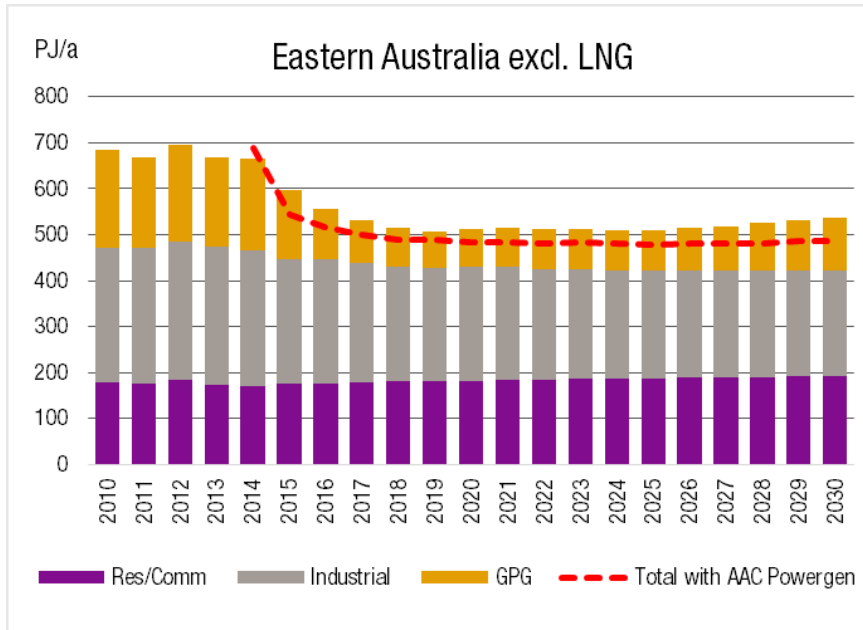


A decorative graphic on the left side of the slide, consisting of a grid of overlapping squares in shades of purple and orange, arranged in a stepped pattern that descends from top-left to bottom-right.

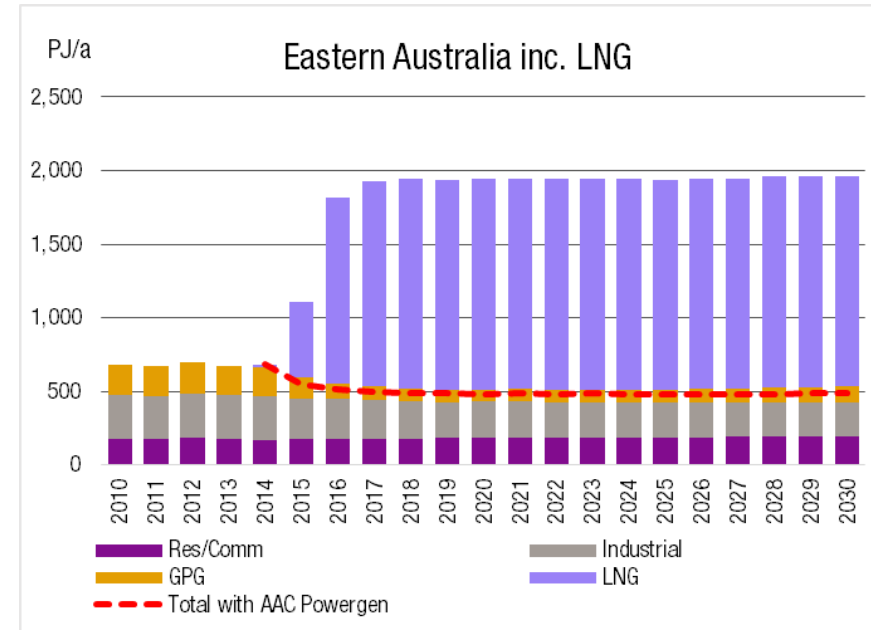
# East Coast Gas Supply and Price Outlook: Risks and Uncertainties

National Energy Efficiency Conference 2015  
Melbourne

# Eastern Australia: historical and forecast gas consumption



Sources: AEMO NGFR 2014; ACIL Allen Consulting modelling



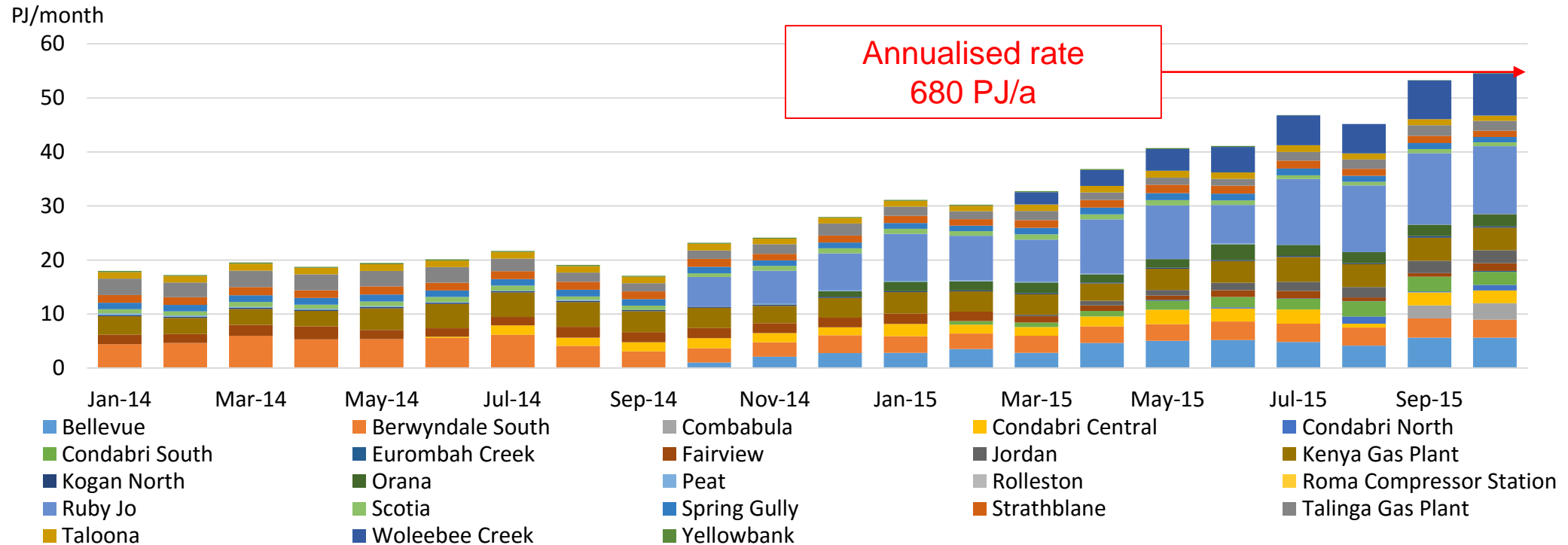
Sources: AEMO NGFR 2014; ACIL Allen Consulting modelling

- Weak growth in residential & commercial consumption
  - Increased customer numbers offset by lower average consumption per connection
- Industrial use contracting
- Sharp drop in gas-fired power generation
- Rapid expansion for LNG exports to ~70% of total consumption

# Eastern Australia: key issues, risks & uncertainties

- Supply & price risk => Demand suppression is already happening
- Major obstacles to onshore exploration in NSW, Victoria, Tasmania
  - Public opinion against gas development is hardening
- CSG ramp-up to LNG projects
  - Supply/demand imbalances => short-term price volatility; draw on third-party gas
  - Arrow LNG shelving positive for longer-term supply adequacy
- Oil price impact on LNG projects and upstream development
  - Reduced netback puts squeeze on upstream economics, reduced E&P spend
  - Slower CSG development - spot/portfolio LNG more attractive?

# How is QLD CSG supply responding to LNG start-up?

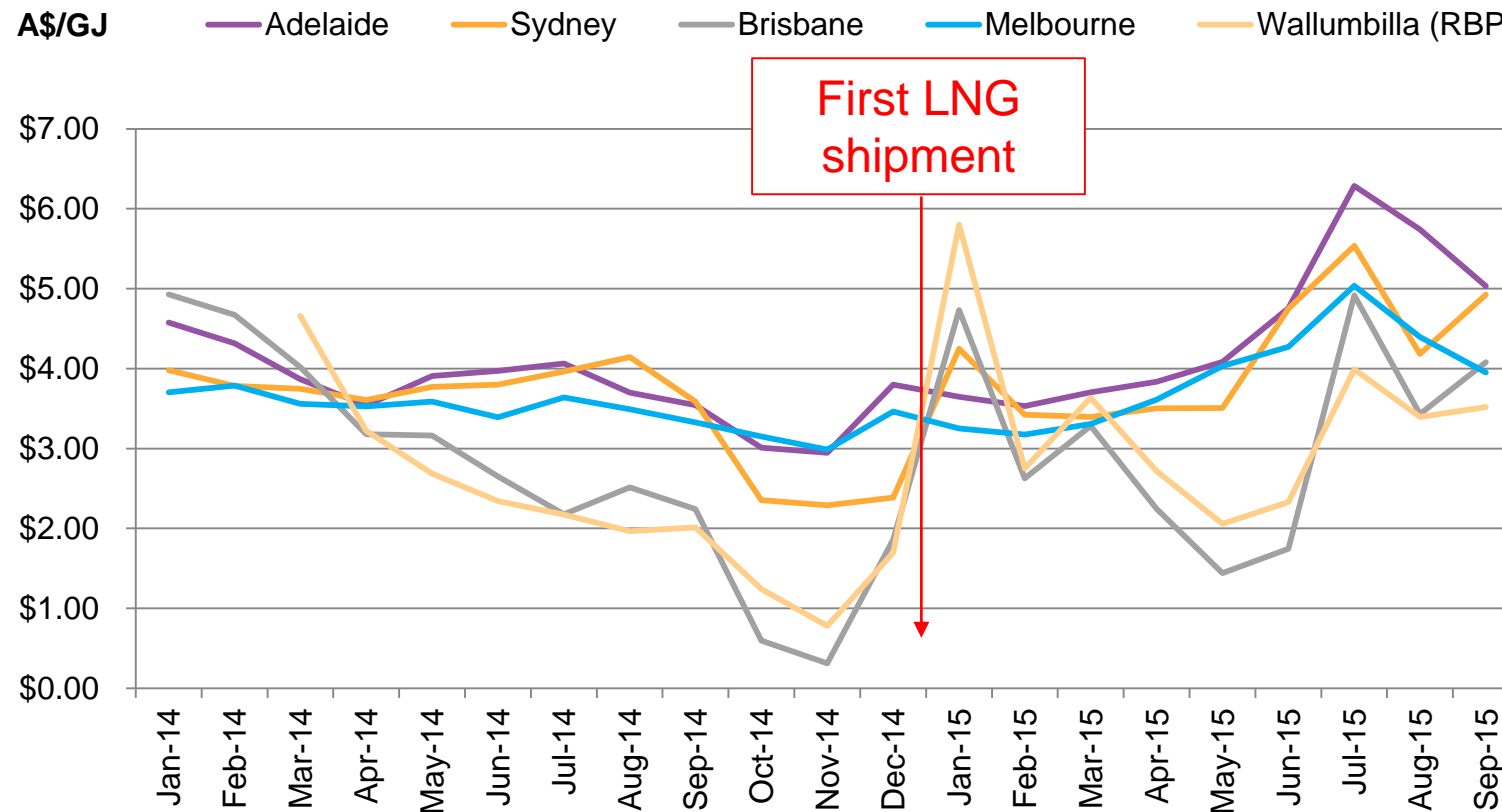


Source: ACIL Allen Consulting compilation of Gas Bulletin Board data

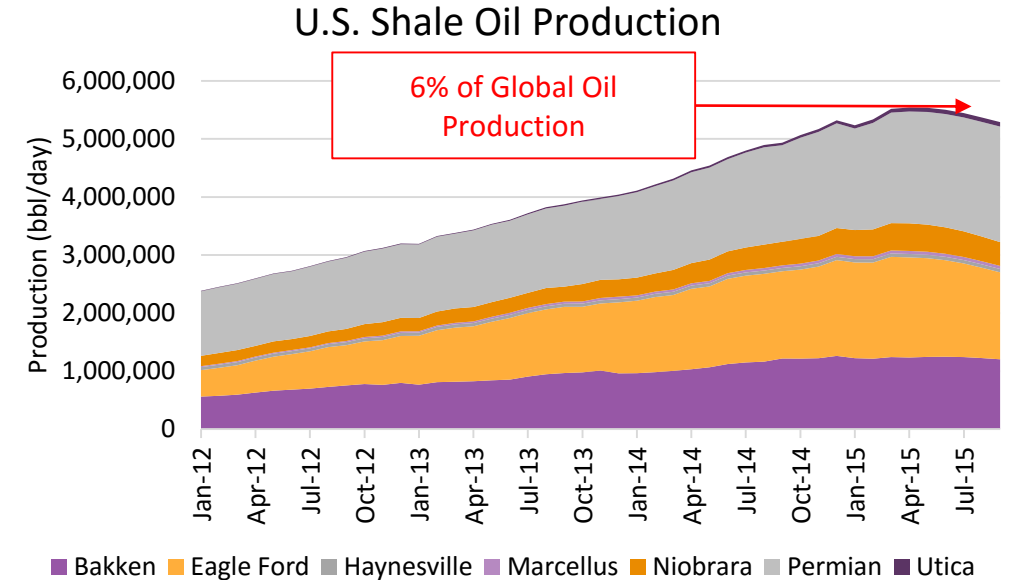
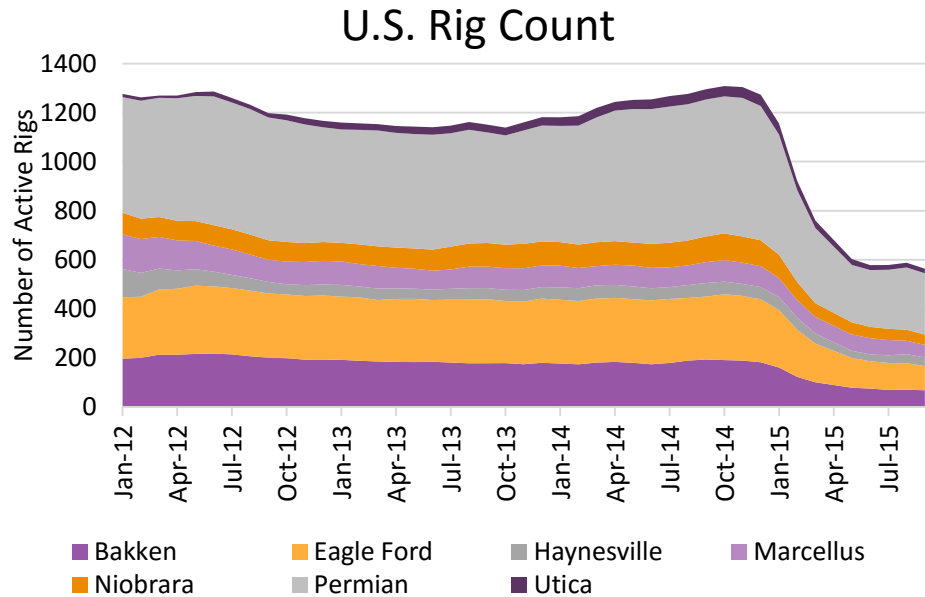
- On track so far: 10 new production facilities on line in past 12 months
- Annualised production rate now higher than EA domestic demand
- Approaching half annual rate of supply required to fill six Gladstone LNG trains

# How are prices responding to LNG start up?

- Spot prices have responded as expected – up and volatile
- Contract prices – no recent deals; tight supply, high prices persist
  - Will EA producers have the same appetite for oil price linkage?



# Are oil prices likely to recover soon?



Source: ACIL Allen Consulting compilation of U.S. EIA data

- U.S. rig count has dropped dramatically with collapse in oil price; production peaked April 2015 and will fall further
- BUT other factors contribute to on-going excess supply:
  - Increased Saudi, Russian production; weak China demand; Iran re-entry?
- No short term recovery in sight

# What do low oil prices mean for Curtis Island LNG Projects?

- Margin squeeze but LNG projects still viable
  - IRR positive to +/- US\$40/bbl
  - Cover variable costs (inc. sustaining upstream capex) to +/- US\$20/bbl
- Some marginal CSG resource now uneconomic
  - May look to alternatives: 3<sup>rd</sup> party gas, spot LNG
  - Arrow CSG may contribute if economic
- A silver lining?
  - Short-term LNG oversupply & weak spot LNG prices may relieve time/cost pressures on upstream CSG development

# Will lower oil prices provide price relief for domestic customers?

- Lower oil prices mean:
  - Reduced LNG netback value
    - BUT Long-run vs Short-run Netback is highly significant
      - Long-run netback to wellhead @ US\$50/bbl ~A\$/1.70/GJ
      - Short-run netback to wellhead @ US\$50/bbl ~A\$/7.20/GJ
  - More marginal CSG in Bowen/Surat becomes uneconomic
    - LNG producers may look to 3<sup>rd</sup> Party and/or LNG spot supply
  - Reduced incentives to explore & develop new supply
    - Exacerbates supply constraints in long term



# Take-away messages

- EA domestic gas consumption will shrink by 30% to around 500 PJ/a by 2020
  - Mainly Gas-fired Power Generation and Large Industrial Loads
- New supply developments outside established production areas look problematic
  - Policy settings, public opinion and falling oil prices major obstacles
  - Significant cost challenges
- Lower oil prices offer little if any price relief for domestic gas customers
  - Spot prices will be volatile; long-term supply tight and high-priced
  - Curtis Island LNG Projects will continue to attract gas at relatively high prices

A decorative graphic on the left side of the slide, consisting of a grid of overlapping squares in shades of purple and orange, arranged in a stepped pattern that descends from top-left to bottom-right.

# East Coast Gas Supply and Price Outlook: Risks and Uncertainties

National Energy Efficiency Conference 2015  
Melbourne