



Celebrating **25** years

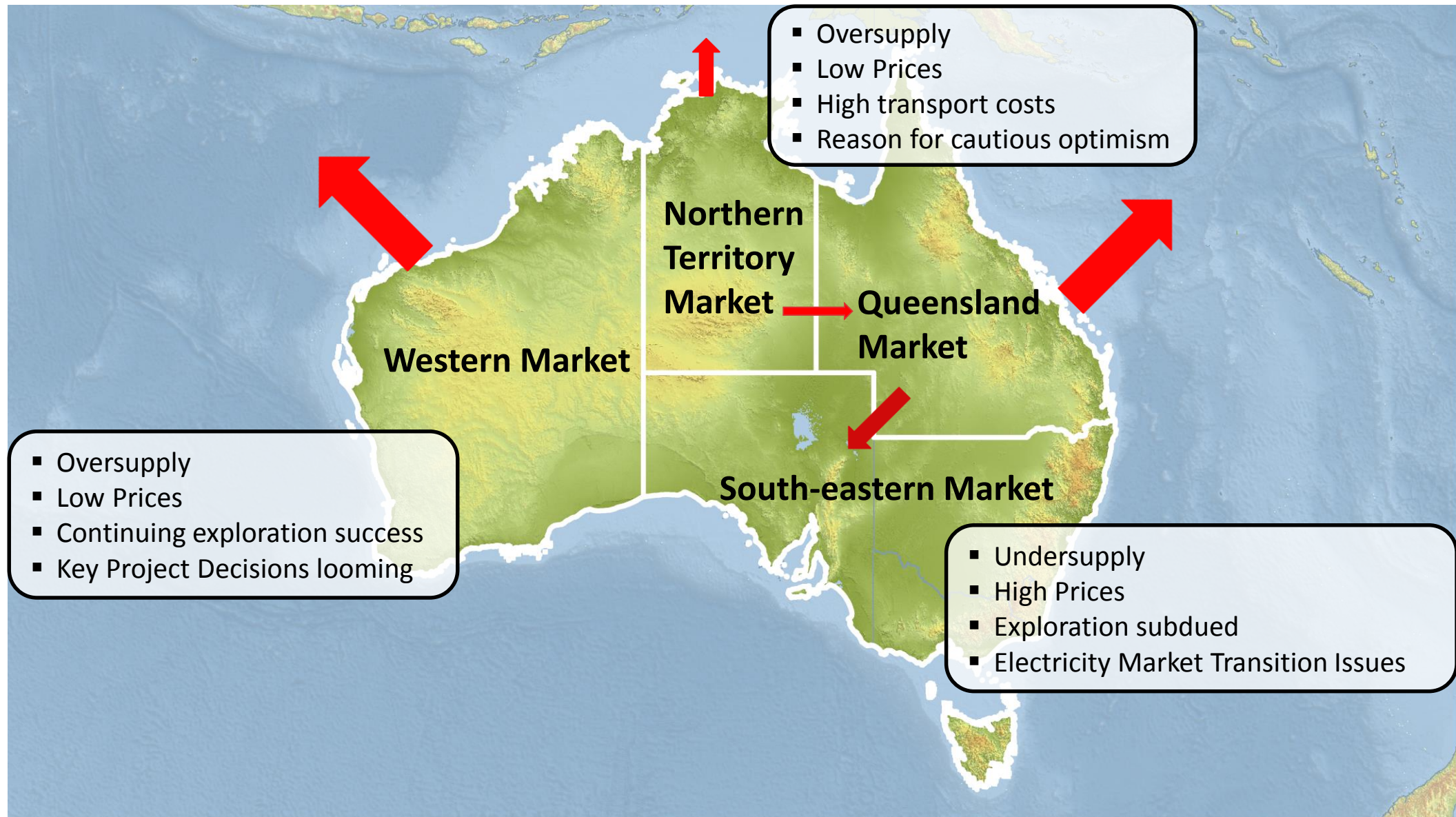
# Australian Gas Market Update

Joe Collins

September 2019

*decisions with confidence*

# Australia's Four Gas Markets – Key Themes



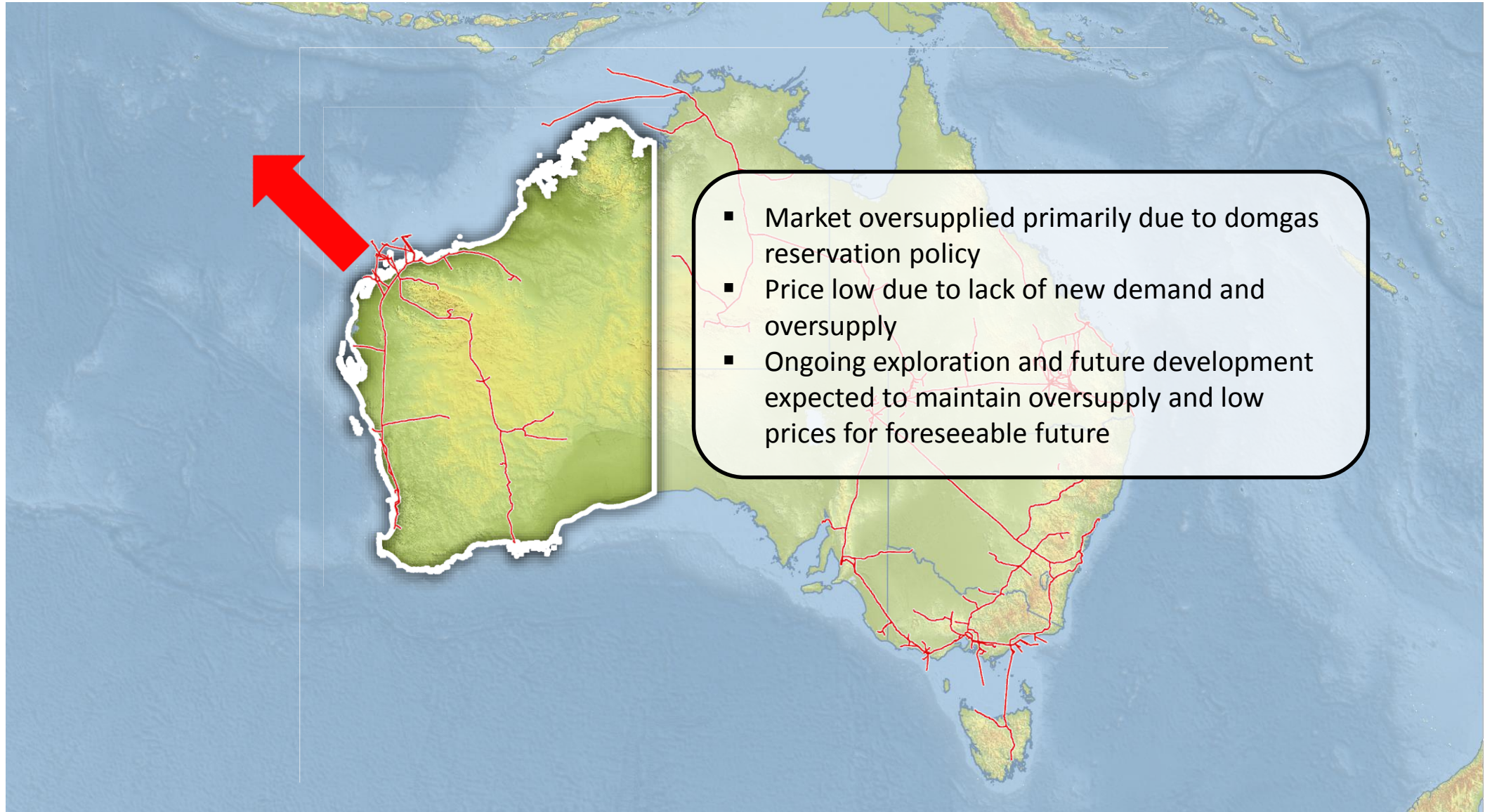


**RISC is an independent oil and gas consultancy firm. We have completed over 2,000 assignments in more than 70 countries for over 500 clients and have grown to become an international oil and gas consultant of choice.**

RISC has been working in partnership companies for over 25 years, providing impartial technical, commercial and strategic advice to our clients, and supporting their interests in the oil and gas industry. We use an integrated project team approach to offer a broad and innovative perspective on oil and gas projects around the world, enabling our clients to make their business decisions with confidence.

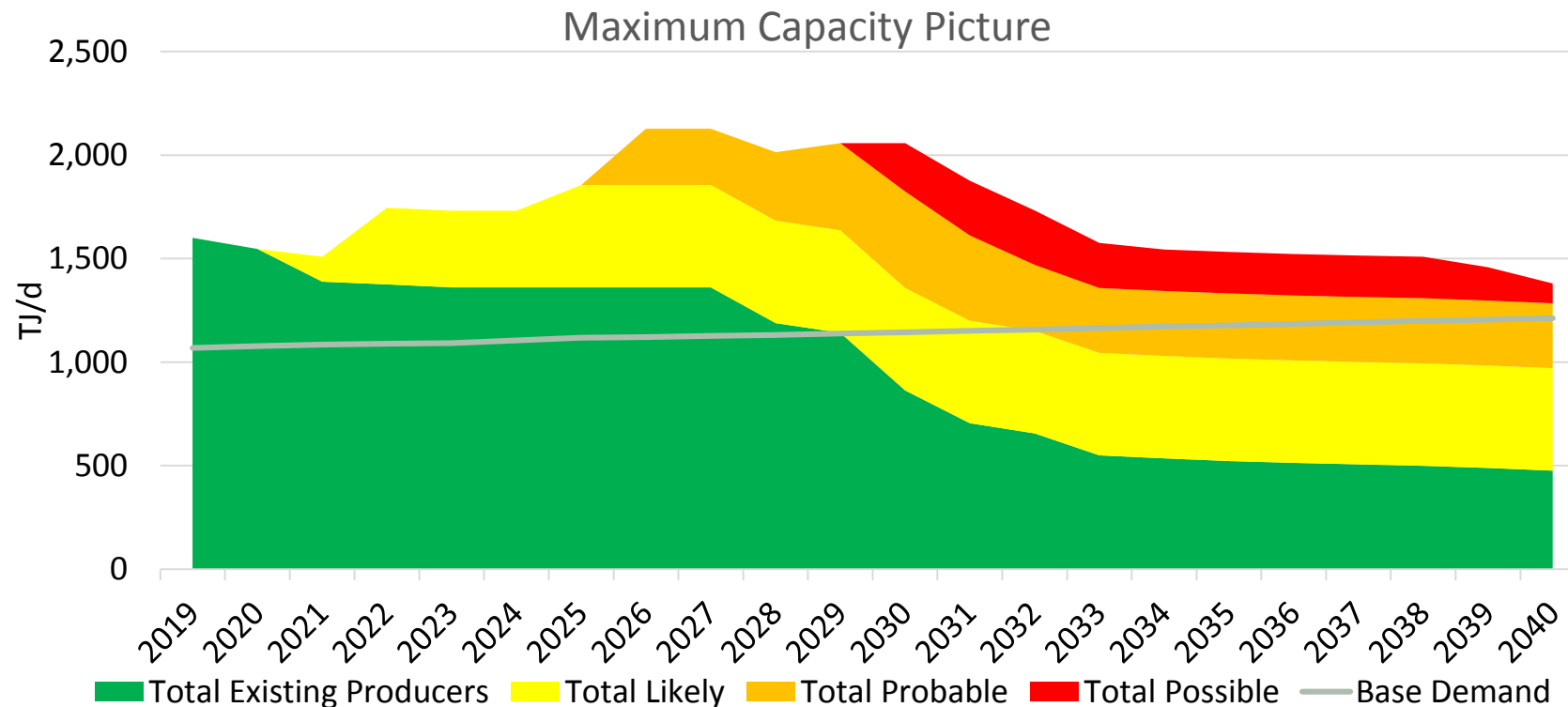
We pride ourselves on being a full-service firm with many years of practical experience in both conventional and unconventional petroleum resources. Our staff are some of the most experienced and talented in the industry and we quickly identify the key issues and opportunities and provide a qualified perspective that gives real answers and long-term solutions.



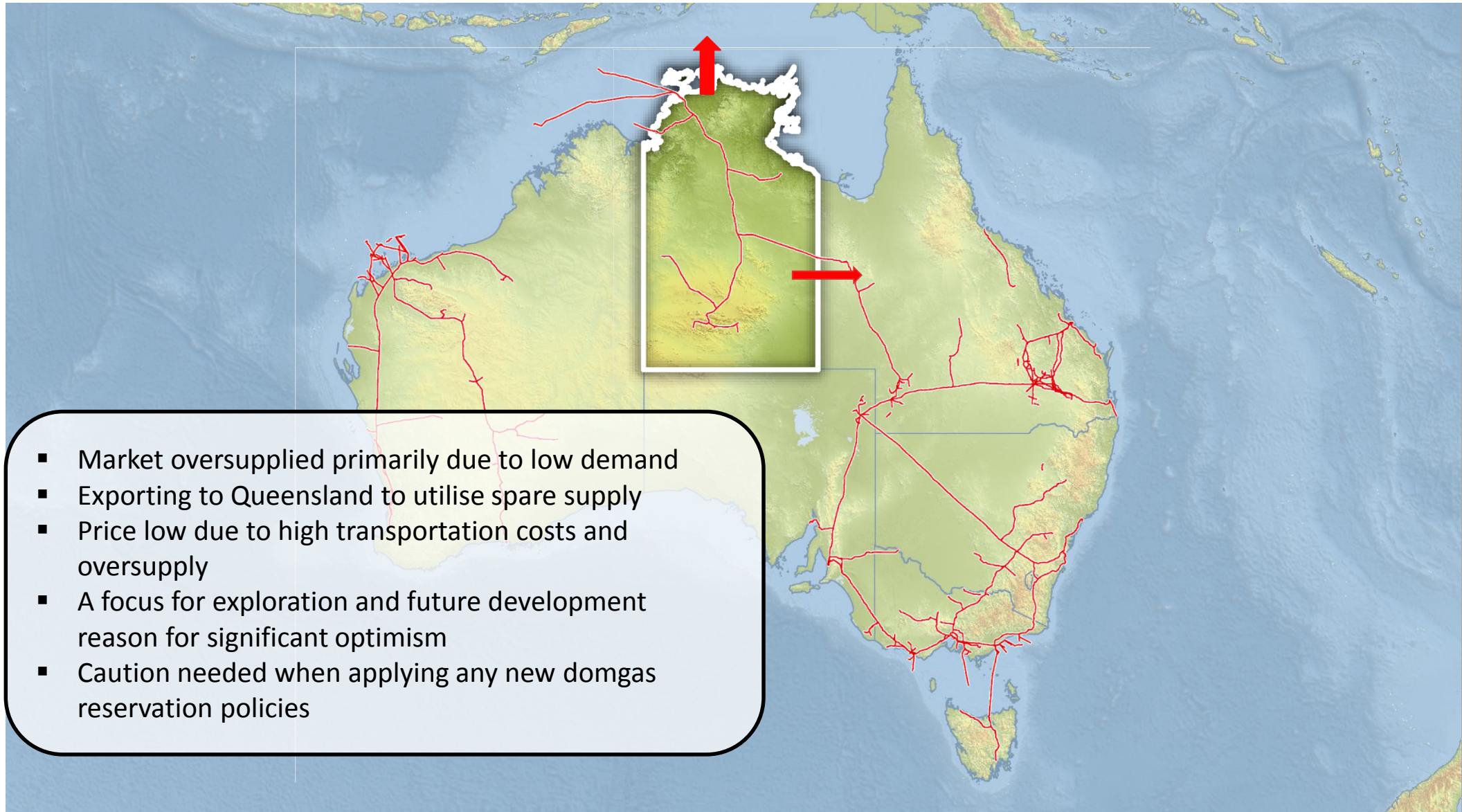


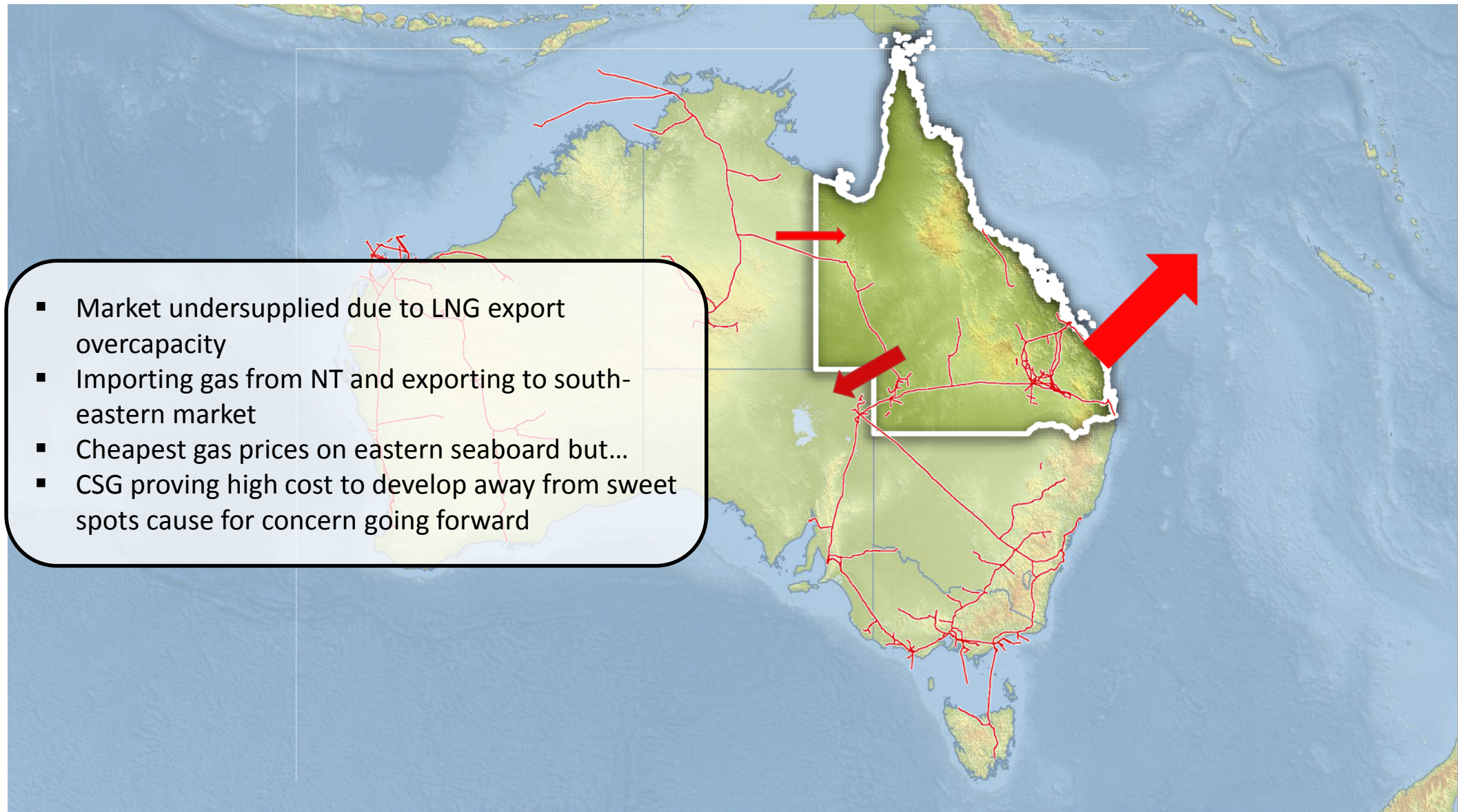
## Maximum supply capacity – Existing suppliers and Projects

- Assuming all of the identified projects proceed and supply the existing domgas base demand forecast there is excess supply capacity out to beyond 2040, price likely to remain low for foreseeable future.
- New domgas demand, or export solutions for the prospective projects, are likely to be stimulated in 2021/22 and again in 2025/26 to soak up excess supply capacity.
- The NWS LNG facilities will begin to be available for new gas supplies from ~2021 with capacity rising quickly.



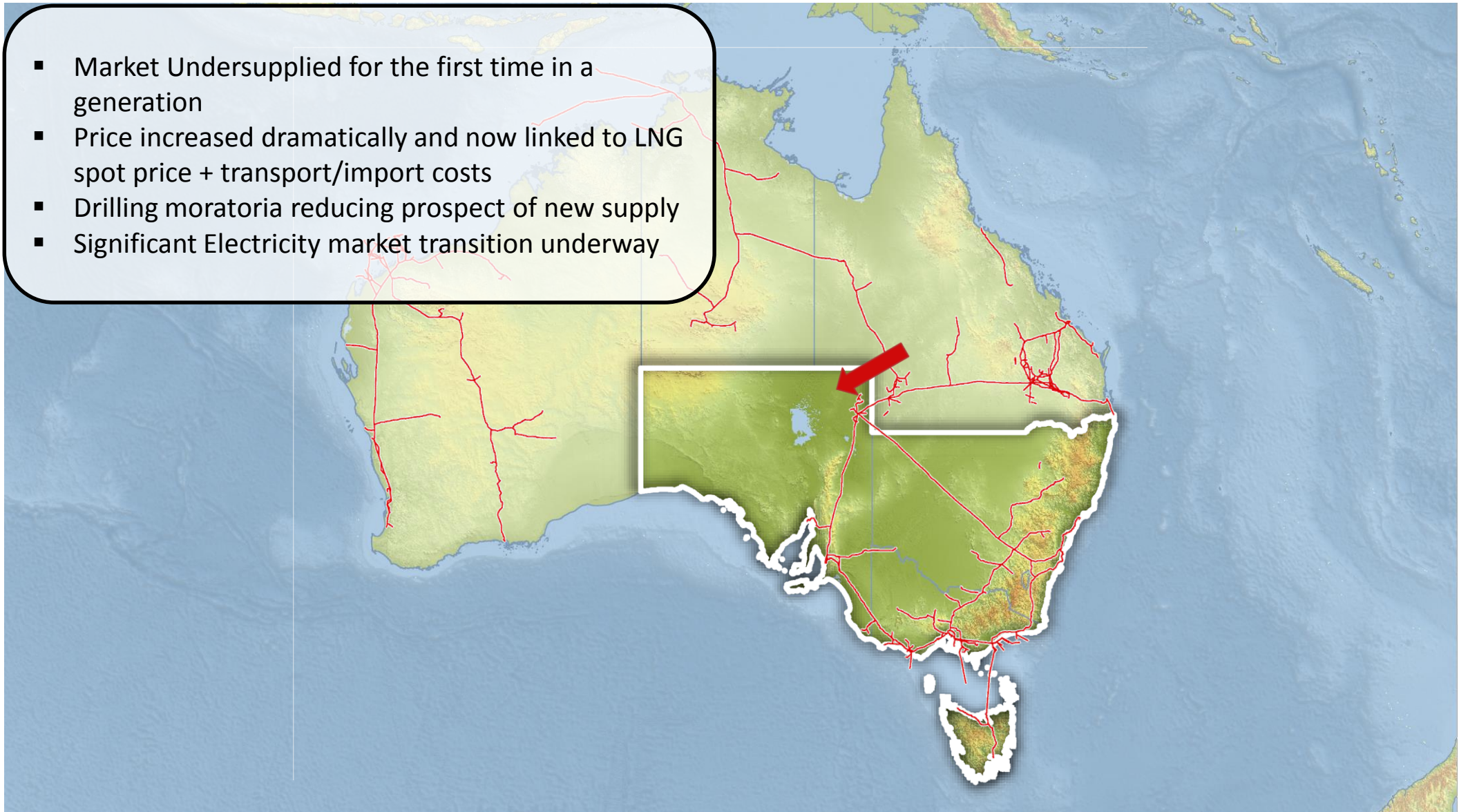








- Market Undersupplied for the first time in a generation
- Price increased dramatically and now linked to LNG spot price + transport/import costs
- Drilling moratoria reducing prospect of new supply
- Significant Electricity market transition underway

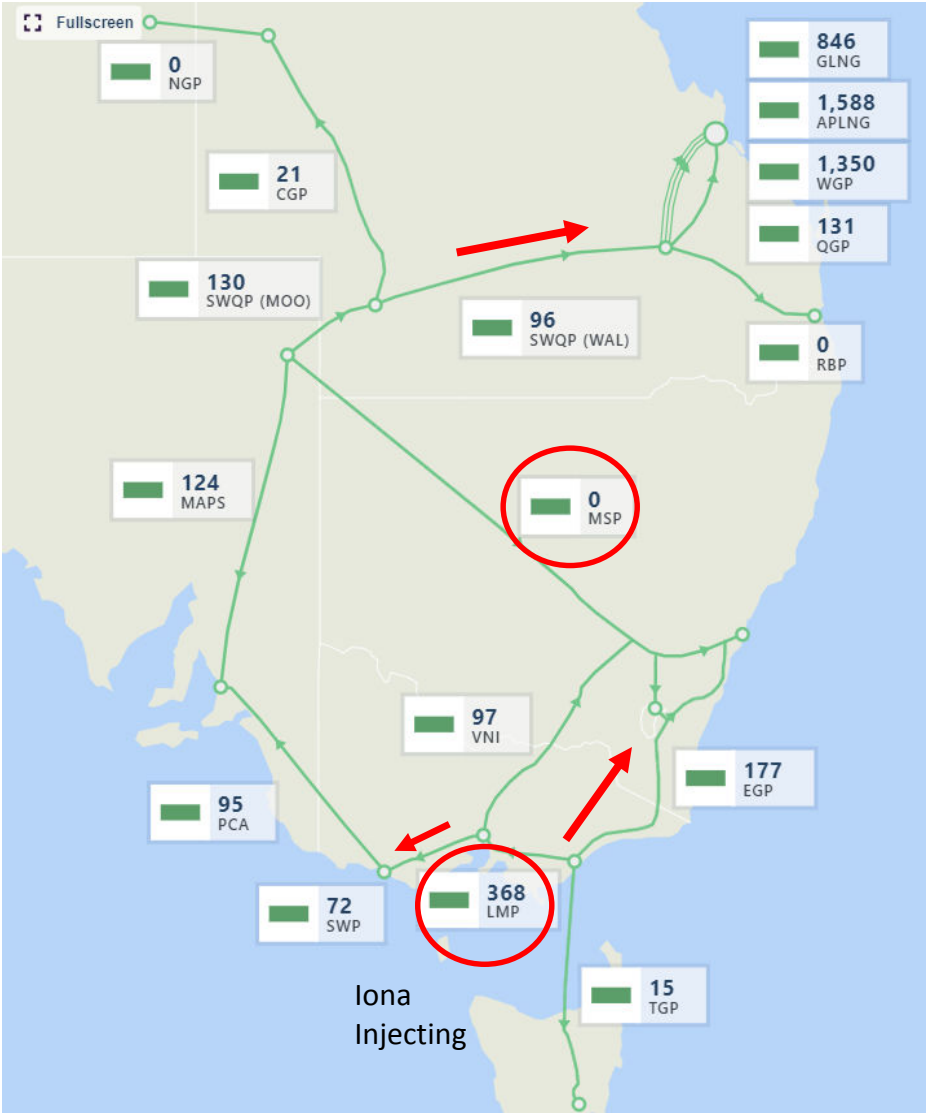




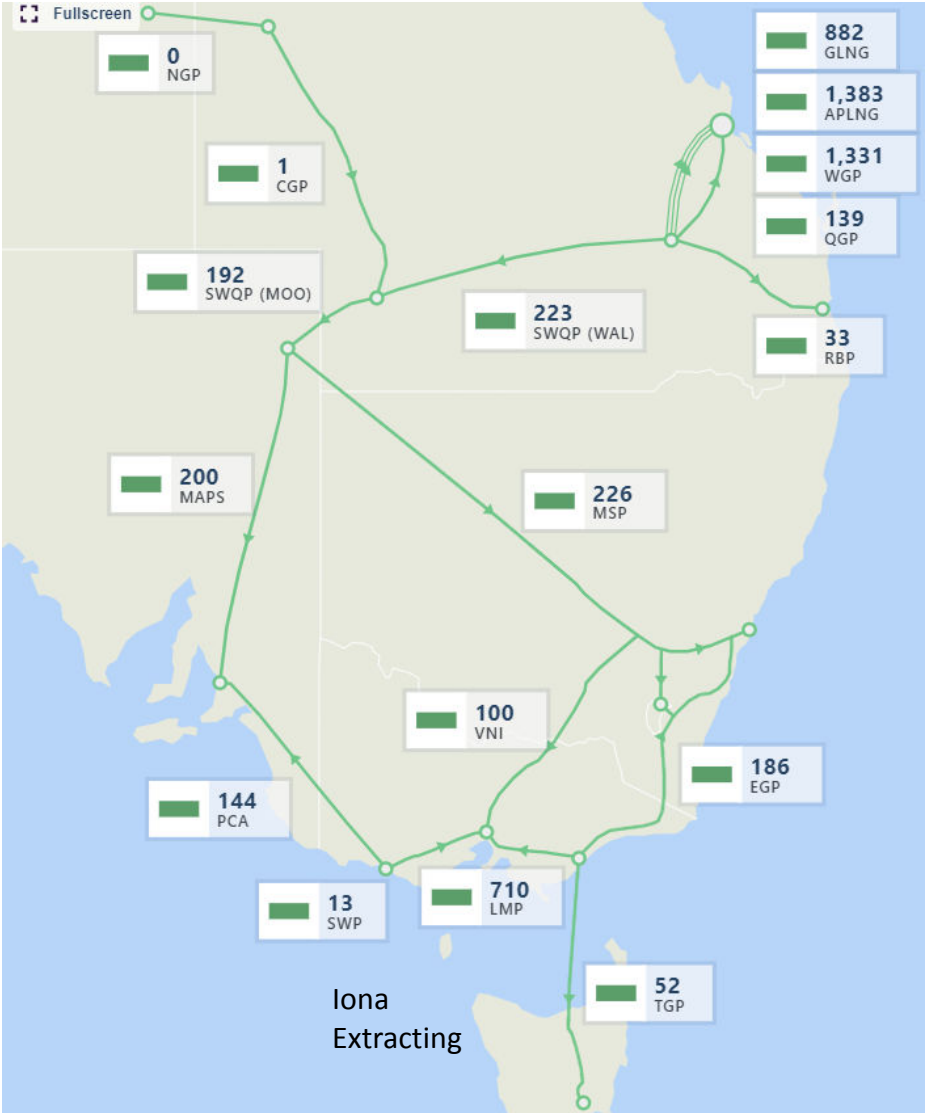
# East Coast Gas Market Trend



Low Domestic Demand Day



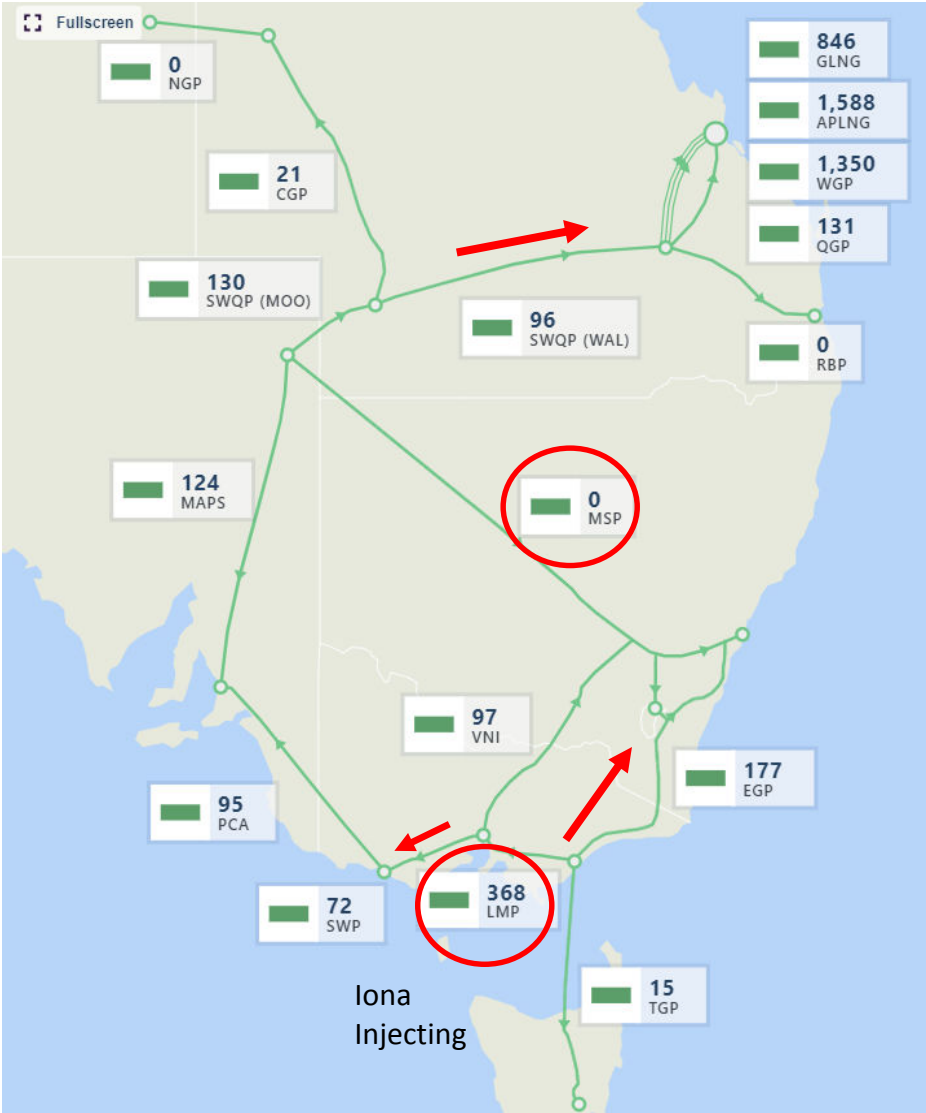
High Domestic Demand Day



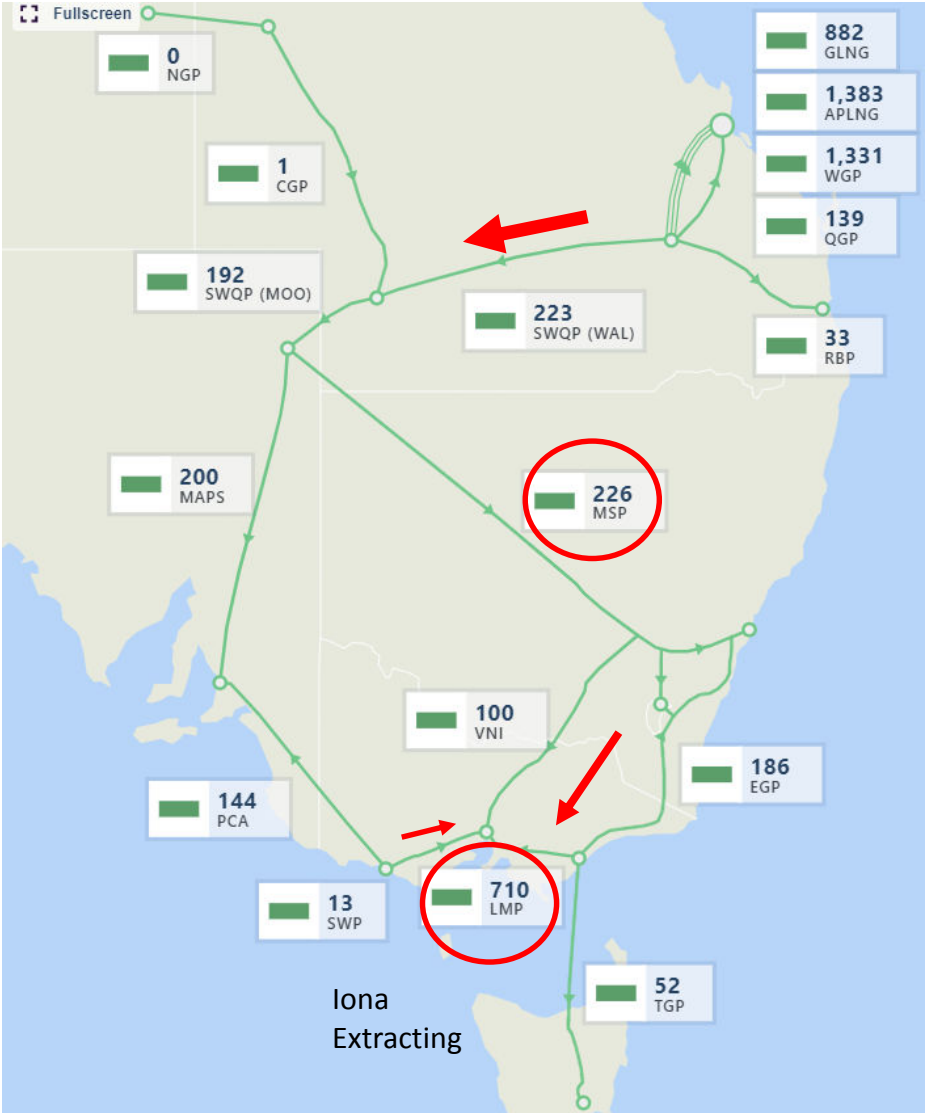
# East Coast Gas Market Trend



Low Domestic Demand Day



High Domestic Demand Day

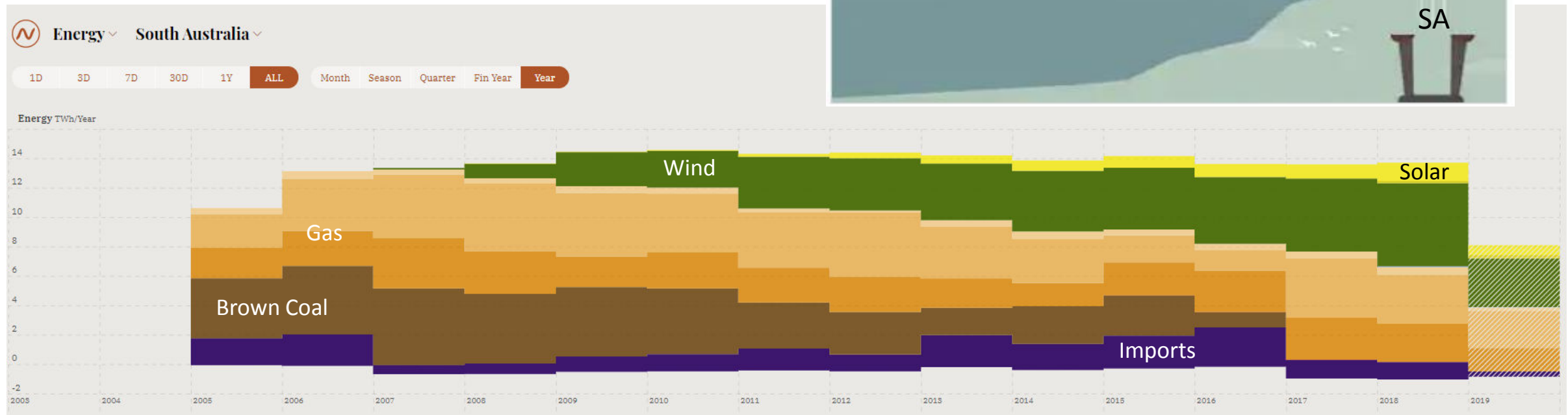




# Electricity Generation (GPG) Trends

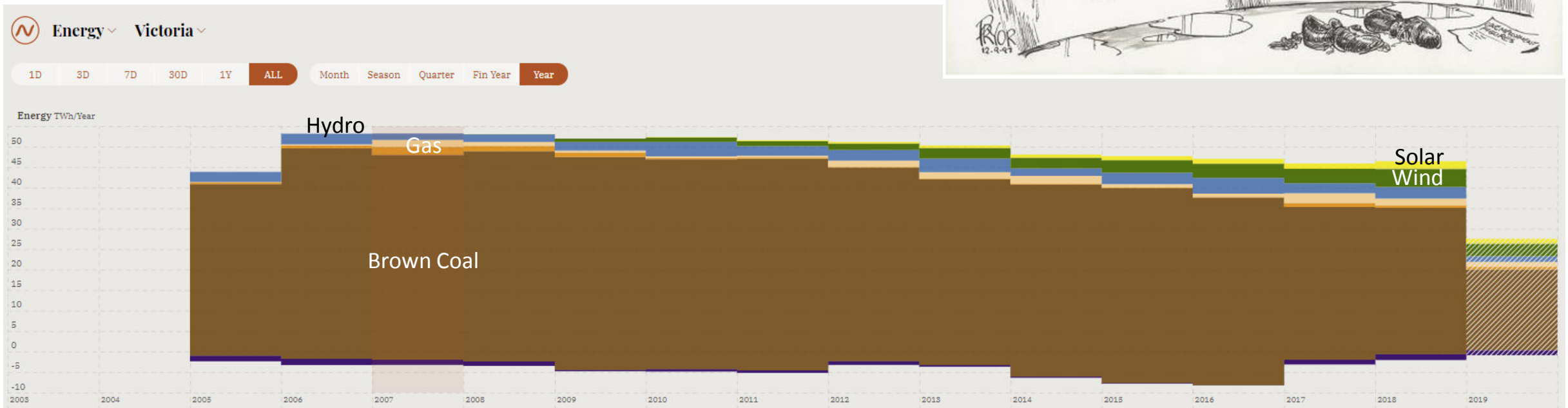
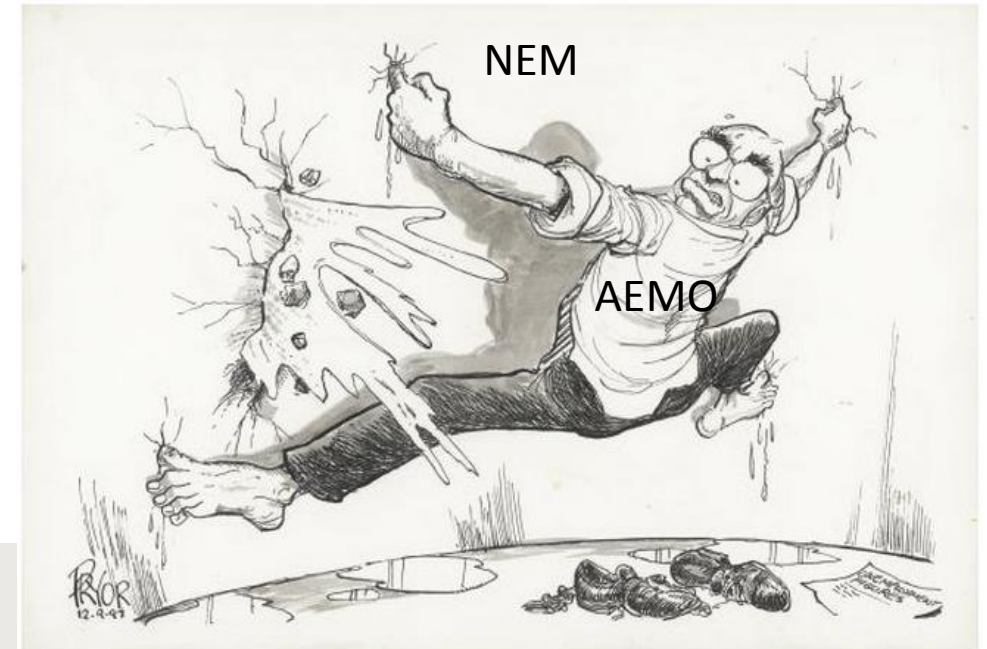
- Increasing wind (and solar) electricity capacity will crowd out base load suppliers, eventually coal fired generation will be removed from the market leaving GPG as the major generator.
- Last 12 months saw GPG use approx. 100 PJ of gas or avg 300 TJ/d, 60% in South Australia.

## Electricity Generation – The blind leading the blind



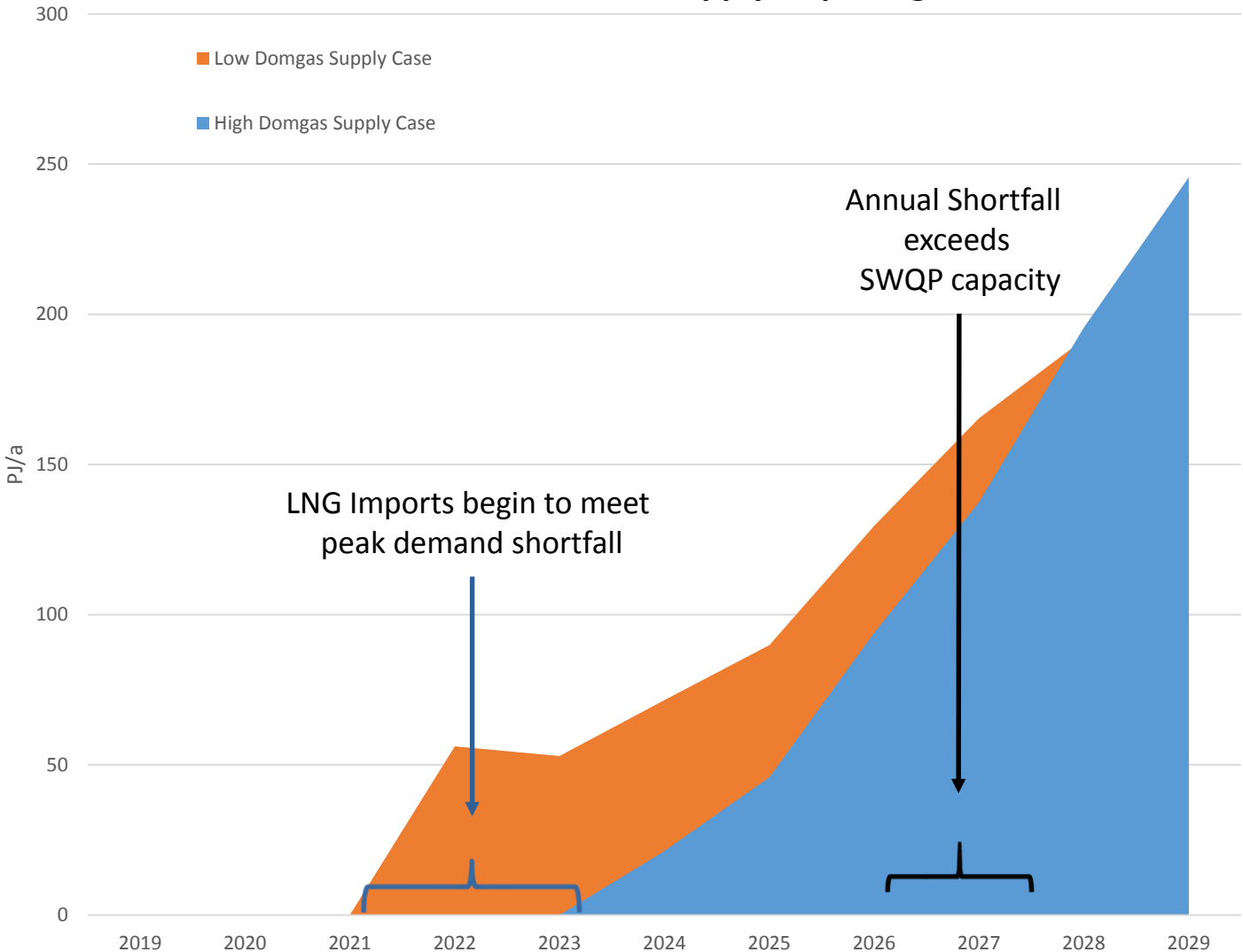
# Electricity Generation (GPG) Trends

- Victoria set to increase wind power capacity dramatically (increase of over 80% in next 12 months alone).
- Already tight gas market in winter likely to see peak demand of gas for GPG to grow strongly from current peak of 200-400 TJ/d to more than 600 TJ/d. Peak days to occur more often as coal generation declines in response to growth of wind and solar.





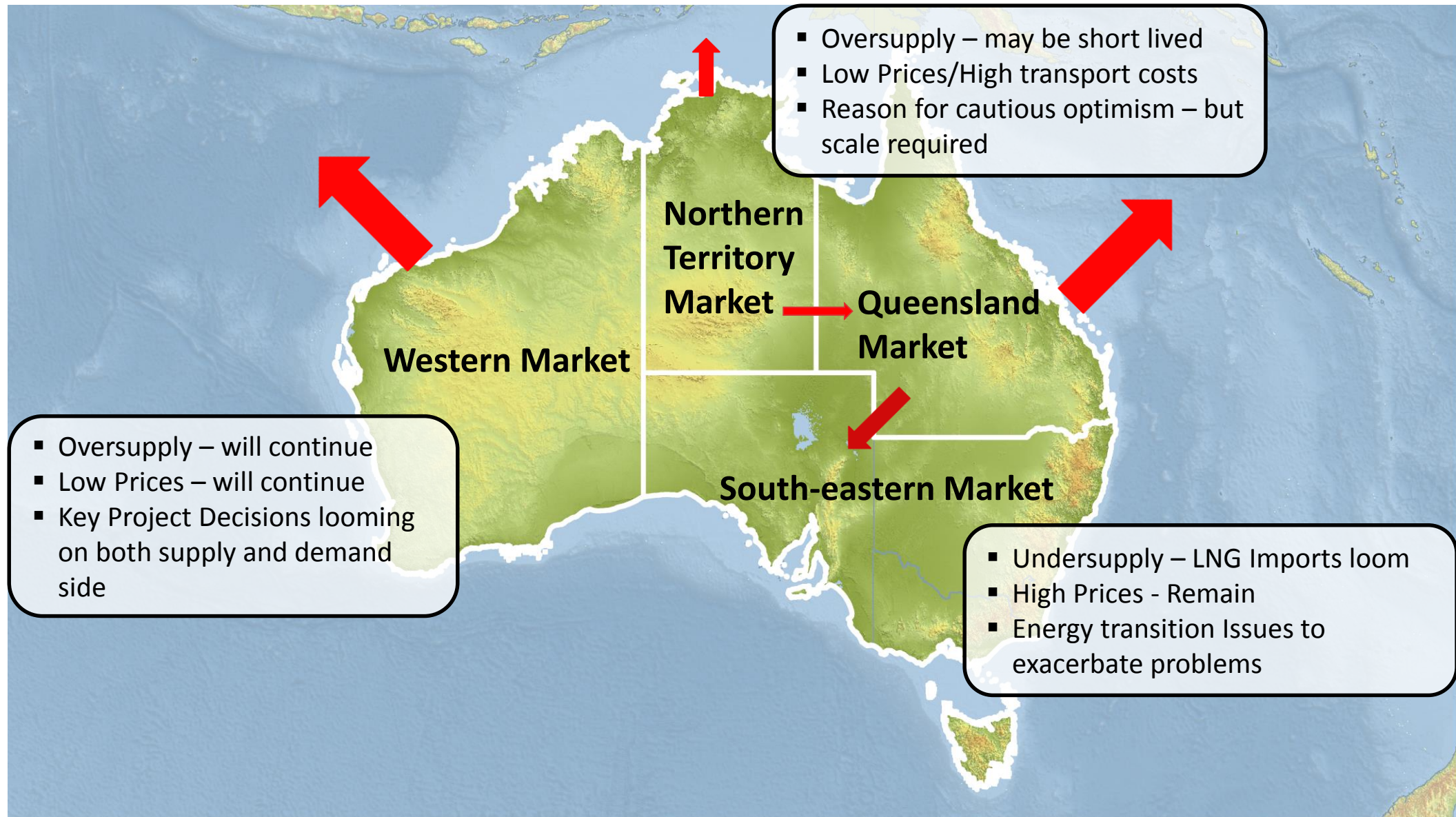
Southern States Supply Gap Range



Gas Market



# Australia's Four Gas Markets – Conclusions





# RISC Eastern States gas market study and unconventional play atlas



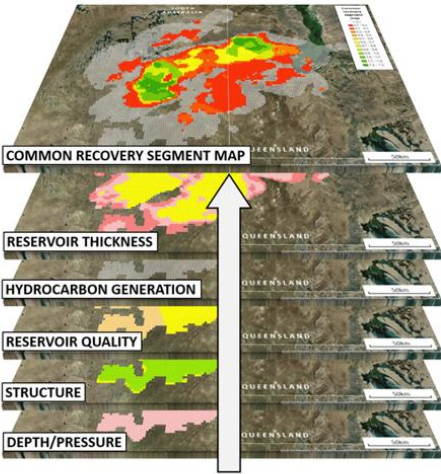
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## Australian Eastern States gas market study and unconventional play atlas

RISC has developed a comprehensive Australian Eastern States gas market study. The study is based on the 2P reserves positions for domestic gas producers paired with a range of gas demand forecasts to identify probable supply gaps on the East Coast over the next 10 years. A market response to the high gas pricing on the East Coast in the form of new developments is already underway.

At what gas price does it make sense to start developing unconventional resources in the Eastern states?

Resource play quantification for all of the Eastern States recognised potential unconventional plays

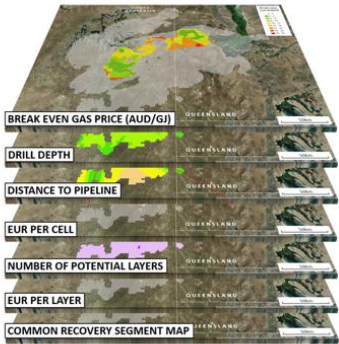


The study has analysed all of the potential sources of unconventional gas to fill the East Coast market gap and determines likely gas supply rates, development schedules and breakeven supply costs for each of the major demand centres.

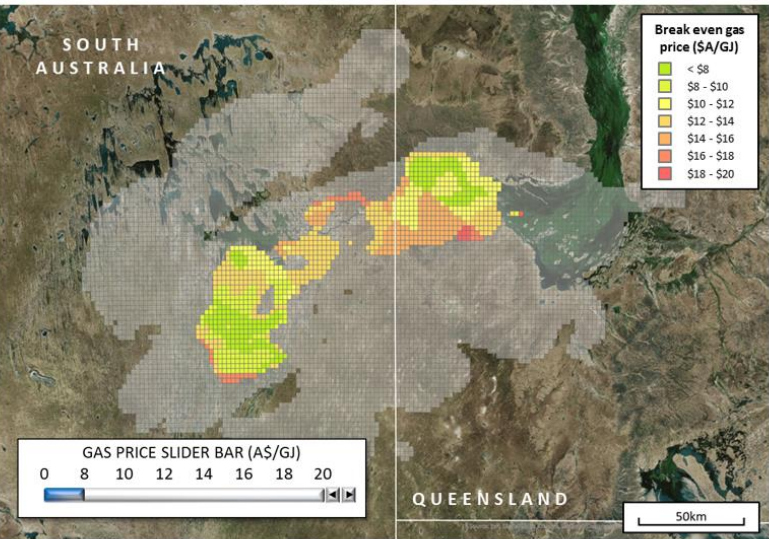
The study illustrates the required gas prices to drive unconventional gas development in Eastern Australia, the subsequent scale of new unconventional gas supplies to the forecast gaps in the market and describes how those developments can reverse the trend of rising prices over time.



Resource development break-even analysis



The gas price slider bar provides interactive break even development maps for all of the recognised unconventional plays in Eastern Australia



A quantitative analysis of the unconventional gas potential of Eastern Australian basins has been undertaken using a spatial analysis methodology of play fairway sweet-spot mapping. Play components considered important for the presence and recovery of unconventional gas were mapped across the plays of interest. Modelled horizontal well type curves and development plans from North American analogues for unconventional gas production have been used to quantify the sweet-spot mapping using a methodology RISC has developed called common recovery segment mapping.

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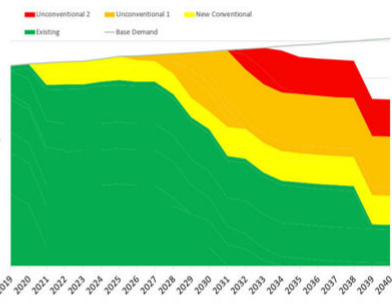


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All major gas resource plays identified in Eastern Australia have been quantified

BASIN	PLAY / RESERVOIR	PLAY TYPE
COOPER	TOOLACHEE	SHAPE GAS
COOPER	DARLINGIE	TIGHT GAS
COOPER	ROSENEATH	SHAPE GAS
COOPER	EPILION	TIGHT GAS
COOPER	MURTEREE	SHAPE GAS
COOPER	PATCHAWARRA	TIGHT GAS
EROMANGA	WINTON	TIGHT GAS
BOWEN	BANDANNA-BARALABA	COAL SEAM GAS
BOWEN	TINWON	TIGHT GAS
BOWEN	REIDS DOME BEDS	TIGHT GAS
SURAT	WALLOON	COAL SEAM GAS
SURAT	PRECIPICE	TIGHT GAS
SURAT	SPRINGBOK	TIGHT GAS
GALILEE	ARAMAC	COAL SEAM GAS
BEETALOO	VELKERRI	SHAPE GAS

Eastern Australia gas supply forecast



Eastern Australia gas market model



A quantitative understanding of unconventional resource potential at different gas price scenarios allows us to understand how potential unconventional resource developments could contribute towards the Eastern Australia energy supply mix

Deliverables

The Eastern Australia unconventional play atlas is provided in both hyperlinked and interactive .pdf report and as an optional ArcGIS project. The Eastern Australia gas market study is provided as a .pdf and an optional excel model

Contact



**Ian Cockerill**  
Head of Geoscience  
ian.cockerill@riscadvisory.com



**Joe Collins**  
Principal Development Engineer  
joe.collins@riscadvisory.com

Contact



**Ian Cockerill**  
Head of Geoscience  
ian.cockerill@riscadvisory.com



**Joe Collins**  
Principal Development Engineer  
joe.collins@riscadvisory.com



[www.riscadvisory.com](http://www.riscadvisory.com)

## Perth

Level 2  
1138 Hay Street  
WEST PERTH WA 6005  
P. +61 8 9420 6660  
F. +61 8 9420 6690  
E. [admin@riscadvisory.com](mailto:admin@riscadvisory.com)

## Brisbane

Level 10  
239 George Street  
BRISBANE QLD 4000  
P. +61 7 3025 3397  
F. +61 7 3188 5777  
E. [admin@riscadvisory.com](mailto:admin@riscadvisory.com)

## London

4th floor Rex House  
10 Regent Street  
LONDON UK SW1Y 4PE  
P. +44 203 356 2960  
F. +44 203 356 2701  
E. [admin@riscadvisory.com](mailto:admin@riscadvisory.com)

## Dubai

Suite 503, Shangri La Offices  
Sheikh Zayed Road  
DUBAI UAE  
P. +971 4 401 9875  
F. +61 8 9420 6690  
E. [admin@riscadvisory.com](mailto:admin@riscadvisory.com)

## South East Asia

Jakarta  
Indonesia  
P. +61 8 9420 6660  
F. +61 8 9420 6690  
E. [admin@riscadvisory.com](mailto:admin@riscadvisory.com)