekly risk report from Wholesale Energy Risk Management.

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Business units structured to achieve best practice in segregation of duties.



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# Risk Management Principles and Processes



# Credit risk management principles

- Wholesale Energy Risk Management group has counterparty credit risk management function
- Credit limits (value and maturity) assigned to counterparties according to their credit strength and Board defined credit tiers
- Contracting with a counterparty will cease if their credit exposure exceeds their allocated credit limit
- > ISDA Master Agreements have "materially weaker" clauses which requires counterparty to post credit support if there are material changes in their financial position



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# Market risk management principles

### Managing gas market risk:

- > Gas markets primarily physical with substantially lower volatility compared to electricity
- Managed within gas supply agreements:
  - » Volumetric flexibility
  - » Price resets
- > Risk also managed by underground storage, LNG, linepack

### Managing electricity market risk:

- Retail loads and settlement (spot) prices on the NEM are at the half-hour and represent a high level of complexity compared to other commodity markets
- Use a combination of own-generation, power purchase agreements and financial derivative hedges (swaps, caps) to minimise wholesale cost variability
- > Stress test the portfolio to identify areas of risk
- > Set risk limits for hedging requirements



Limits are set to define the level of required hedging, or conversely the level of allowed exposure:

- > Volumetric risk limits:
  - » Minimum percentage of forecast sales to be hedged
- Economic risk limits:
  - » The Earnings at Risk associated with the portfolio is such that there is a high degree of confidence that dividend forecast will be achieved

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### Economic risk limit and measure

- > The economic risk limit is set by the AGL Board
- > The economic risk measure is *Earnings at Risk*
- Earnings at Risk is modelled a number of ways to analyse the distribution of possible earnings outcomes:
  - » Scenario modelling: Scenarios of pool price and load
  - » Historical simulation: Historical pool prices and load variability
  - » Model simulation: Models of forward curves of pool price and load
- > Exposures (ie unhedged positions) must be limited to ensure that the Earnings at Risk measure stays below the risk limit
- Additionally regular stress testing of the portfolio to identify potential losses under extreme circumstances

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## **Review Practices**



# Review practices

- > Wholesale Energy Risk Management operational practice:
  - » Audited annually as part of external audit
  - » Subject to review by internal audit
- Hedge book of derivatives is subject to external audit as part of requirements under accounting standard AASB139

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# Key Strategic Priorities



- Continue to support a strong governance structure
- > Work to maintain best practice in risk management policy and process
- Continually review and enhance methodologies and systems for monitoring risk
- Maintain and refresh, across all wholesale energy business units, a strong risk management culture

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# AGL Energy Limited Phoenix Change Program

Owen Coppage CIO and Phoenix Program Director **MAGL** 

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### **Project Phoenix:**

- > What is it and what changed
- > Progress against schedule

### **Retail Solution:**

> What is being implemented

### **Outcomes:**

> Efficiency



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## Project Phoenix

A complex program of work impacting people, processes, and systems

Two releases and migrated approx 1.6million customer accounts on time and to budget



### **Organisation**

From: 8 fragmented and geographically dispersed retail businesses.

**To:** A nationally integrated retail business operating from Adelaide and Melbourne.

### **Process**

**From:** Disparate and inefficient processes built for specific jurisdictions and fuels.

**To:** Single way of doing work across all jurisdictions and fuels.

### **System**

**From:** 5 mass-market retail billing systems with no CRM capability.

**To:** A single massmarket retail billing system – SAP.

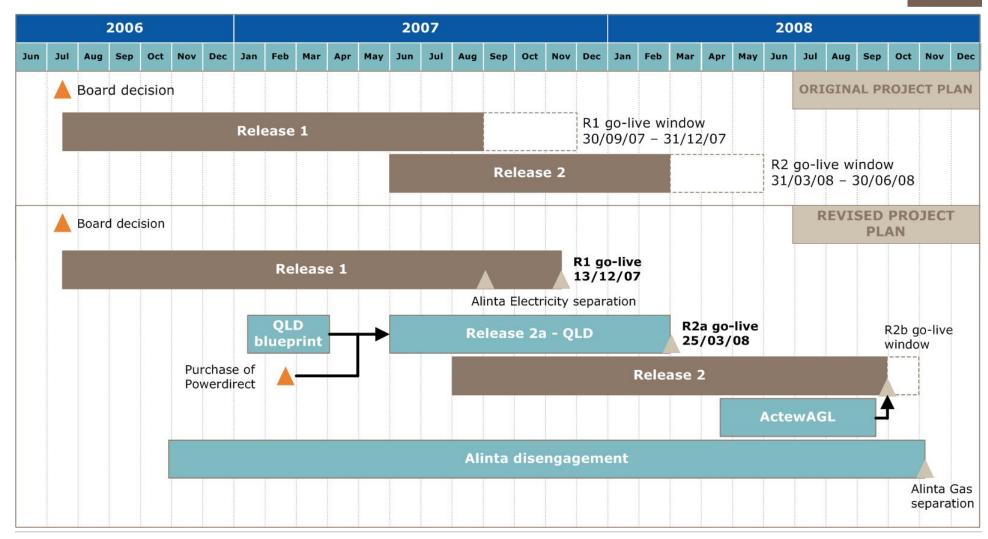
### **Outcomes**

- Reduce OPEX per account
- Scale benefits
- Drive out operating costs
- Reduce IT complexity and cost
- Create the basis for differentiation
- World-class levels of operational performance

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### Phoenix Schedule

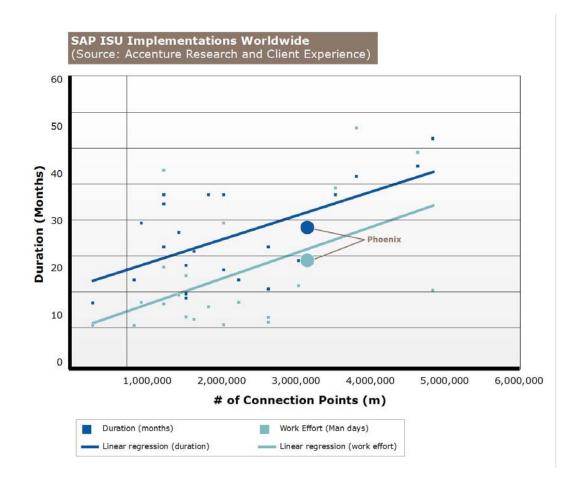


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# World Class Implementation



The Phoenix solution is one of the most complex SAP solution implemented worldwide:

- > 4 jurisdictions and 2 fuels
- > Basic and interval meters
- All SAP modules for Utility Industry
- Challenging schedule and dependency program

It is also one of the most successful so far:

- > 2 releases delivered successfully within 21 months
- Minimal business disruptions with grade of service restored within 3 months of the first release

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# Phoenix key success factors

### **Business-led program:**

- > Focus on the delivery of business and customer outcomes
- > Strong business buy-in and engagement from the beginning
- > Operational planning for rapid post go-live business recovery

### Right delivery model:

- Engagement of strong delivery partners with proven capabilities and track record – implementation, production support, and technical back-up
- Experienced people an Accenture team that has done this before

### **Scope Control:**

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Clear accountability for outcomes



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## **Retail Solution**

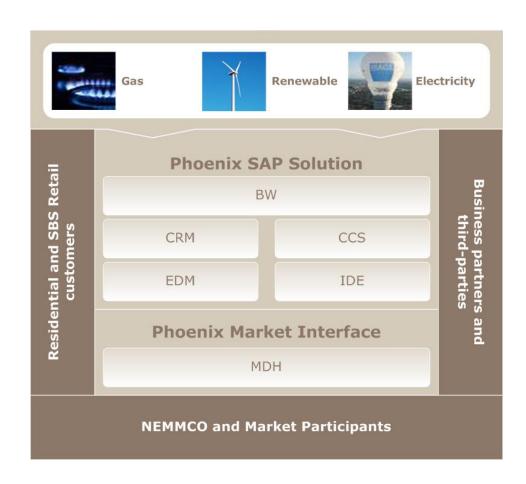
Fully integrated with minimal customisation by using standard SAP functionality



### The Phoenix solution

The Phoenix solution is a fully integrated and complete mass-market retail solution:

- Manage customer and prospect data, sales campaigns and all front-office activities: CRM
- Manage customer consumption, billing and payment history and all back-office activities: CCS
- Providing a single repository for all load information for all type of meters and customers: EDM
- Providing the business intelligence capability: **BW**
- Manage all market and business to business interactions: IDE and MDH

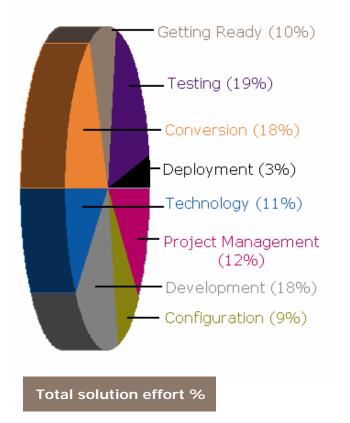


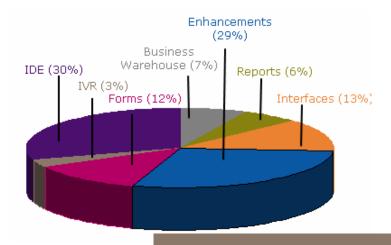


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Type as a % of total development effort

Туре	Development Description
Reports	SAP provides a standard set of reports for the utilities industry, with some reports adapted or built to satisfy AGL's specific requirements
Interfaces	Developments required to connect SAP to internal AGL systems (e.g. merchant energy) or external parties (e.g. banks & gov't agencies)
Enhancements	Developments required to enhance SAP where AGL specific requirements are not supported as standard (e.g. VIC regulatory requirement specifying when disconnection notices can be sent)
Forms	Developments required to build the various customer correspondence messages (e.g. invoices, disconnection notices, customer letters)
IVR	Developments required to integrate SAP with the CTI/IVR solution
IDE	The SAP IDE (Intercompany Data Exchange) module enables SAP to interact in a deregulated market. Developments are required to 'build in' the Australian specific regulatory electricity / gas transfers & B2B rules
Business Warehouse	Developments required to deploy SAP Business Warehouse, a 'data warehouse' module for ad-hoc & management reporting (e.g. customer segmentation & campaign planning/analysis)

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## The dependencies

Product Rationalisation

Rationalise and reduce AGL rates from over 4,000 rate definitions in legacy systems to under 200 in SAP.

**Printing Services** 

Consolidate print vendors from 4 to 1 and recreate all letters, forms, marketing collateral and a single invoice format.

**Data Cleansing** 

Cleanse customer and meter data in legacy systems to support accurate conversion into SAP.

**Data Retention** 

12 months of data will be migrated into SAP. In addition, 2 or more years of historical data loaded into a warehouse to support enquiry management post go live.

Dependent Applications

Ensure SAP interfaces are in place with applications used in Merchant Energy (Settlement and Forecasting).

NSW B2B / Alinta Make Whole System and business process changes are required to support market and business transactions with ALINTA post go-live.

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### **Outcomes**

Although there is still more work to do there are tangible benefits being delivered now

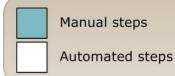


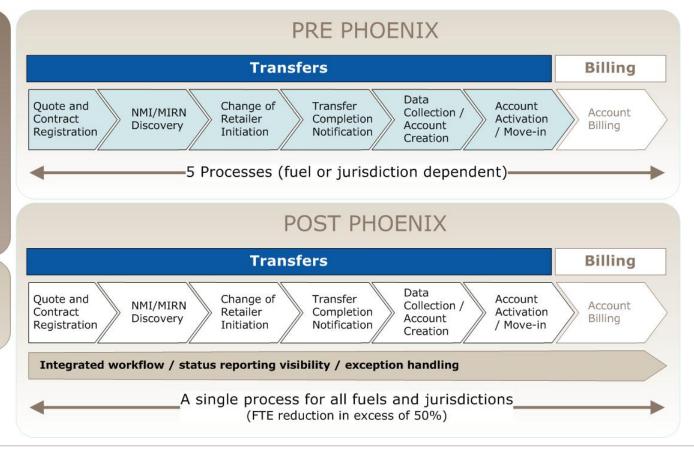
# Phoenix outcomes – efficiency

Process example: customer transfer.

## Key Move In Process Issues:

- 5 separate teams / roles involved in endto-end process
- > 10 systems accessed to support process
- 28-56 minutes required to perform end-to-end process
- 8 premise address data re-entry points
- 4 customer name data re-entry points





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## Phoenix outcomes - customers

### Improved sales and marketing capabilities:

- Single Customer View customer attributes in CRM combined with consumption, billing and payment history in CCS
- > Automation of sales campaign creation, execution and reporting

### **Enhanced customer experience:**

- Consolidation of the management of all transactions and customer data onto a single system
- Improved workforce scheduling and call overflow between AGL Contact Centres



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# Phoenix outcomes - integration

# A single, nationally-integrated Retail business by the end of 2008:

Single way of doing business across all jurisdictions and fuels

# Proven capability to integrate new or acquired business operations:

- > 13 months to integrate the Queensland retail business and migrate 390,000 customers off the legacy ENERGEX platform
- > Queensland release delivered 3 months after the first release of the SAP solution
- Successful delivery with no negative impact on operational performance post go-live



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There is still more work to do



# Key strategic priorities

### **Complete Phoenix change program:**

- > Release 2b scheduled for second quarter FY09
- Extract the benefits for FY10

### Long term solution for C&I customers:

> Define requirements for managing C&I and Major Customers

### Complete transition to IT outsource services:

> Governance, processes, and performance

### **Exit Alinta AGL bureau:**

> Decommission applications and infrastructure



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# AGL Energy Limited Life after Phoenix

Phil James Group General Manager Retail

Equity Investor Day Sydney, May 2008



# Agenda

### **Project Phoenix:**

- > Project schedule and progress
- > Deliverables for Retail Energy

### **Benefits realisation:**

- Operational and marketing benefits
- > Platform scalability and future growth
- Execution timeline

### Market effectiveness:

- Creating the basis for differentiation
- > Leveraging Phoenix capability



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# Project Phoenix

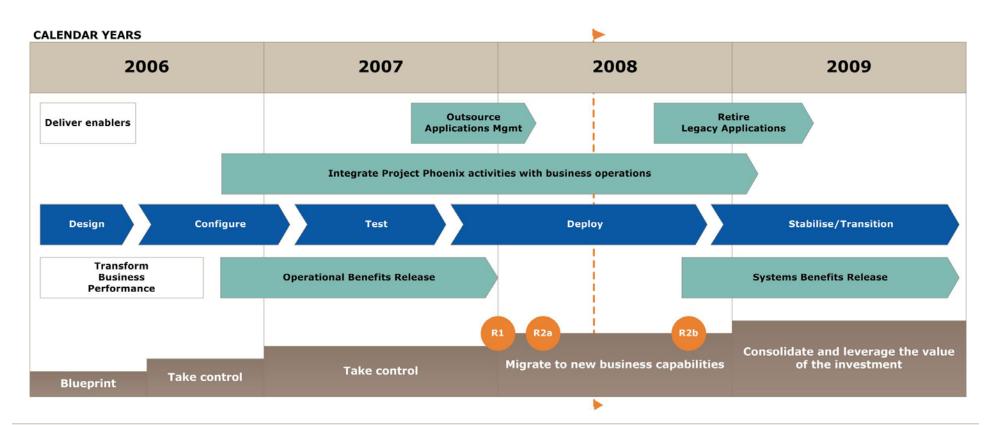
A four-year program to deliver world-class service and marketing capability at industry-leading cost to serve

This presentation focuses on the operational and marketing benefits of the program



# Planning Phoenix

Project Phoenix parallels the implementation of enhanced systems with actions to lift operating performance



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# Delivering the program



World class competitive capability at industry-leading cost to serve.

### 1. Capture full synergy benefits

Secure the economies of AGL's scale by moving to a single customer service and marketing platform. Create single retail business model across jurisdictions.

Two (of three) migrations now completed successfully and program on track. Retail business consolidated into Melbourne.

### 2. Reduce IT complexity and cost

Retire multiple legacy applications. Shift to strategic sourcing of IT infrastructure and applications management.

Outsourcing program in place. TCS and IBM agreements in place. IT complexity will reduce as legacy systems are retired.

### 3. Drive out operating costs

Capture operational and system-driven efficiencies. Increase the level of automated service delivery. Co-locate retail people and reduce staffing requirement.

\$22+ million operating cost savings target achieved to date. Further \$35 million to be released in FY10.

### 4. Create the basis for differentiation

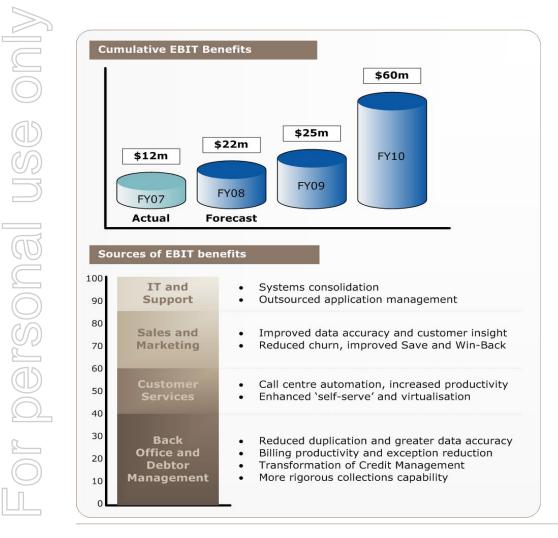
Build 'single view of customer' capability. Operationalise customer value segmentation. Differentiate AGL's service and product offerings based on customer value and market profitability.

SAP CRM demonstrating the capability to differentiate. Full effort to be applied as migrations are completed.

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# Capturing the benefits



- AGL is already deriving substantial operating benefits from the Phoenix program
- Operational improvements and site consolidation will achieve more than \$22m of cumulative, net cost benefit by end FY08
- With more than half of AGL's customers now in the SAP environment, increasing effort is going to longer-term, sustainable gains through automation, improved data accuracy and high-value customer targeting
- Headcount and cost/margin benefits release is on track with a further \$35m of annualised benefits to be released in FY10
- AGL is pursuing the two value streams of Operating Efficiency and Marketing Effectiveness with equal vigour

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# Australia's Preferred Energy Retailer

AGL leverages its investment in Phoenix capability to effectively meet the needs of shareholders, customers, employees, and the communities it serves



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# Customer value segmentation

Creating a value-driven customer fact base.



Source: KPMG 2007

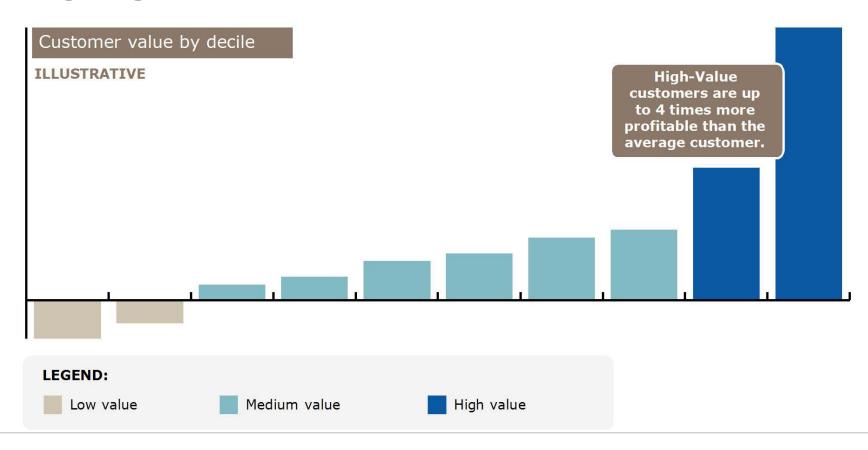


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# Leveraging customer insights

Cost-allocated customer segmentation demonstrates the value of targeting.



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# Leveraging customer insights

Using data to create customer insight... and Phoenix to leverage it.

### Focus on cross-sell

- Extend dual-fuel products
- Develop home services

### **Active retention strategy**

• Leverage the relationship

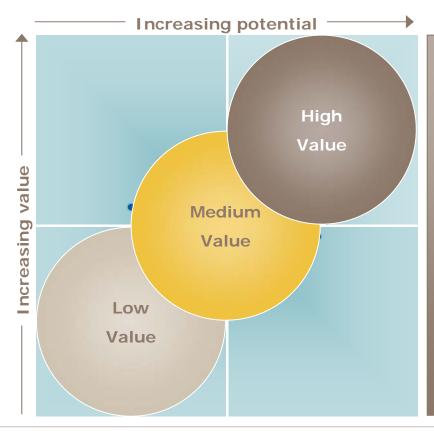
**Active cost to serve strategy** 

### Focus on lower cost to serve

- Address debt/metering
- Use IVR and automation
- Influence payment channel

No active retention strategy

No active cross-sell strategy



### Focus on retention

- Pro-active contact
- Dedicated service agents
- Priority service (queue jump)

### **Active cross-sell strategy**

- Tailored propositions
- Service-based approach

Encourage 'Opt-In'

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# Increasing market effectiveness

### Delivering differentiated end-to-end customer experiences.

### AGL is driving to become more customer centric so that it can:

- Understand the profitability of customer segments and define clear ownership of results, enabling investments to be aligned to the most valuable segments
- Combine segmentation with customer value so that sales and marketing activities can be more finely tuned to retain, and selectively, acquire high-value customers
- > Implement segment specific retention activities

### AGL has selected SAP because of its ability to 'operationalise' strategy:

- Produce accurate and timely prospect lists for sales campaigns
- > Convey information to AGL's channels that supports real-time sales decisions
- > Drive differentiated service delivery through both automation and differentiated service
- > In 2006, 25 of the world's top 30 (9 of the top 10) utilities ran SAP

# Phoenix will support all of the things AGL needs to do to become customer centric...and some of that differentiation has already begun:

- > Win-back campaign data feed now live from SAP and improving capability
- Segmentation initiative underway and due for completion Jun 08
- > Underpins future acquisitions by simplifying customer migration
- > 2½ years in, to date no competitor has followed
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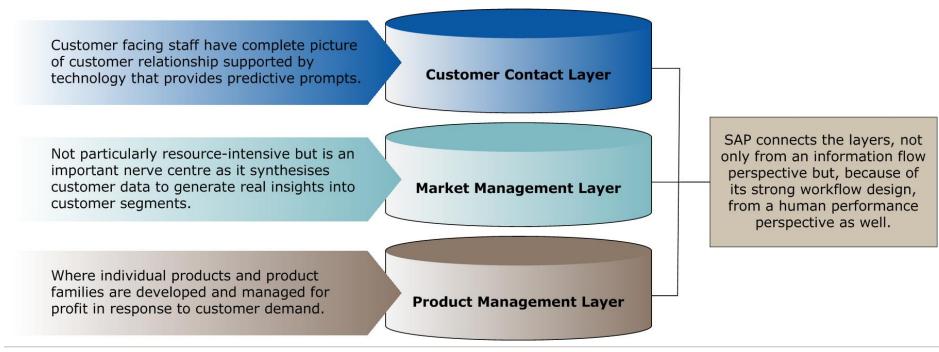


# Phoenix supports customer centricity

### SAP integrates the layers that drive customer value.

SAP enhances AGL's marketing capability in two discrete ways:

- It brings all customer information into a single source that is able to be easily analysed and readily compared with market information.
- 2. It facilitates differentiation in service and sales activity by giving an end-to-end view of customer information

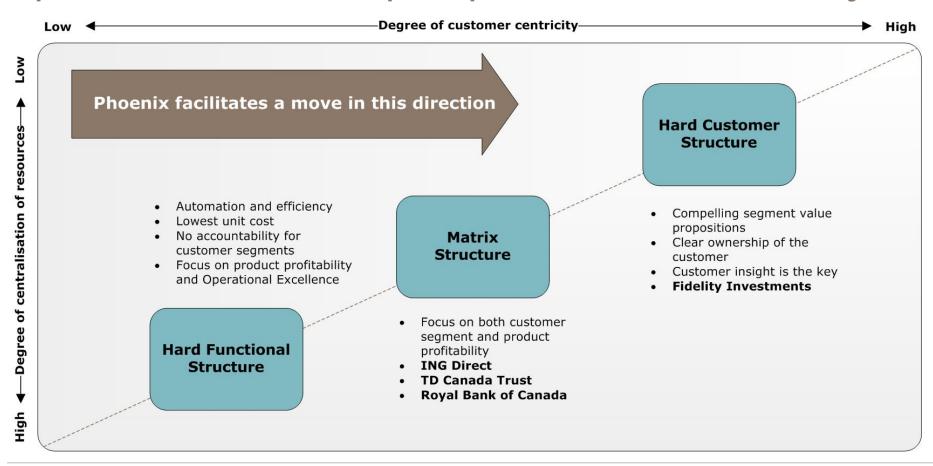


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# Organising around customer value

### Operational Excellence is a prerequisite to Customer Centricity.



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# Key Strategic Priorities

There is still substantial work required to capture the full benefit of the investment AGL has made in Phoenix

In the next period, AGL will complete the project phase as it begins the effort to differentiate



# Key strategic priorities

### **Complete the Phoenix program:**

- Execute to the project schedule
- Deliver the target benefits
- > Prepare for growth

### Begin the differentiation effort:

- Complete value segmentation
- > Target high-value customers
- Demonstrate the capability

### Perform in the market:

- Maintain/grow market share
- > Grow margins through differentiation



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# AGL Energy Limited Financial Management

Stephen Mikkelsen Chief Financial Officer

Equity Investor Day Sydney, May 2008



# Agenda

### **Accounting:**

- > Development fees
- > Derivatives

### Debt capacity for growth investments:

- > Balance sheet clean up
- > Preparing the balance sheet for growth

### Improvements to year end disclosures:

- Cost to serve
- > Further merchant analysis



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# Accounting



# Development fees

Development fee contributions are aligned to the fundamental drivers of value:

- > AGL identifies, plans and permits wind site and negotiates EPC
- AGL provides full off-take for RECS and Energy, and operates the wind farm, typically for 25 years
- This structure is sold to an investor for an upfront fee and this is classified as a development fee
- It is an operating lease for accounting purposes
- > The drivers of value in the development fee are:
  - » Investors cost of capital
  - » Gearing and debt cost
  - » Off take pricing
- "Live" example follows

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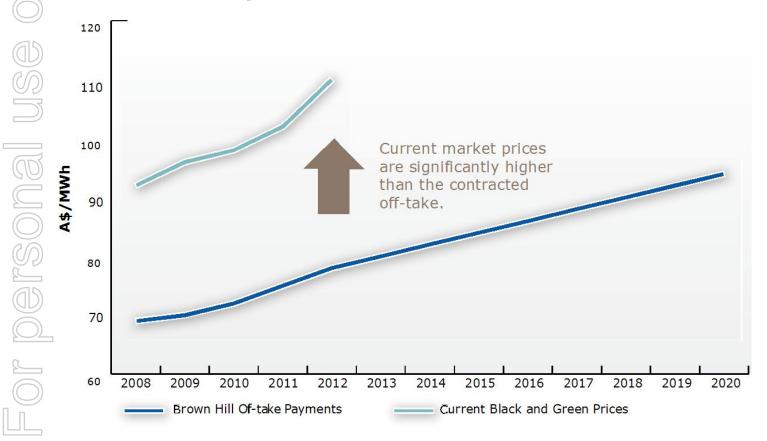


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# "Live" example of development fees

Given AGL's pipeline of opportunities, development fees are a sustainable part of the business for the foreseeable future.



NPV of off-take \$257m
Development cost \$198m **Development profit** \$59m

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## **Derivatives**

- AASB139 is highly prescriptive as to what financial instruments qualify as effective hedging
- It is deficient in fully recognising the physical side of a hedging transaction
- Consequently a large number of structured transactions are classified as trading, even though they are clearly economic hedges
- > A greatly simplified example follows

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# AGL sells a Cap against Somerton

### Assume:

- > 100MW
- > 3 Years
- > @ \$12.50/MW/h

Revenue \$33 million or \$11 million per annum

### Rationale for the transaction:

- Reduce volatility of revenue streams
- > Enable higher revenue streams than otherwise predicted
- > Capitalise on high availability

Economic hedge

Accounting will not treat this as a hedge because sold options are specifically excluded

### Further assume:

- > Market Cap price at the end of year 1 = \$8.50/MW/h
- > Market Cap price at the end of year 2 = \$15.00/MW/h
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# The accounting outcome

Earnings from fair value movements do not impact underlying cashflow, and therefore value.

	End of Year 1	End of Year 2	End of Year 3	Total
Revenue	\$11 million	\$11 million	\$11 million	\$33 million
Liability at transaction rate	\$22 million	\$11 million	\$0 million	N/A
Liability at market rate	\$15 million	\$13 million	\$0 million	N/A
Balance sheet	\$7 million	(\$2 million)	\$0 million	N/A
Fair value movements to the P&L	\$7 million	(\$9 million)	\$2 million	\$0 million



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# Debt Capacity for New Investments



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- > S&P currently requires 5 X FFO interest coverage<sup>1</sup>
- > Acti
- > Actions undertaken to date to restore the stable outlook:
  - Fully underwritten March DRP
     Sale of Gas Valpo
    - Commenced sale of pipeline assets purchased from Enertrade
    - . . .

AGL is committed to restoring its BBB stable rating

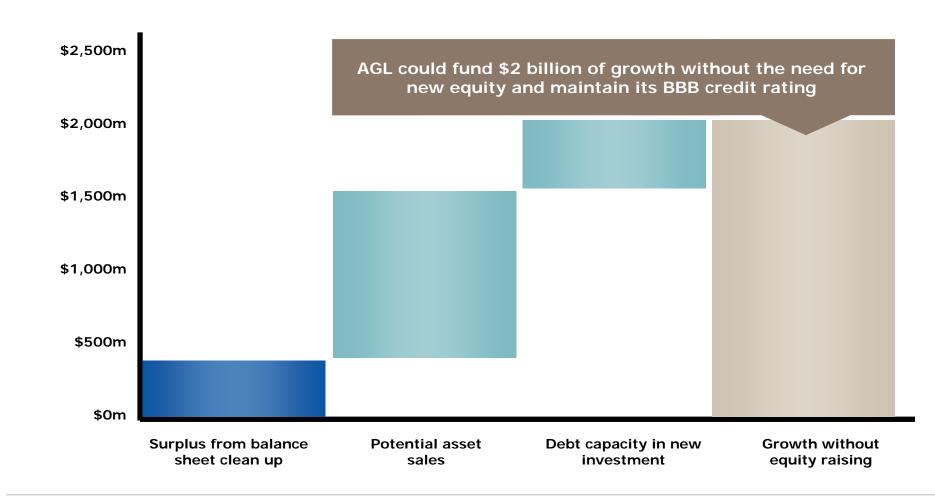
4. Commenced PNG sale process

These actions will deliver at least \$300 million more than is required (\$600m-\$700m) to return credit rating to stable.

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# Options for funding future growth



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# Year End Disclosures



# Evolving financial disclosure

### Delivering greater clarity around our retail cost to serve.

12 months to	June 07	June 06	Change %
Total operating costs (\$m)	236.3	230.6	2.5%
Total other margin (costs recovered) (\$m)	(39.9)	(34.6)	(15.4%)
Net operating expenditure (\$m)	196.4	196.0	0.2%
Net operating cost per mass market account (\$)	72.6	70.2	(3.4%)
Notional corporate overhead allocation (\$m)	32.3	42.9	(24.7%)
Net operating cost per mass market account (\$)(with corporate recharge allocation included)	84.5	85.6	1.3%

For the year ended June 2007, the cost per customer was presented on a marginal basis and with a notional corporate allocation.



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# Evolving financial disclosure

### Delivering greater clarity around our retail cost to serve.

6 months to	Dec 2007	Pro forma Dec 2006	Change %
Net Operating Expenditure (Excl. QLD Customer Amortisation) \$m	106.1	96.6	
Net Operating Costs per Mass Market Account (average across 6 months)	\$33.37	\$35.30	Down 5.5%

For the year ended June 2008, retail IT costs and retail rental will be moved from the corporate costs to retail in order to more clearly articulate the cost to serve.

It is estimated that on this basis, cost to serve per customer will be \$70 to \$75, the lowest in the market.

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<sup>»</sup> Equity Investor Day

<sup>»</sup> Sydney, May 2008

# Evolving financial disclosure

### Delivering greater clarity around our merchant operations.

Merchant – EBIT Analysis (from 1H08 result presentation)					
6 months to \$m	Dec 2007	Pro forma Dec 2006	Change %		
Revenue from Retail Business					
Electricity	953.4	547.5	74.1		
Gas	222.0	194.4	14.2		
External Revenue					
Generation revenue	126.8	25.0	407.2		
Oil liftings revenue	98.0	17.58	(20.8)		
ActewAGL <sup>1</sup>	116.0	80.0	15.0		
Hallett development fee	31.3	20.5	52.7		
External (3 <sup>rd</sup> Party) revenue <sup>2</sup>	122.0	102.6	15.9		
PNG oil infrastructure tariffs	3.8	2.4	58.3		
Equity profits (LYA & QGC)	19.5	15.3	27.5		
Total Merchant revenue	1,692.8	1,111.5	52.3		
Costs of Goods Sold					
Electricity COGS	(1,234.1)	(448.3)	(175.3)		
Electricity CFDs	284.3	(46.6)	n/a		
Gas COGS	(358.0)	(299.1)	(19.7)		
Gross margin	385.0	317.5	21.3		
Operating costs	(71.2)	(54.0)	(31.9)		
EBITDA	313.8	263.5	19.1		
D & A	(74.9)	(65.9)	(13.7)		
EBIT	238.9	197.6	20.9		

- Further clarity will be provided around the transfer pricing of gas between the wholesale book and generation
- This will enable better analysis of year on year trends



<sup>1.</sup> ActewAGL Dec 2007: Electricity sales 78%, Gas sales 22%; Dec 06: Electricity sales 70%, Gas sales 30%

<sup>2.</sup> External Revenue Dec 2007: Gas sales 54%, Other sales 46%; Dec 06: Gas sales 52%, Other sales 48%

<sup>»</sup> Equity Investor Day

<sup>»</sup> Sydney, May 2008

# Key Strategic Priorities



# Key strategic priorities

- Restore AGL's balance sheet to BBB stable
- Continue to review capital management options in order to fund growth priorities that better fit AGL's integrated strategy
- Continuously improve the quality of disclosure in order to highlight both the robustness of AGL's business model and the execution of our strategy



<sup>»</sup> Equity Investor Day

<sup>»</sup> Sydney, May 2008

# AGL Energy Limited Concluding comments

Michael Fraser Managing Director & CEO

Equity Investor Day Sydney, May 2008



- > Our integrated asset base is pivotal in the Australian energy sector
- > Our success with Phoenix provides world class capability
- > We are at least two years ahead of our competitors
- We have the leading and fastest growing privately owned renewables portfolio in Australia
- We have a competitive and geographically diverse generation portfolio

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<sup>»</sup> Equity Investor Day

<sup>»</sup> Sydney, May 2008

# Concluding comments

- Our gas portfolio is structured to remain competitive under all price scenarios, enabling us to sustain retail margins
- Actions underway to restore balance sheet strength and flexibility
- > Disciplined approach to acquisitions and development projects
- Our leading position in our chosen markets provides a strong platform and a strategic advantage as we pursue new opportunities
- Sustainable earnings and dividend growth are achievable objectives given the strength and value of our strategic asset base





# Further Information & contacts

A range of information on AGL Energy Limited including ASX & Media Releases, Presentations, Financial Results as well as historical 'The Australian Gas Light Company' Scheme Booklets, Annual Reports, Sustainability Reports, Presentations and Financial Results are all available from our website: www.agl.com.au or www.aglinvestor.com

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