RISC

Celebrating **25** years

Australian East Coast Gas Issues

SEAAOC September 2019

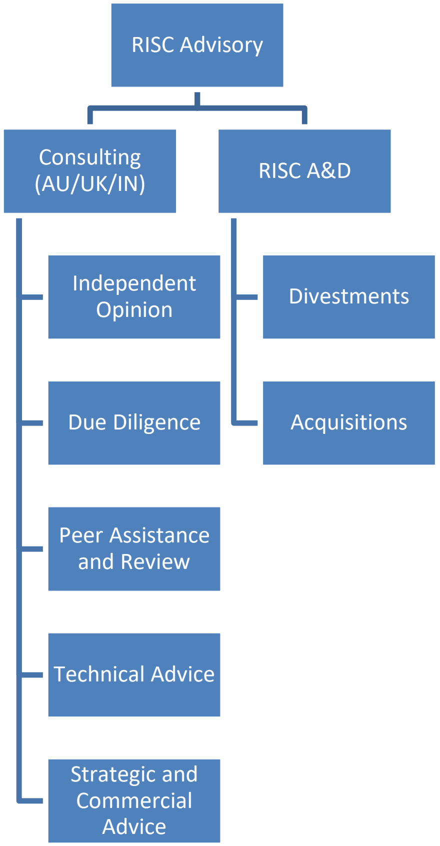
decisions with confidence

Who we are

- RISC is a truly independent advisory firm. We provide impartial advice to a broad range of clients in the oil and gas industry, enabling them to make their business decisions with confidence.
- We work in partnership with our clients to support their interests in the oil and gas industry, offering a broad and innovative perspective on oil and gas projects around the world.
  - We have many years of practical experience and provide a bespoke service.
  - We provide insightful views on technical, commercial and strategic issues
  - We help our clients understand the uncertainties and risks associated with the oil and gas industry.

What we do……RISC Group Expertise

- **Independent Opinion**
  - CPRs; ITSRs etc..
  - Reserves / Resources audits and certification
  - Expert Witness
  - Asset/Portfolio valuations
- **Due Diligence**
  - Support for acquisition, debt/equity raising etc..
  - Asset/Portfolio valuations
- **Peer Assistance and Review**
  - Modelling
  - Feasibility and Concept Selection studies
  - Pre/Post FEED/FID, and execution reviews
- **Technical Advice**
  - Basin/Exploration studies and evaluation
  - Field Development Plans
- **Strategic and Commercial Advice**
  - Portfolio assessment
  - Gas market evaluation
  - Workshop facilitation
- **Divestments and Acquisitions**
  - Sales and purchase processes



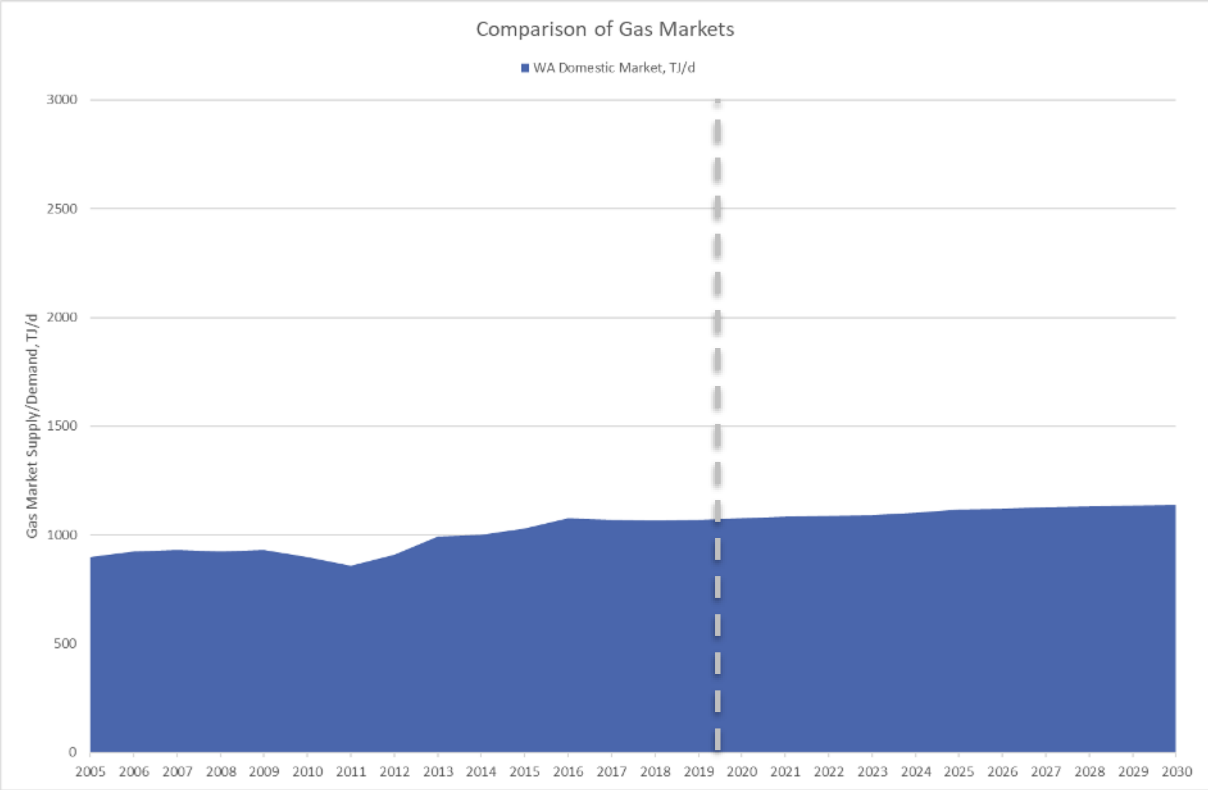
Who we work with

RISC

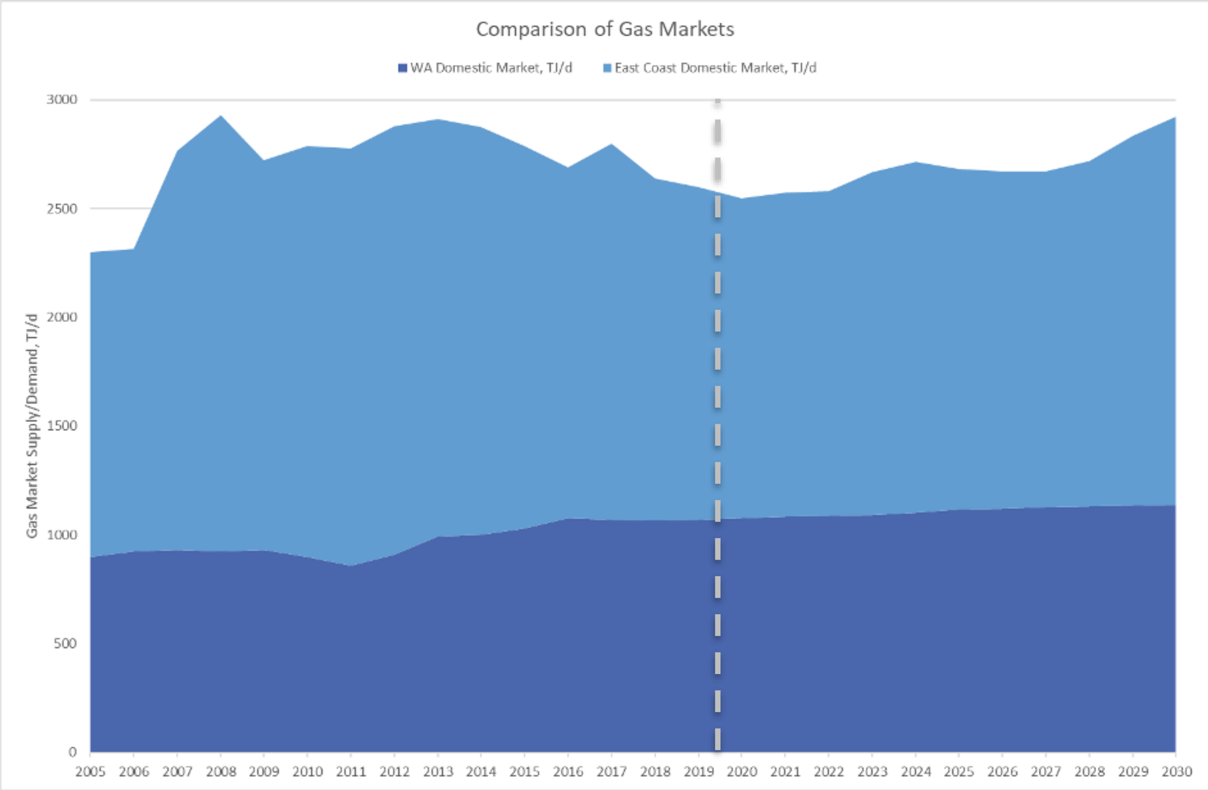
Famous misquotes….

▪ “Heavier than air flying machines are impossible”	Lord Kelvin, President British Royal Society, 1895
▪ “By 1950 London will be under 9ft of smelly horse manure”	London Times, 1898
▪ “The peak of oil production will be passed possibly within 3 years”	US Geological Survey, 1919
▪ “There’s a world market for about 5 computers”	Thomas Watson, Chair IBM, 1943
▪ “World oil production will peak at 12.5 Bbbl/yr (34 mmbbl/day) in ~2000”	M. King Hubbert, 1956
▪ “There’s no reason anyone would want a computer in their home”	Ken Olsen, DEC (later Compaq), 1977
▪ “The PNG-QLD pipeline could supply 15% of East Coast Gas by 2015”	ACIL ,1998
▪ “CBM reserves are small and can supply only a fraction of the PNG pipeline”	Petroleum Economist, 2002
▪ “By far the largest source of US incremental gas supply is expected to be LNG”	EIA, 2006
▪ “It is unlikely that significant changes in LNG pricing will take place”	IEEJ, 2006
▪ “Natural gas prices will remain high in the US for the foreseeable future”	EIA, 2007
▪ “LNG will never become commoditized, the capital costs are too great”	Unknown Engineer, FLNG conference 2013
▪ *“Natural gas prices on the East Coast will never return to A$4-5/GJ levels”*	*Analyst, APPEA 2019*
▪ *“The Beetaloo is like the Marcellus 10-12 years ago….”*	*Multiple commentators at SEAOCC 2019*

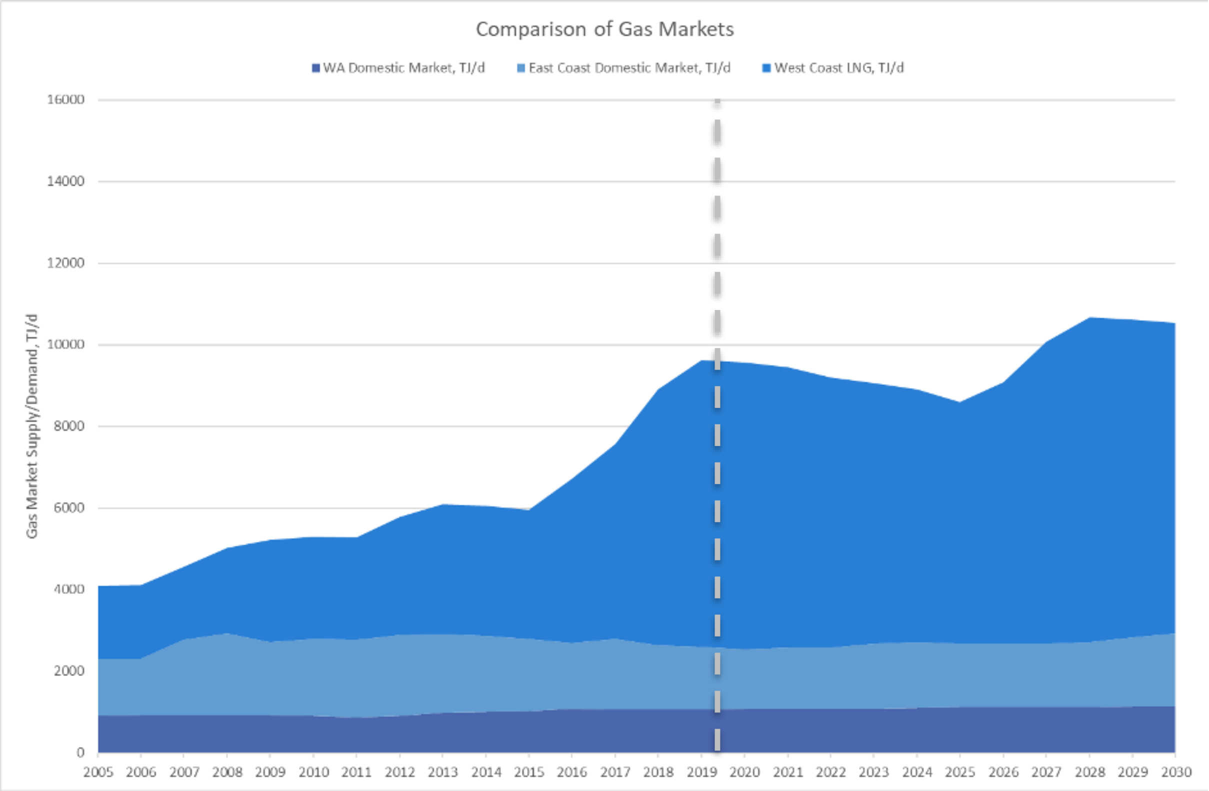
Australian Gas Markets



Australian Gas Markets



Australian Gas Markets



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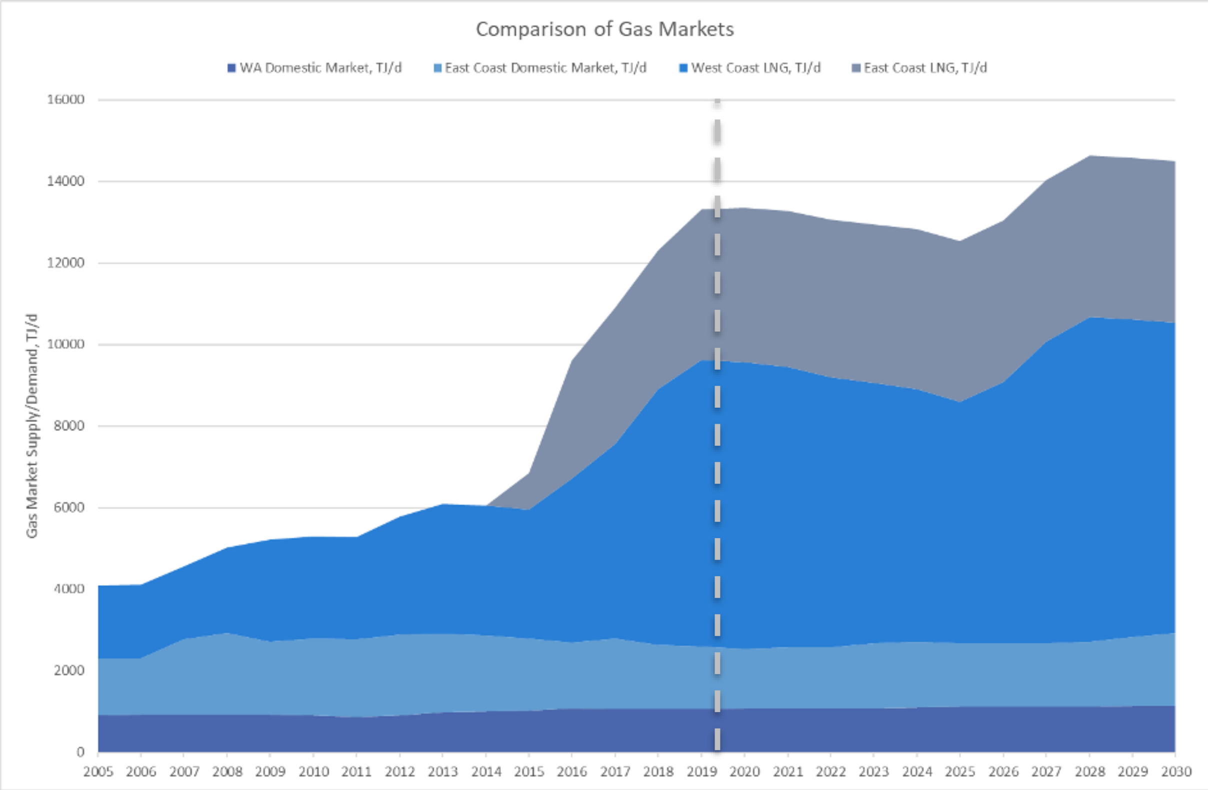
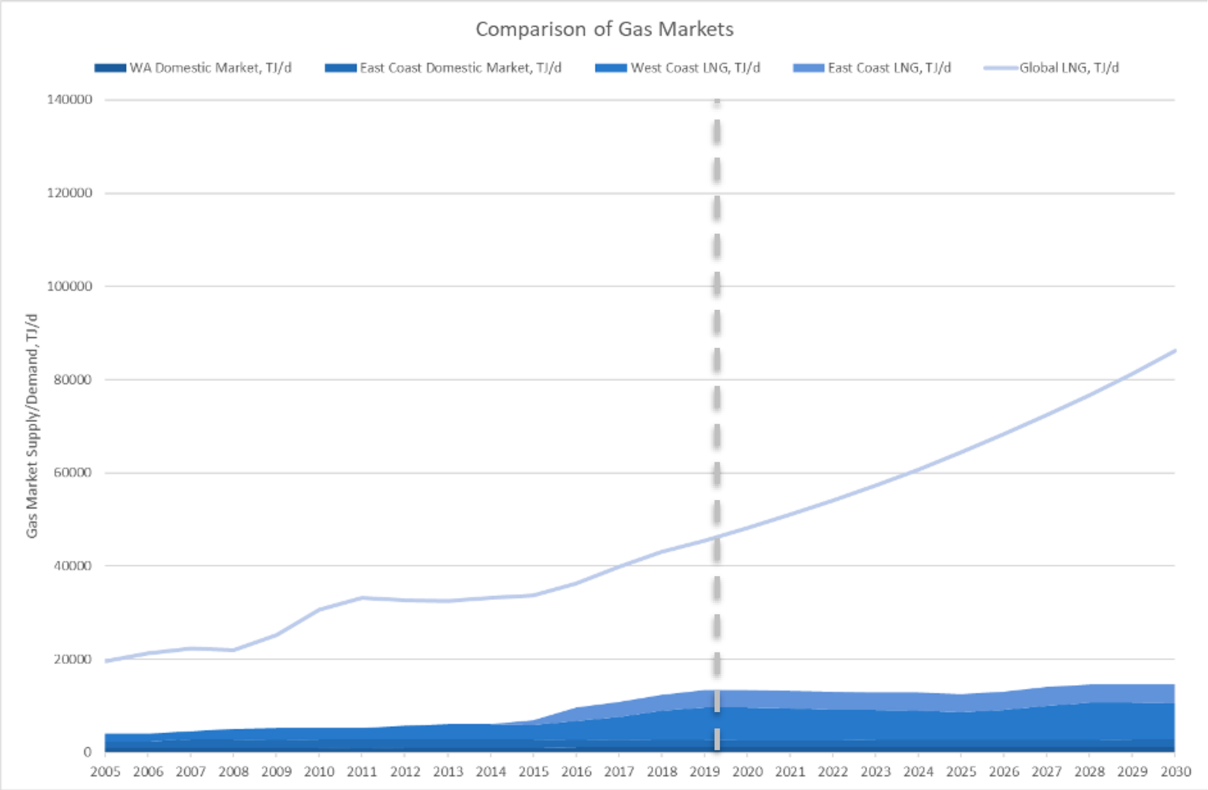
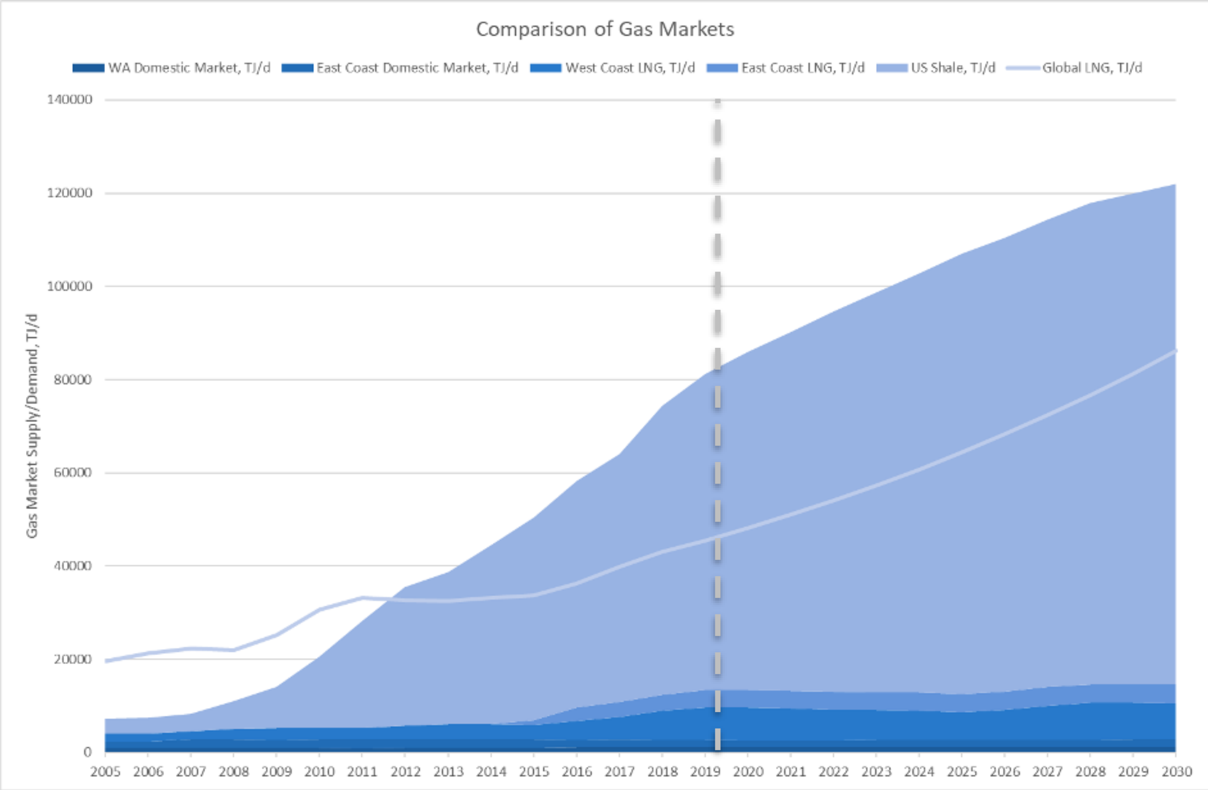


Australia and Global Markets



Australia and Global Markets



5 LNG Terminals are planned for Eastern Australia

NSW

- Newcastle Gas Dock
  - EPIK Energy
    (Energy Projects and Infrastructure Korea)
- Port Kembla Gas Terminal
  - Australian Industrial Energy (AIE)
    (Squadron Energy, Marubeni, JERA)

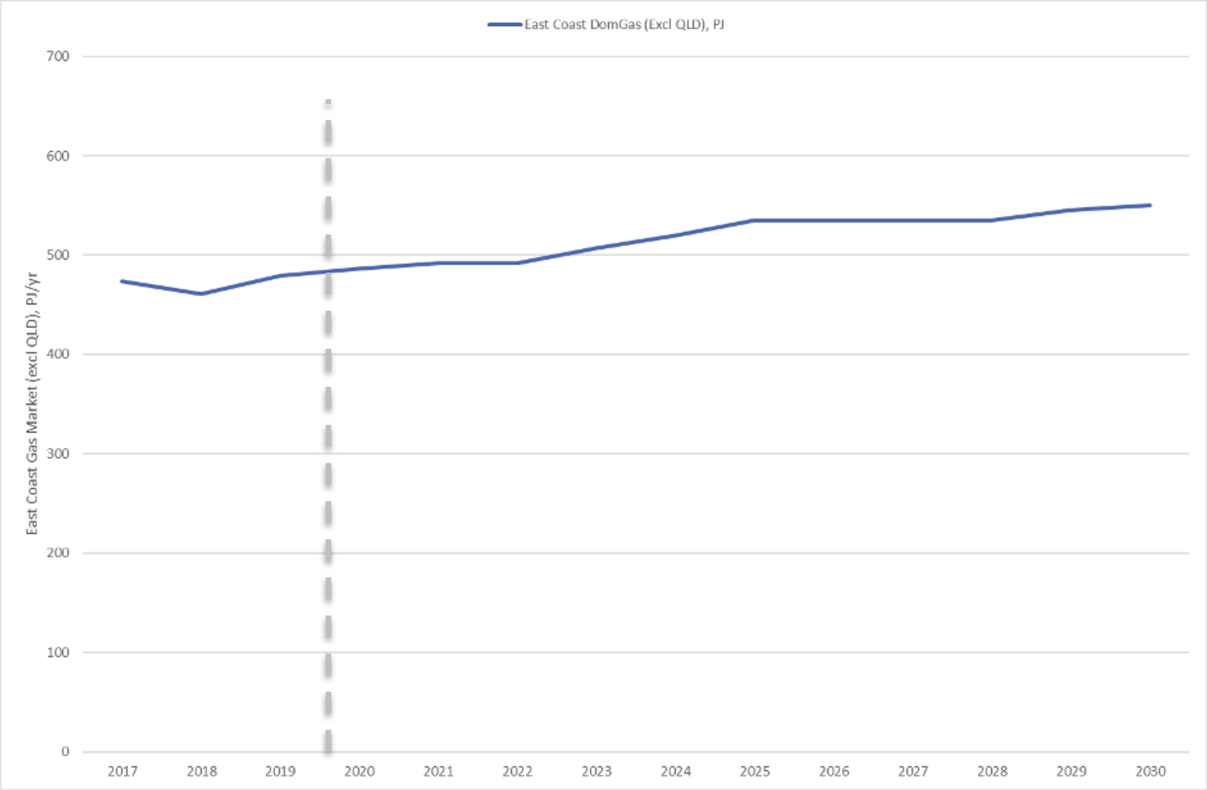
VIC

- Longford
  - ExxonMobil
- Crib Point
  - AGL

SA

- Pelican Point
  - Venice Energy
    (Mitsubishi)

Eastern Australia Market



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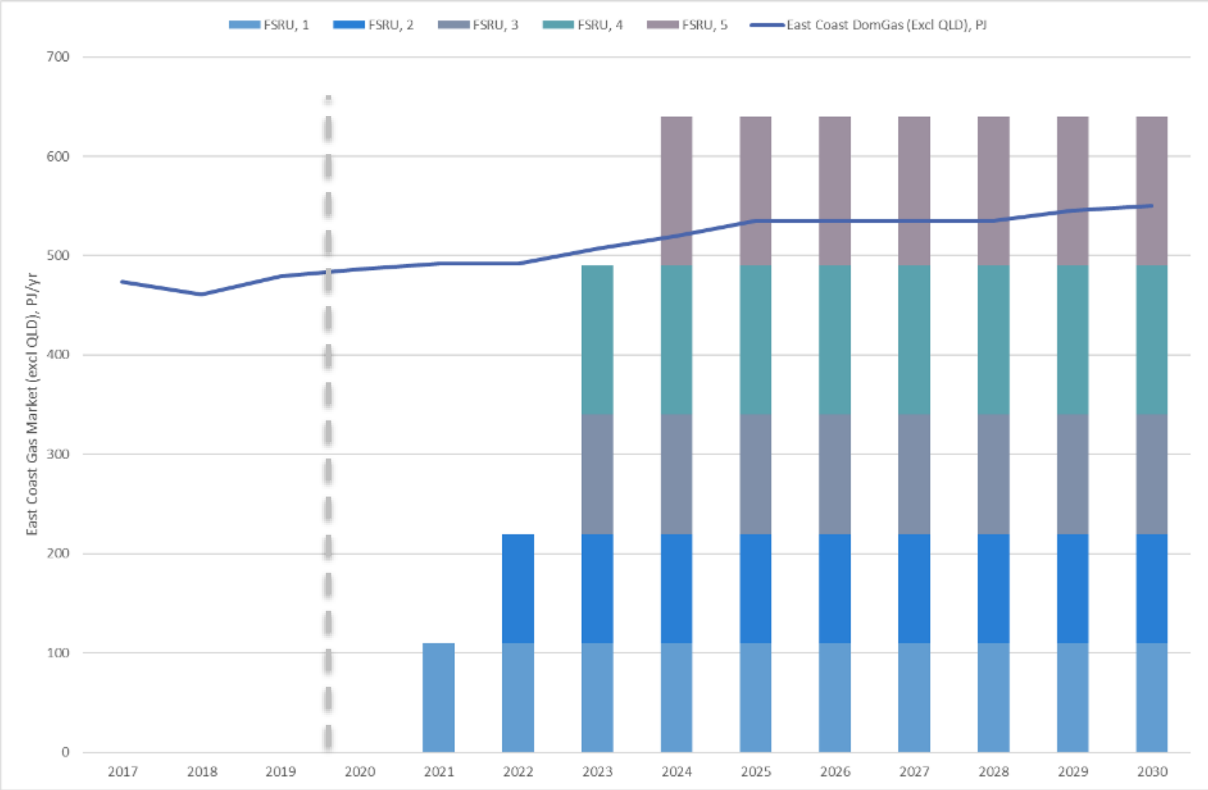


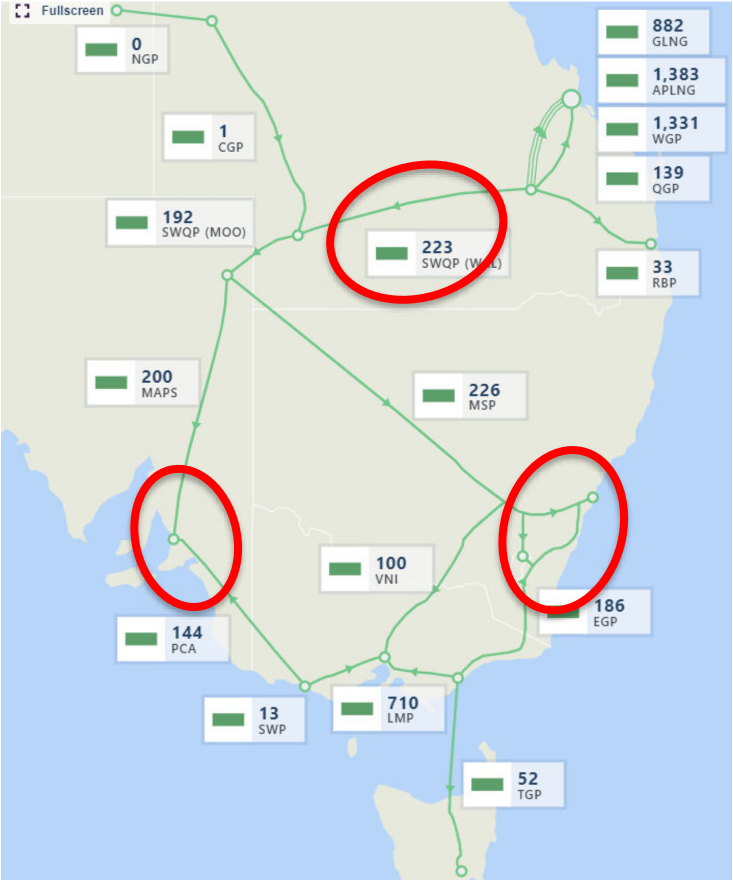
Daily constraints - infrastructure limitations

Getting gas to where it is needed when it is needed is an issue:

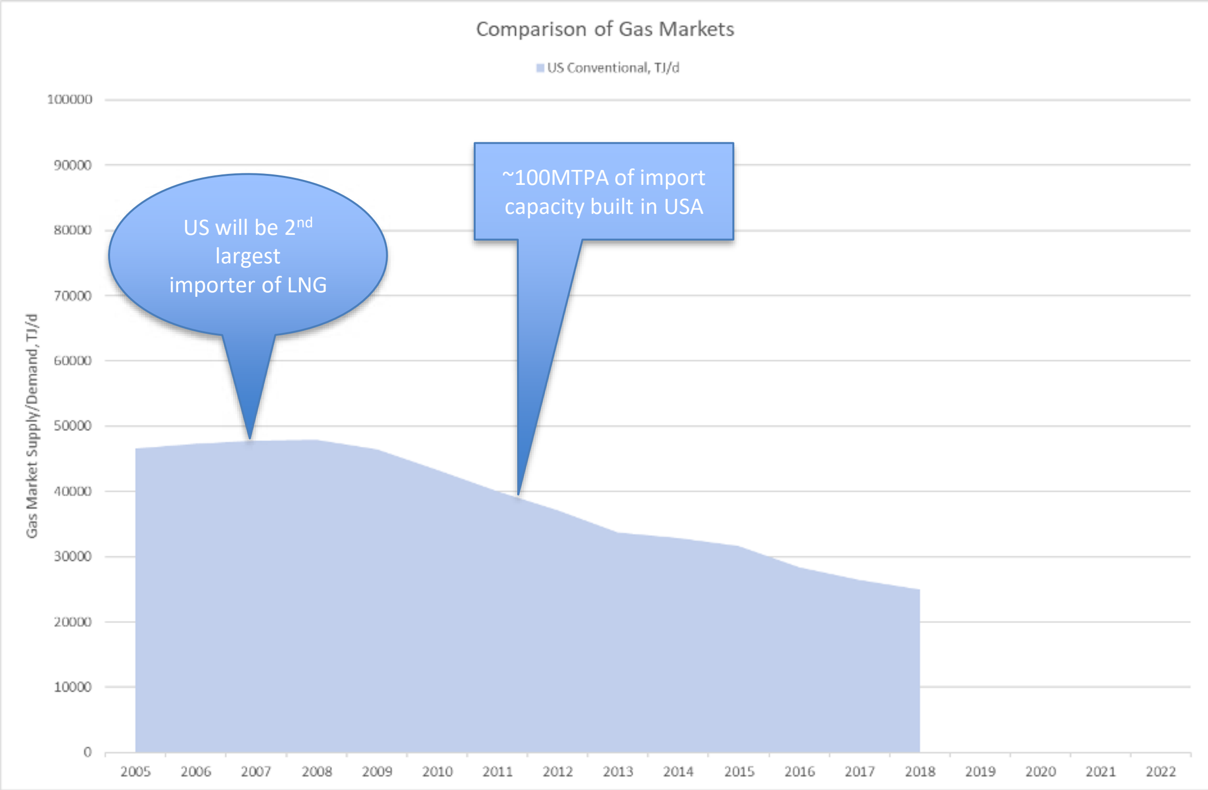
- QLD GP designed to flow West to east, but flows the other way during periods of high demand
- Iona Gas Storage and Longford Gas Plant together struggle to supply Victoria and South Australia.

- NSW (Sydney) and SA (Adelaide) are most vulnerable parts of the system as they are the furthest sinks from sources, and have already experienced infrastructure limitations.
  - NSW larger population
  - SA larger resource base

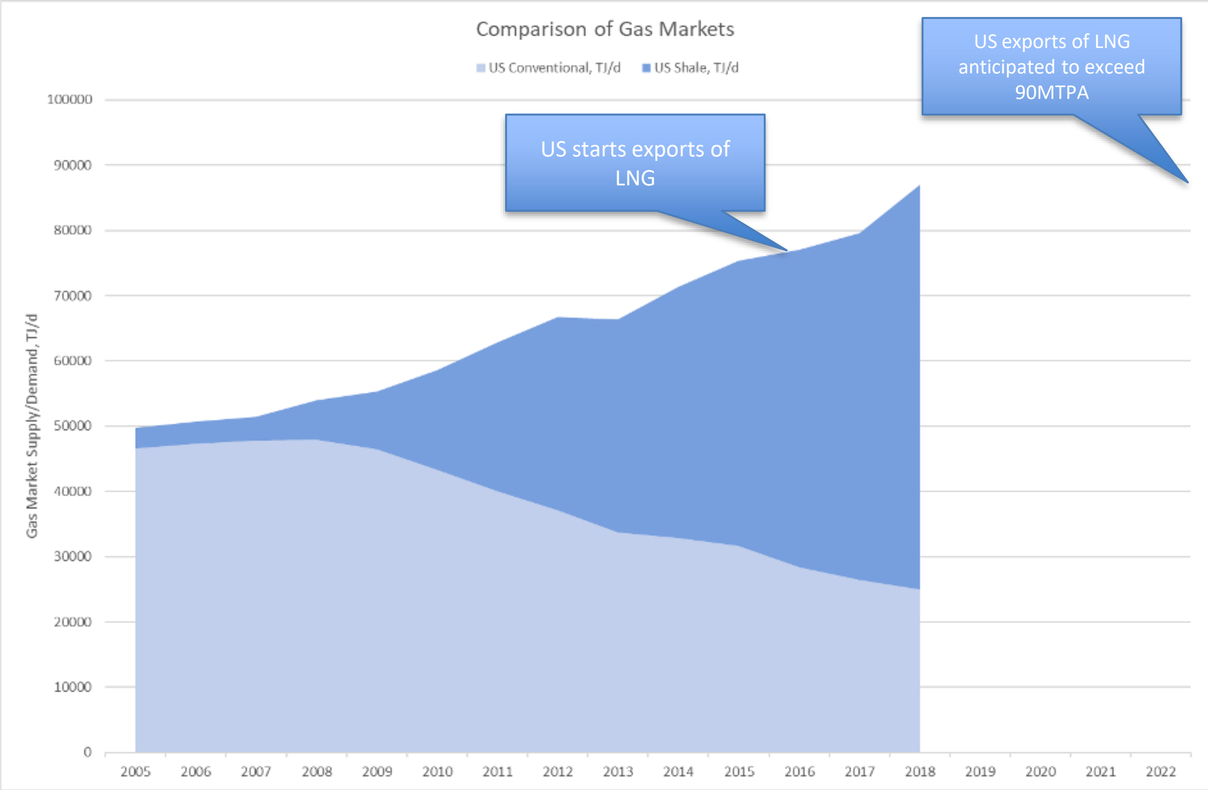
- 1 FRSU each?



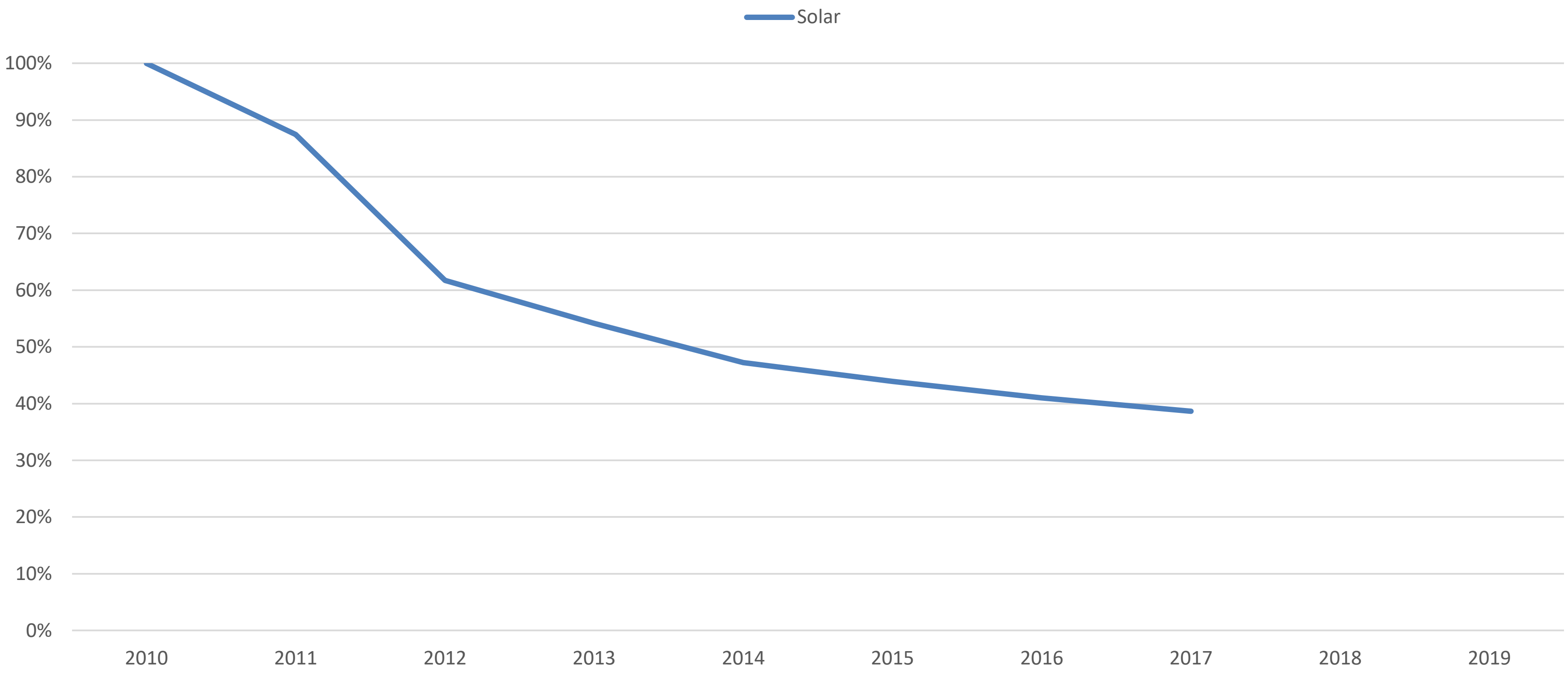
US Gas Market changes



US Gas Market Changes (II)



The impact of a fundamental shift in costs....



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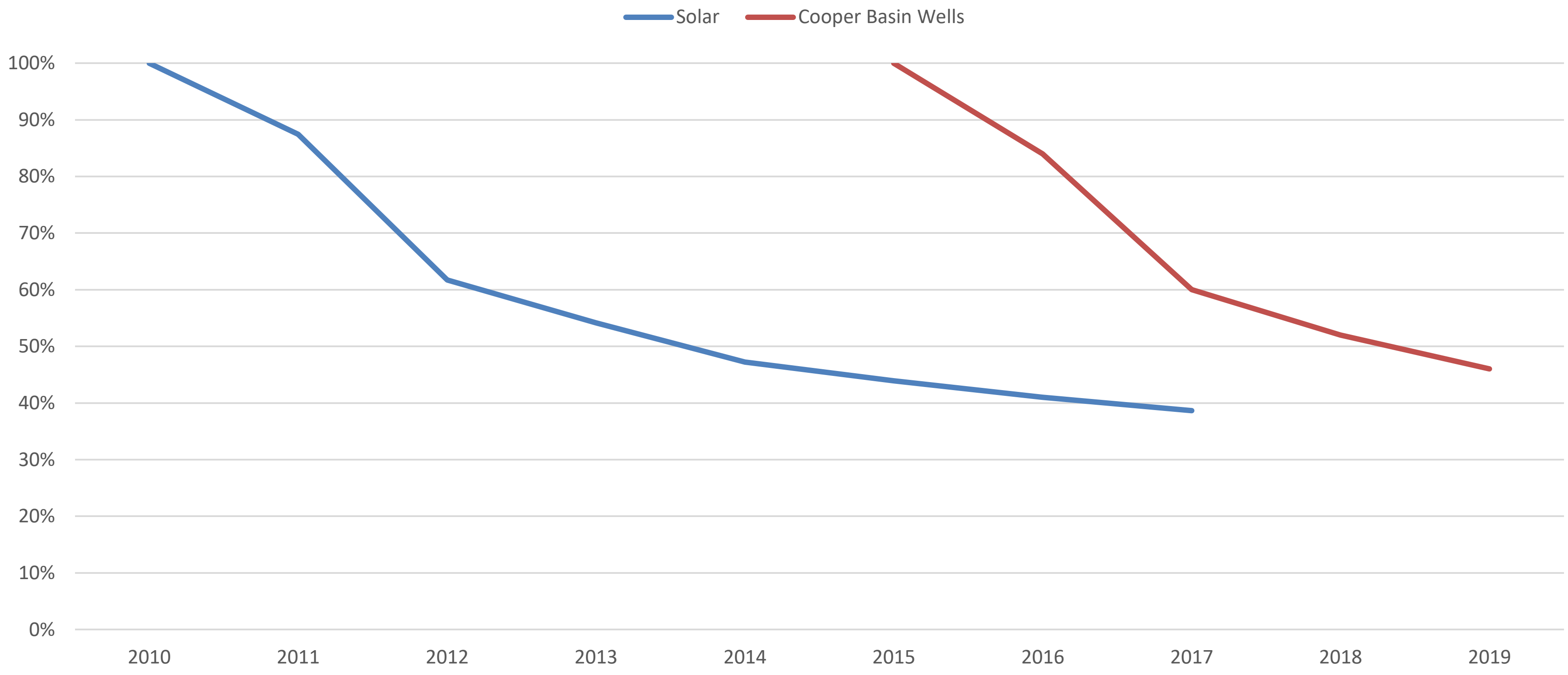
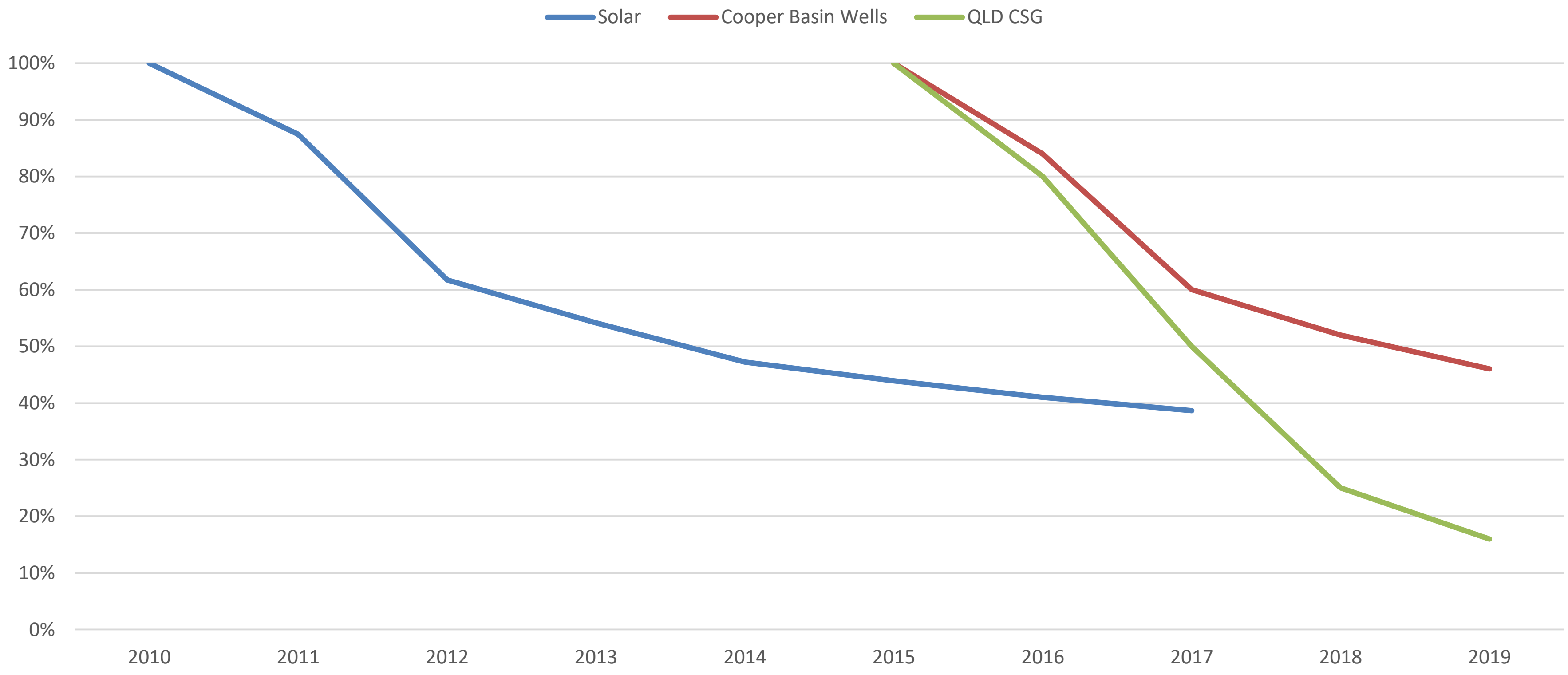
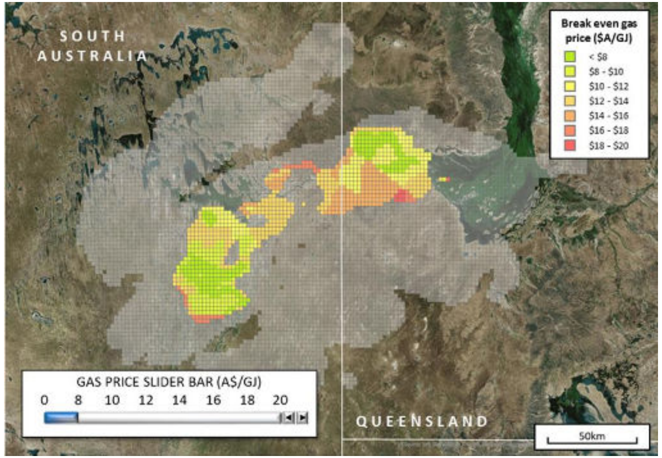


The Impact of a fundamental shift in costs…



Conclusions - RISC views on East Coast Market

- Shortage of gas is being experienced already – LNG export projects are not running to capacity, and peak domestic gas supply is not being met.
- The current infrastructure and commercial arrangements do not support domestic development that would supply sufficient gas where it is needed.
- LNG imports are likely the only source of gas in the short term given the current moratoria in place on exploration and development
- In the longer term, with the right support and development, unconventional plays could radically alter the current views of the East Coast market



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