Gas' Role in Australia's Energy Future

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Overview

- **Gas has frequently been portrayed as the "transition fuel" to a lower carbon future:**
  - Gas displaces coal for generation
  - Gas demand and supply increase over the next 10-20 years before falling
- **I shall address the key factors that will determine whether this scenario plays out.**

Key Factors

- Demand
- Reserves
- Price
- Reliability & deliverability
- How do they interact?

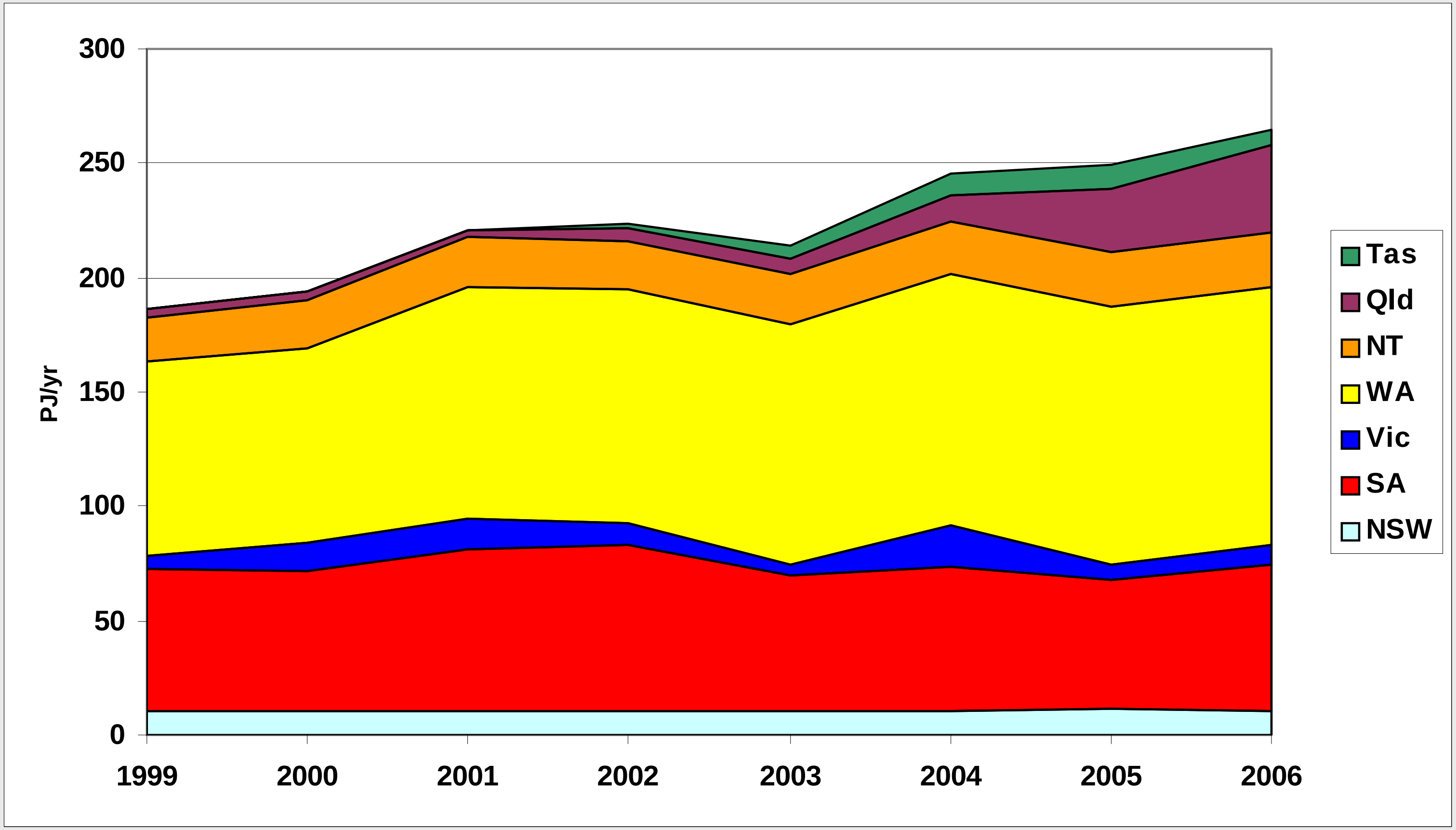
Gas Demand

- We hear its growing but is it?
- Which sectors have potential?
- What policies have worked?

Is demand growing?

- Yes and no
- Yes – Generation, Qld & WA
- Otherwise – not like we thought it would

Generation gas demand (NEM & ABARE)



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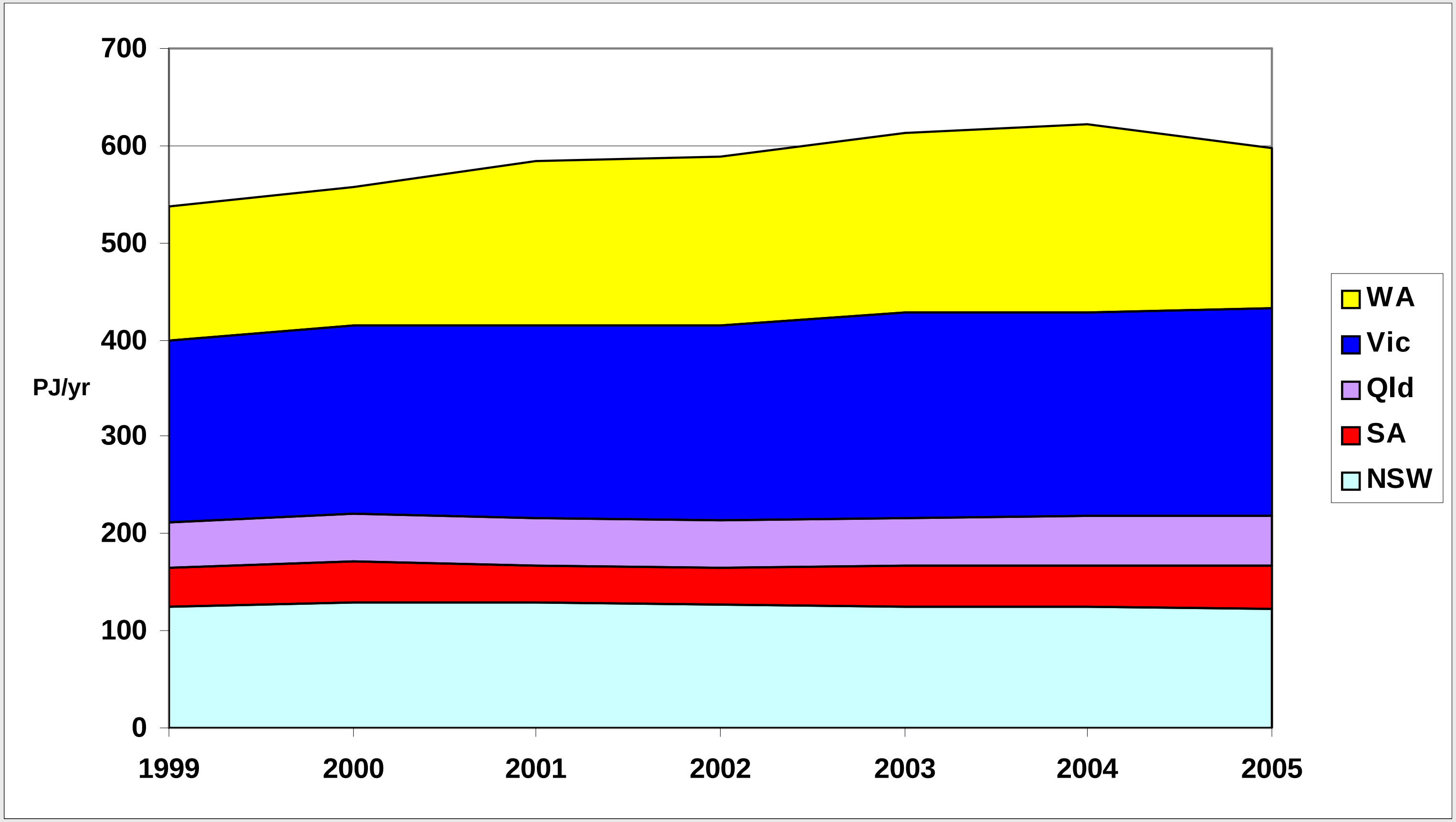
Non-generation gas demand (ABARE)



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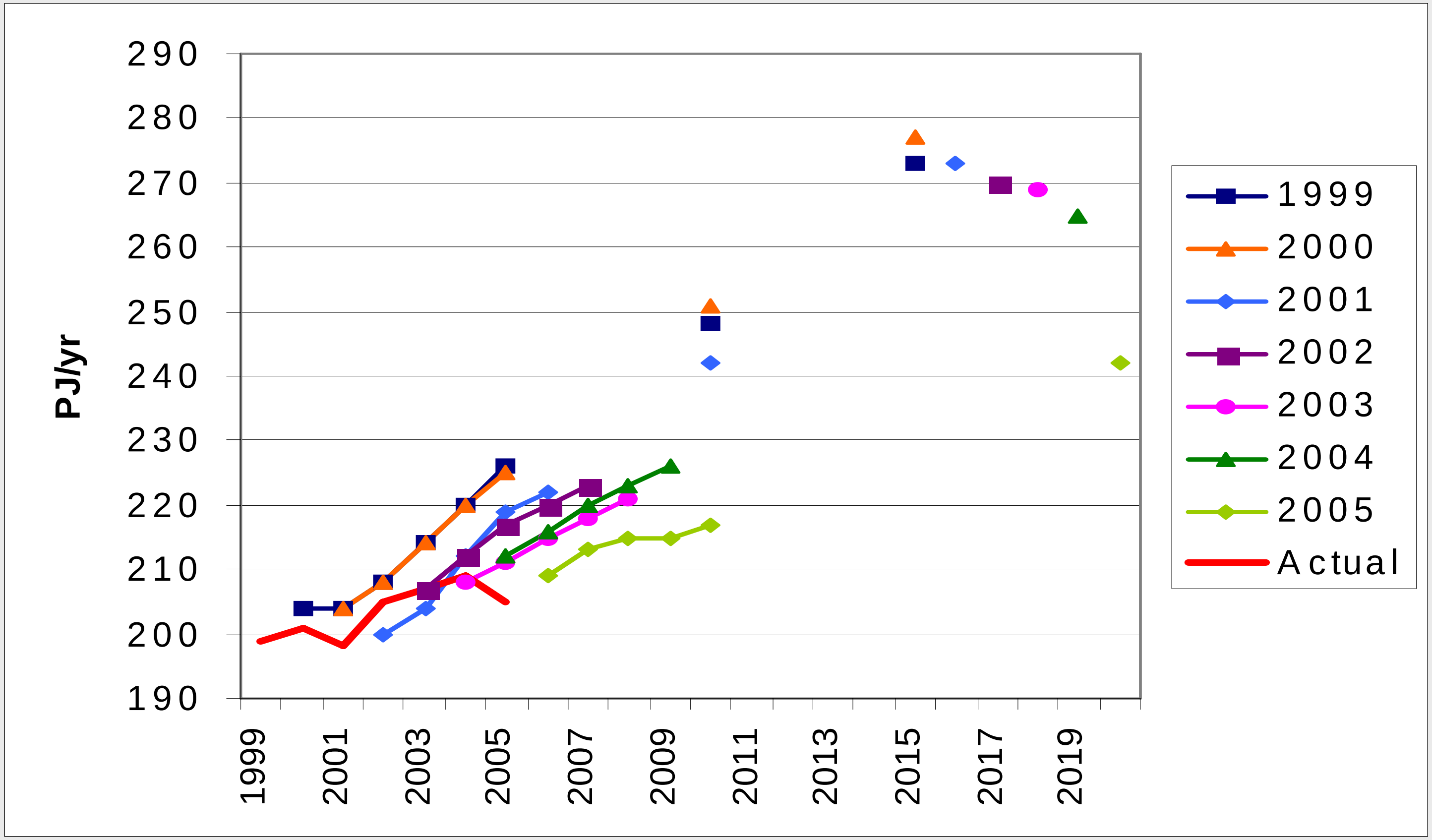
Victorian gas demand and recent forecasts
(VenCorp)



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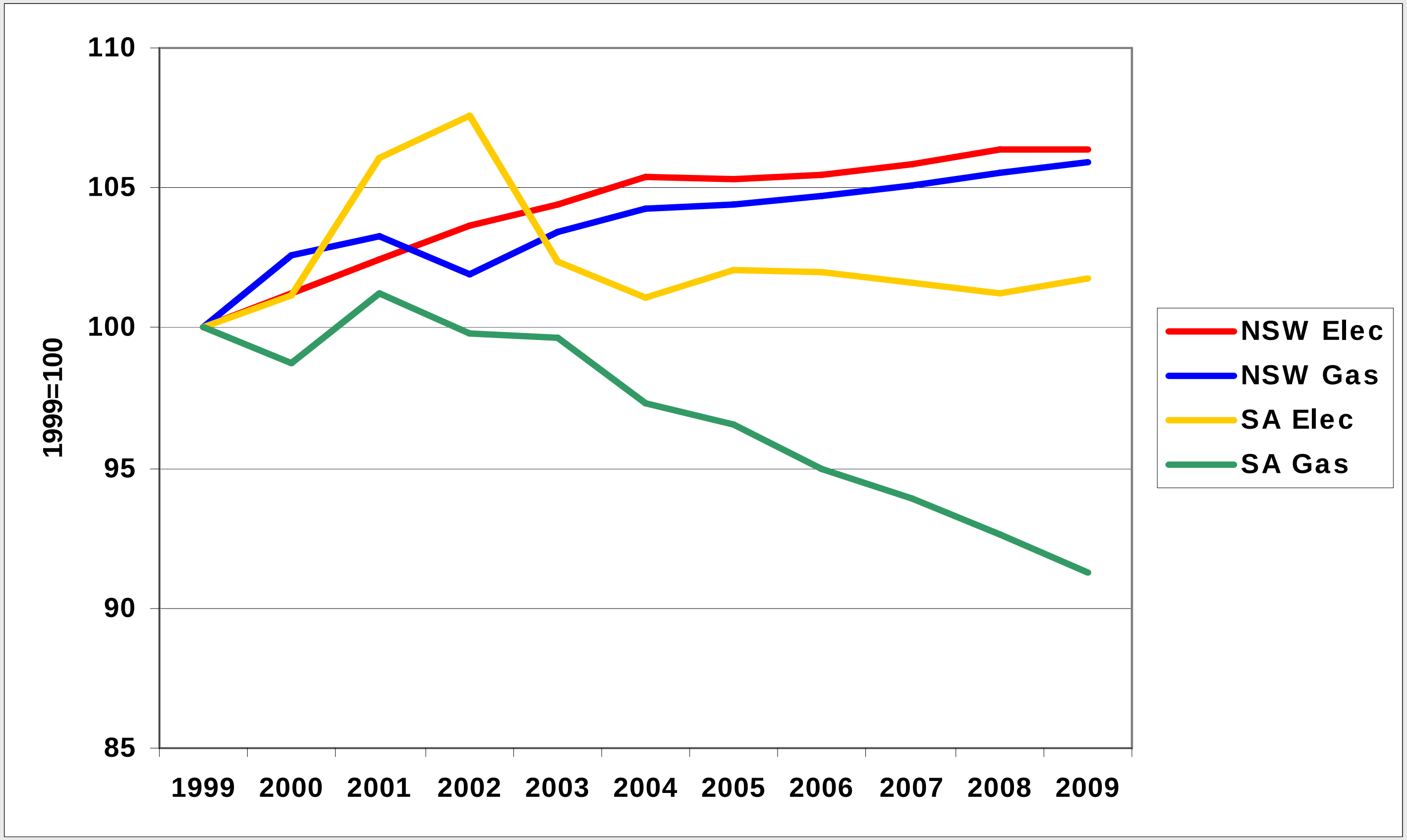
Residential energy use, per household

(Actual and MMA forecasts)



Demand potential

- **Generation**
  - High but needs C-tax equiv & low prices
  - Qld GECs policy successful
- **Industrial**
  - Minerals in Qld, WA
  - Manufacturing static or backwards

Demand potential 2

- **Residential/commercial**
  - No new applications
  - Where are the gas heat pumps?
  - As a flow on, efficiency gains reduce load and increase the unit cost of reticulation, making gas less competitive

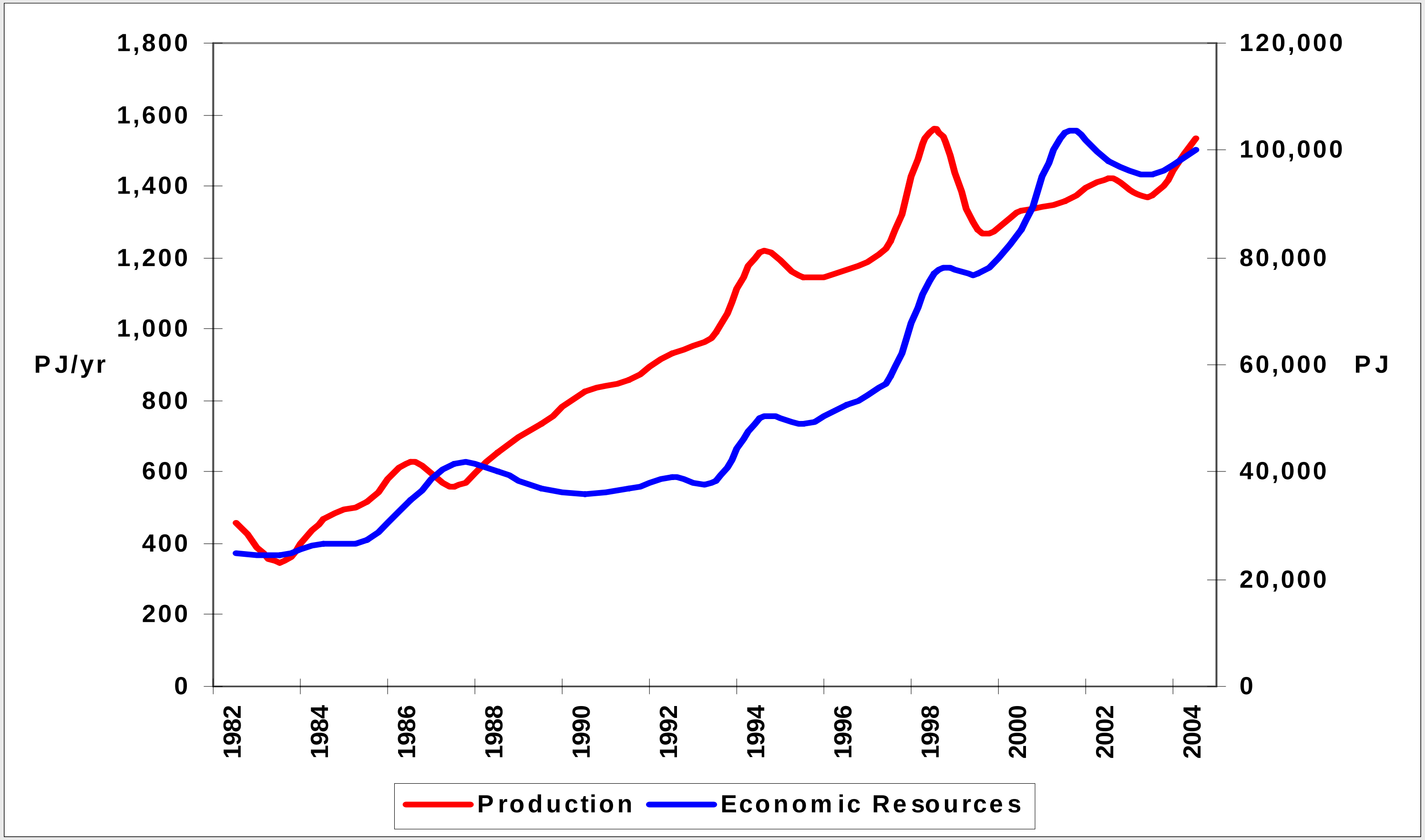
Reserves

- Do we have enough gas to support demand growth?
- Role of Coal Seam Gas.
- Do we need PNG gas?

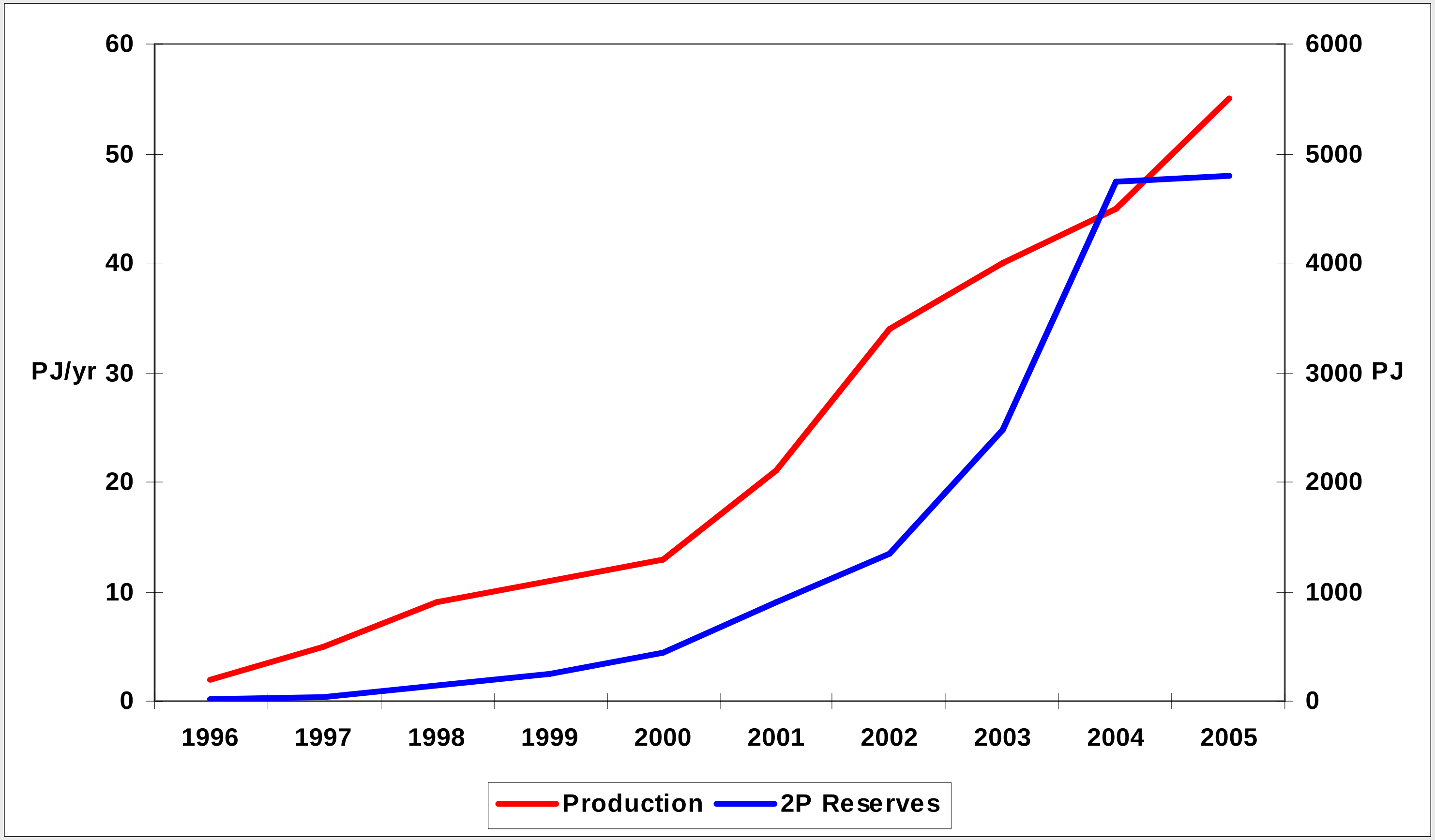
Enough gas?

- History shows there are always more reserves to be found
- Current rates of discovery will support demand growth into the foreseeable future
- But exploration is costly and won’t happen if demand is constrained

Australian gas resources and production
(Geoscience Australia)



Growth of Coal Seam Gas reserves and production (RLMS & Geoscience Australia)



Coal Seam Gas role

- CSG is maturing rapidly
- Reserve development has been driven by prospective demand, partly created by GECS policy
- It has already transformed gas supply in Queensland
- Mainstream role soon

PNG and other remote gas

- PNG's Australian prospects appear to be slipping away for a third time
- Too little demand, too much competitive supply
- May not be a next time if it is used for LNG instead but this doesn't justify taking it now

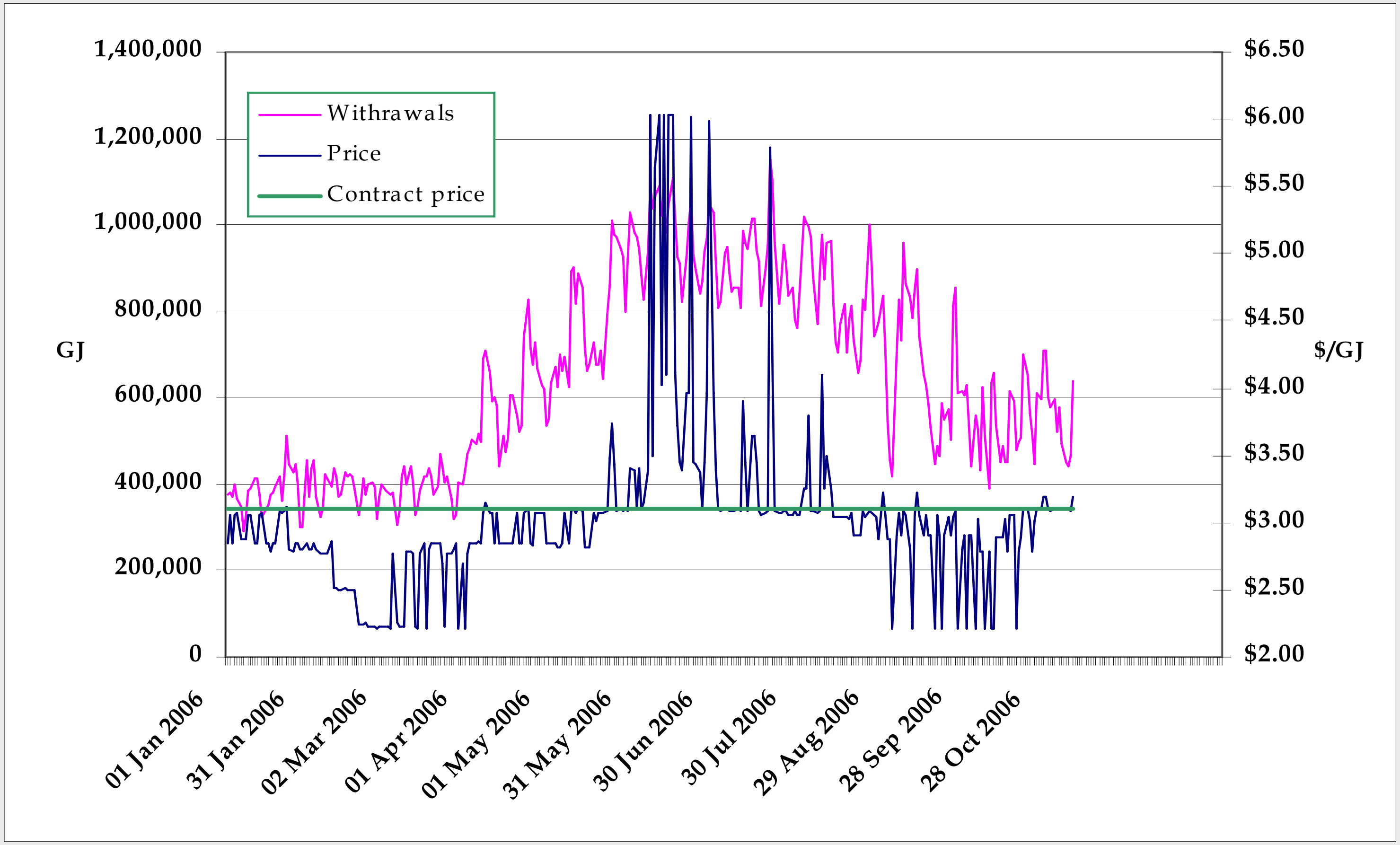
Prices

- How are prices set?
- Will local prices track global LNG and oil prices?

Price setting

- **Primary market still long-term contracts**
  – Facilitates competition by new entrants, keeping price down
  – But not transparent to non-participants
- **Vic short-term market now giving useful price signals**
- **Further short-term markets to be developed by GMLG**

Victorian spot prices – more volatility



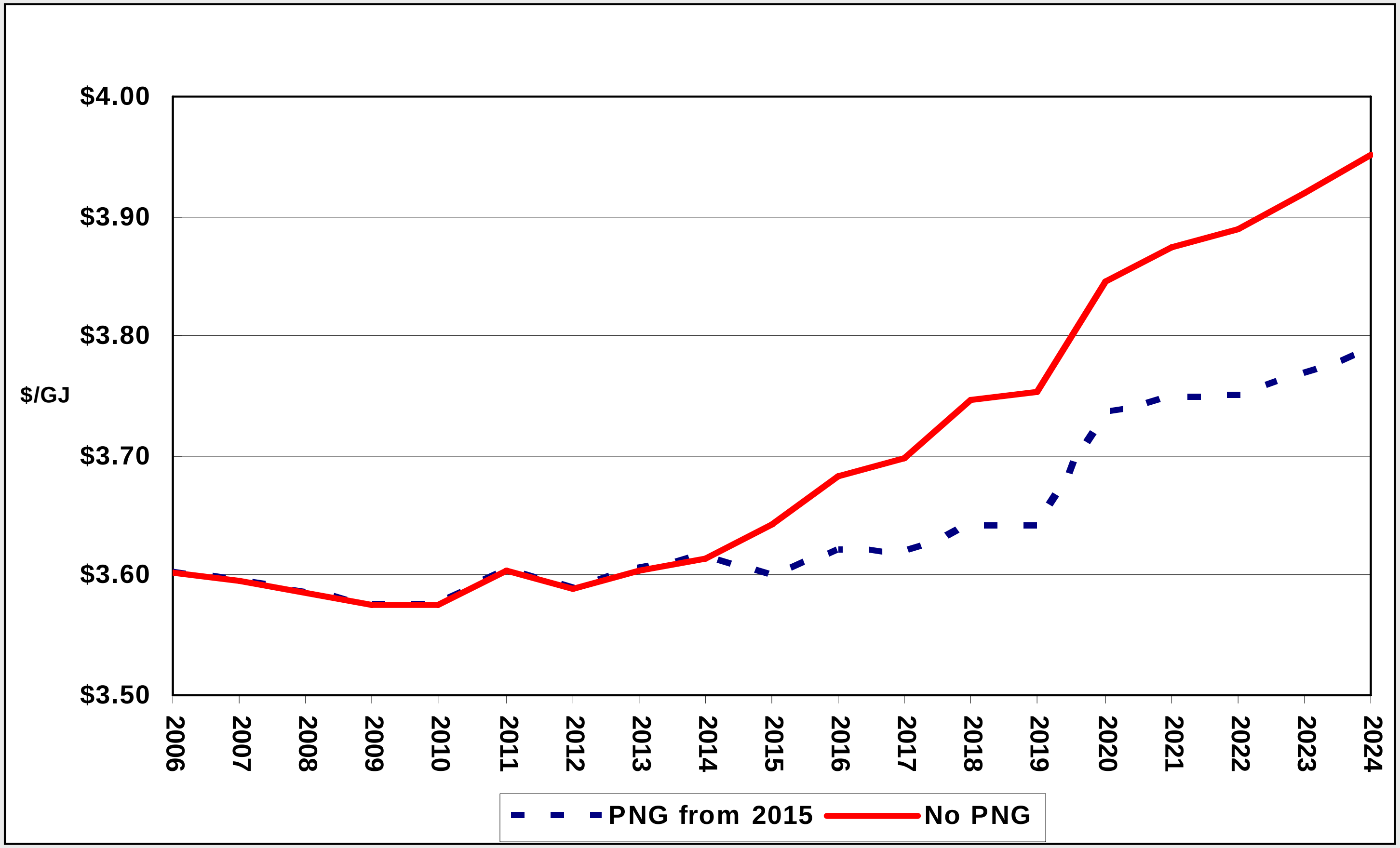
Recent price directions – new contracts

- **Queensland**
  - down due to CSG competition
- **Other Eastern**
  - flat to slightly up, high cost of Cooper offset by Otway
- **WA**
  - up due to the end of domestic reservation and attraction of LNG

Price projections

- **Eastern**
  - Without PNG, flat for 10 years then depends on (CSG) reserves & costs
  - MMA projections agree with others, eg JP Morgan, no LNG linkage
- **Western**
  - Domestic market should settle below current LNG, c \$3.50 - \$4.00/GJ
  - Much higher will destroy demand and reduce profits
  - Impact of reservations policy unclear

Eastern states average delivered price projections (MMA-Gas model)



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Reliability & deliverability

- **Reliability**
  - Gas reliability is not subject to same scrutiny as electricity
  - Failure costs are high – MMA WA study
  - Likelihood that reliability will decline as assets age but not quantifiable

Reliability & deliverability

- **Deliverability**
  - Flexibility in legacy contracts is being lost
  - While generation market needs more
- **What measures can be taken to improve reliability?**

Reliability & deliverability

- **Solutions for both**
  - LNG storage
  - Underground storage
  - Linepack pipelines
- **Characteristics and costs are different**
- **Investments will be necessary in addition to production and pipeline capacity**

Gas' Role - Conclusions

- Australia has adequate gas for the transitional role domestically and in export markets
- But it is not a given that gas use will expand relative to more C intensive fuels
- Decision making needs to reflect the two way demand-supply interaction