



New pipeline developments

Linking Australia's gas markets for improved energy security

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**SEAAOC, Darwin
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About APA Group

APA is Australia's largest gas infrastructure business

APA is an integrated operating business with direct management and operational control over its assets and investments

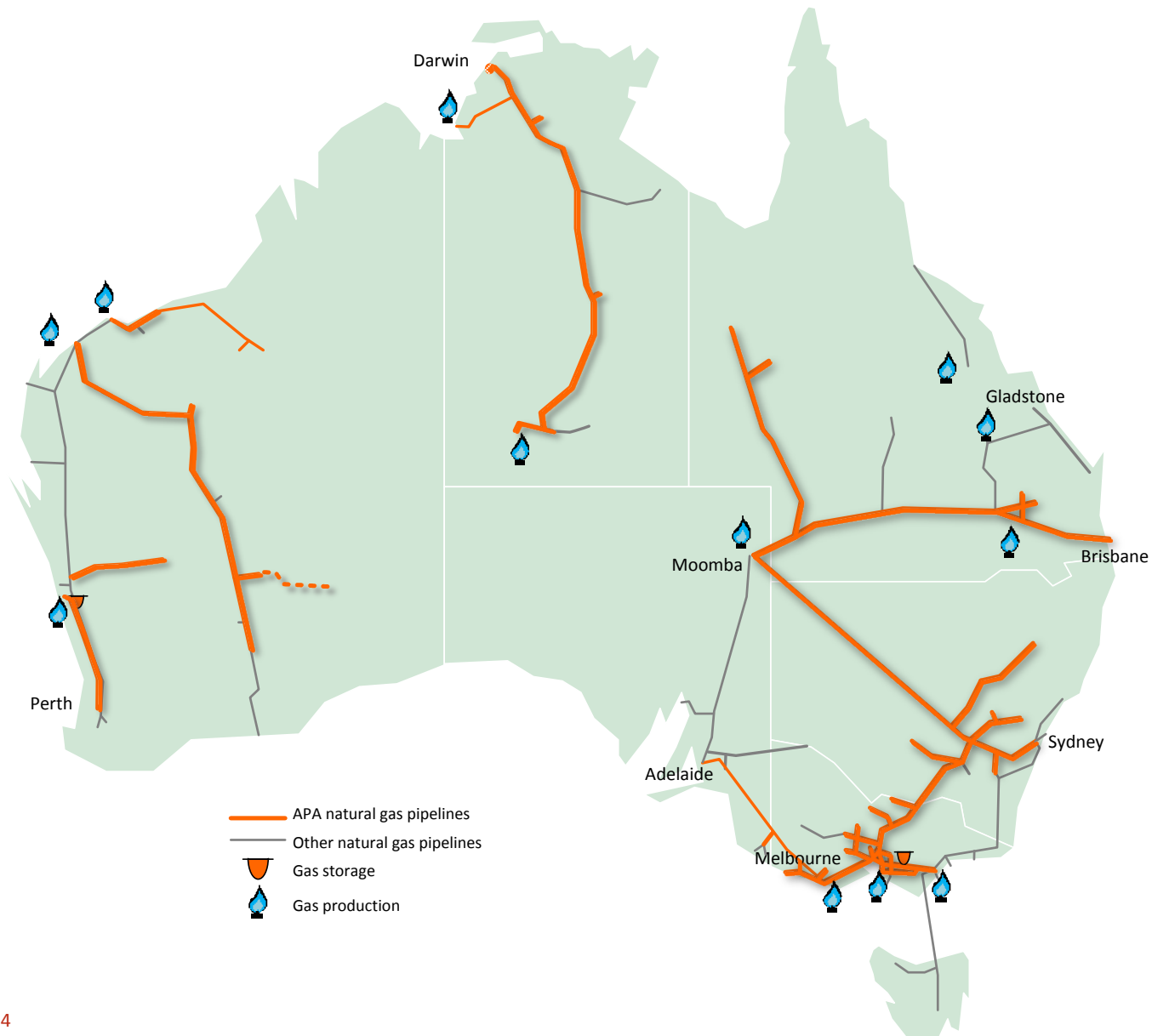
Core business areas

- **Gas transmission pipelines and storage**
 - Owning and operating two thirds of Australia's onshore pipelines
 - Interconnected pipeline networks
 - Transporting approximately half the gas used domestically
- **Gas distribution networks**
 - Operating approximately a third of the nation's gas distribution networks
- **Other related energy infrastructure**
 - APA has developed and acquired complementary energy infrastructure, including gas and wind electricity generation, gas processing and electricity transmission

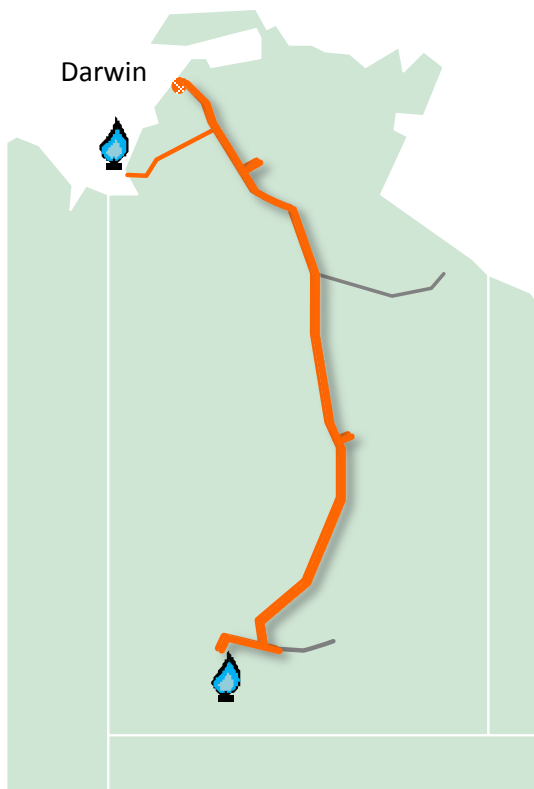
APA (August 2014)

Market capitalisation	A\$6.4 billion
	S&P/ASX 50
	MSCI All World Index; FTSE All World Index
Assets owned/ operated	Over \$12 billion
	Gas transmission
	14,100 km transmission pipelines
	Underground and LNG gas storage
	Gas distribution
	27,100 km gas network pipelines
	1.3 million gas consumers
	Other energy infrastructure
	430 MW power generation ⁽¹⁾
	239 km HV electricity transmission
	Gas processing plants
Employees	More than 1,600
Operator	Operator of APA's assets and investments

APA – Australia's largest gas pipeline owner



APA in the Northern Territory and east coast

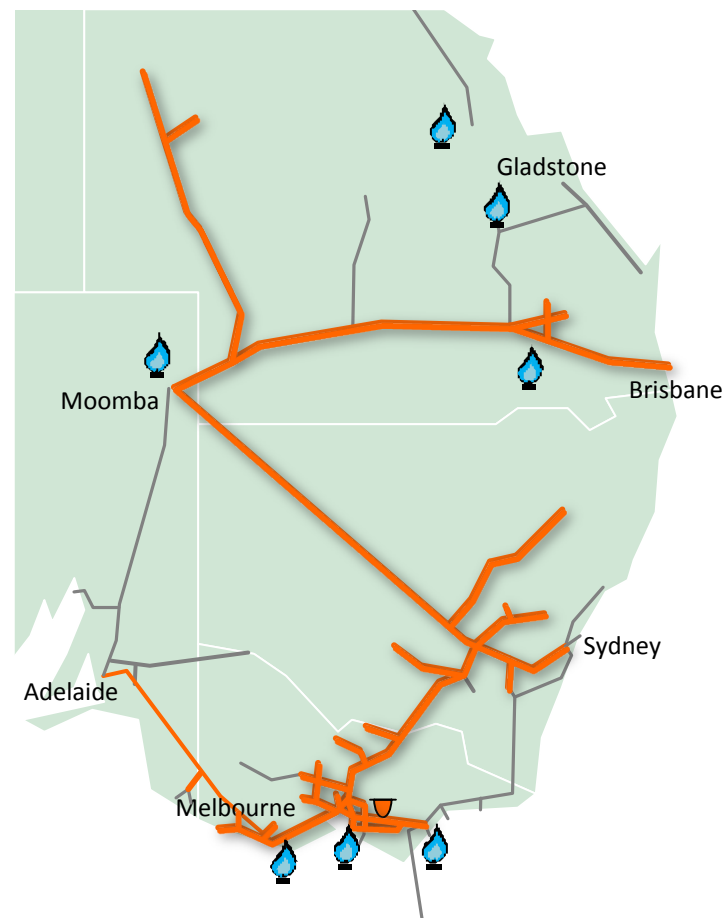


Northern Territory

- 2,000 km gas pipelines
- Long term presence in the Northern Territory – since 1980's with NT Gas until 2011

East coast grid

- > 7,000 km across 5 states and territories
- Configuring pipelines to operate as single network system



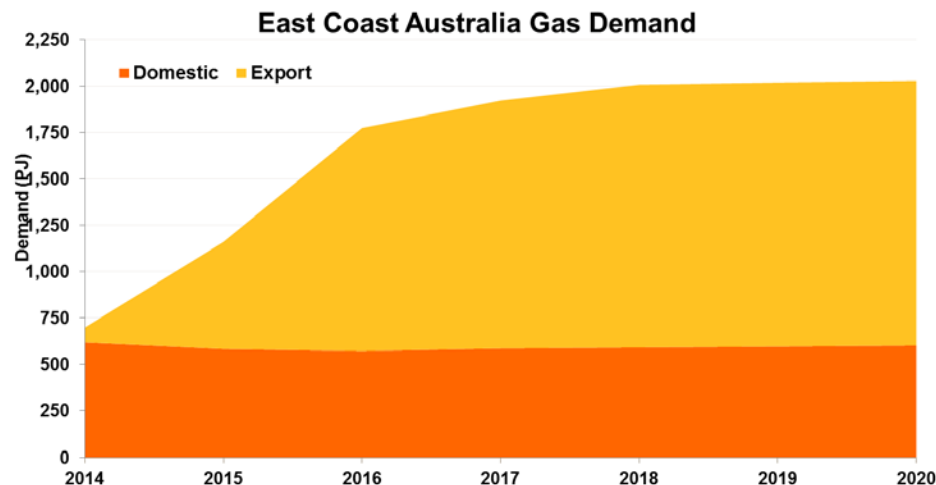
NT link background



- Strategic initiative to connect NT to the East Coast Gas Grid
 - Flexible energy supply across the system, regardless of input/exit points

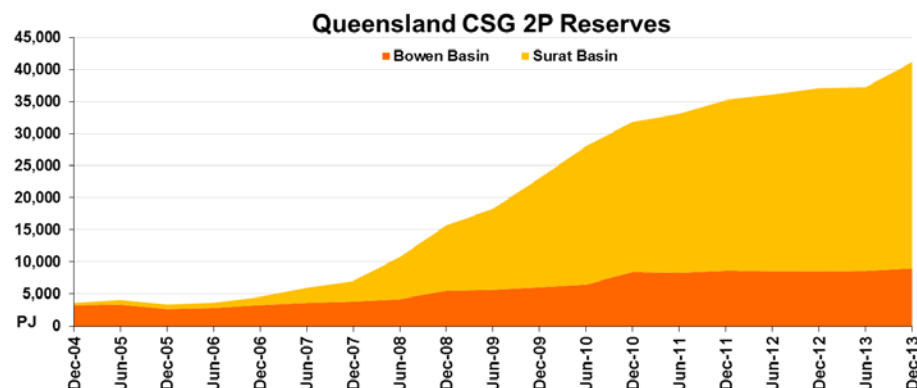
- Announced feasibility study for NT Link project and commitment of \$2 million (Feb 2014)
 - Assessing various connection options, including environmental considerations and cost estimates, to determine the most efficient and commercially viable link

East coast gas market – supply challenges

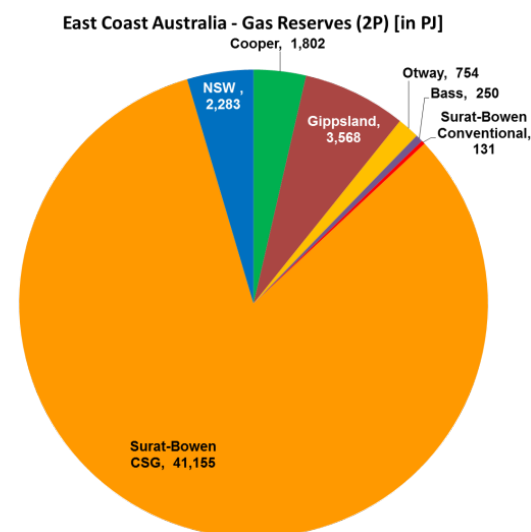


Source: AEMO Gas Statement of Opportunities Update, May 2014

- More than tripling of east coast demand due to LNG exports
- Supply sufficient for east coast demand for ~ 20 years
- BUT does not allow for any increase in demand, or any decline in reserves, or any demand beyond 20 years

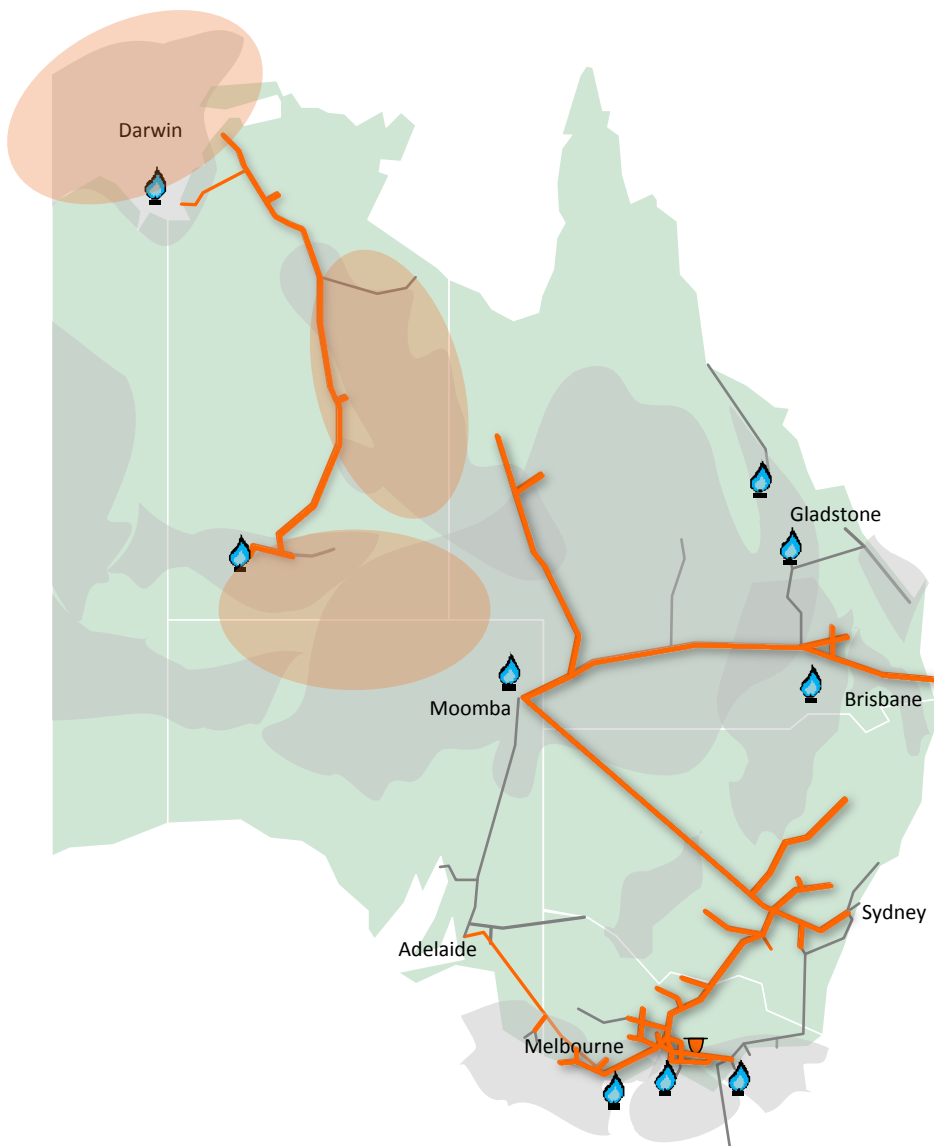


Source: Queensland Department of Natural Resources and Mines, Coal Seam Gas Reserves, update 1 July 2014



Surat-Bowen CSG reserves
= 82.4% of East Coast 2P reserves

Northern Territory gas resource



- >200 TCF⁽¹⁾ of gas resources
- 3 primary potential supply zones:

Offshore NT

- Producing assets and staged developments in place
- ~60 TCF of identified reserves

East NT

- Unconventional gas under exploration
- 5+ years from full development

South NT

- Small volumes of producing assets and unconventional gas
- 5+ years from full development

(1) NT Government media release 19 February 2014. Potential reserves of approximately 240 TCF across 6 basins

1 TCF $\cong$ 1,000 PJ

NT Link Project Benefits



- Encourages exploration & production to meet growing demand
- Opens new markets & supply competition
- Seamless transport between Timor Sea, Bass Strait, Sydney and Gladstone
- Significant additional security of supply
 - East coast gas market growth (LNG exports)
 - Ongoing delays in development of New South Wales and Victorian CSG

Feasibility study update

Infrastructure

- Preliminary assessment of several possible pipeline routes
 - evaluating environmental considerations
 - determining whole of project construction cost estimates
 - route flyovers commenced (August 2014)
- Detailed engineering
 - 3 pipeline routes modelled, others being evaluated
 - infrastructure requirements in process of being defined

Commercial

- Determining minimum volume required for project to be viable
- Early stage discussions with large downstream users on East Coast
- Exploratory discussions with major upstream producers & juniors/explorers

Government

- Ongoing dialogue with government (Fed, State and Territory) & other stakeholders

Pipeline route options

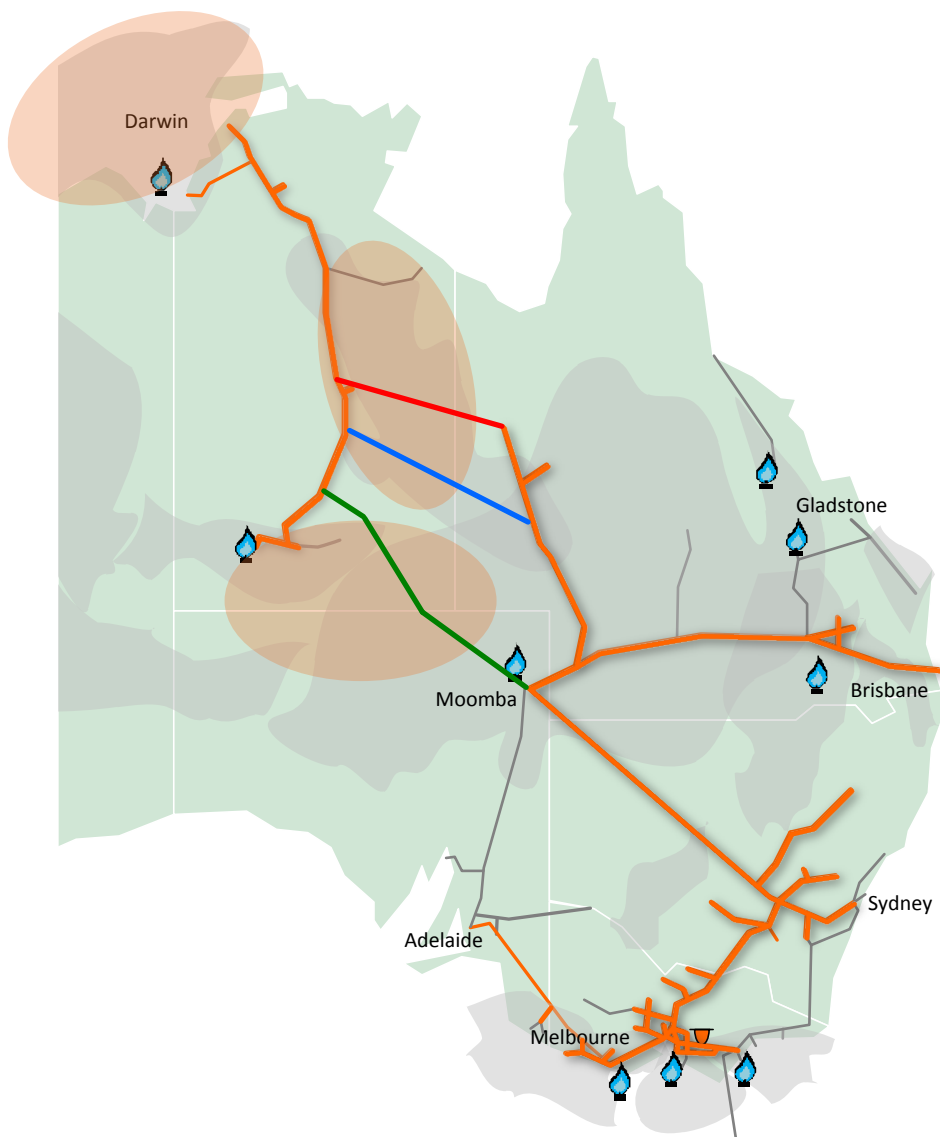


- A number of viable pipeline options ... each with its own challenges and opportunities

	Option A	Option B	Option C
Location	To Mt Isa	To Moomba	To CGP
Length	620 km	1,100 km	700 km
Water crossings	6	11	9
Flood ⁽¹⁾	25,000	352,000	117,000
Rock/ outcrops	35-45km	25-35km	50-60km

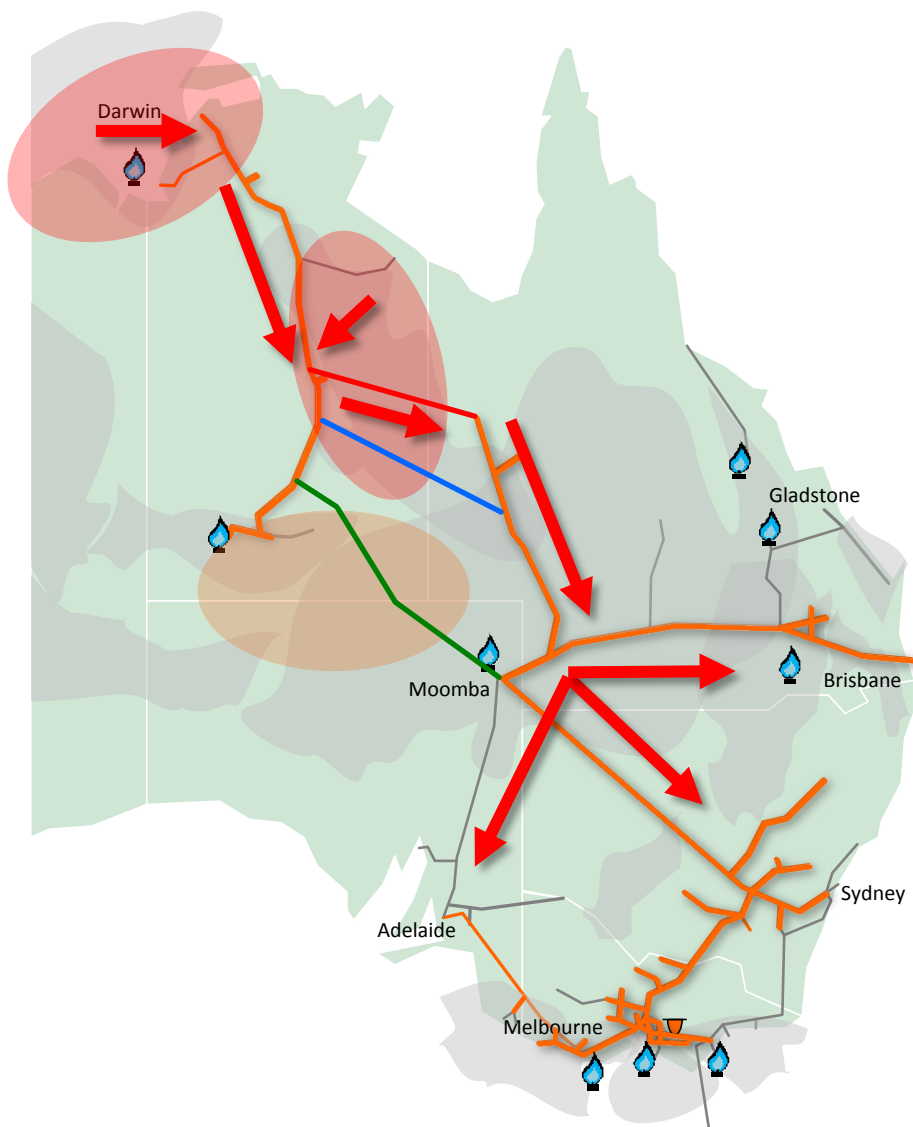
(1) Susceptibility to flooding – km² catchment upstream

Development considerations



- Focused on identifying the most efficient and commercially viable link with the east coast grid
- Working with upstream and downstream parties to determine the most likely gas flow path
- Gas delivered to the east coast grid can be seamlessly delivered to any major delivery point
- Potential for additional LNG trains in the Northern Territory is a risk to NT Link development

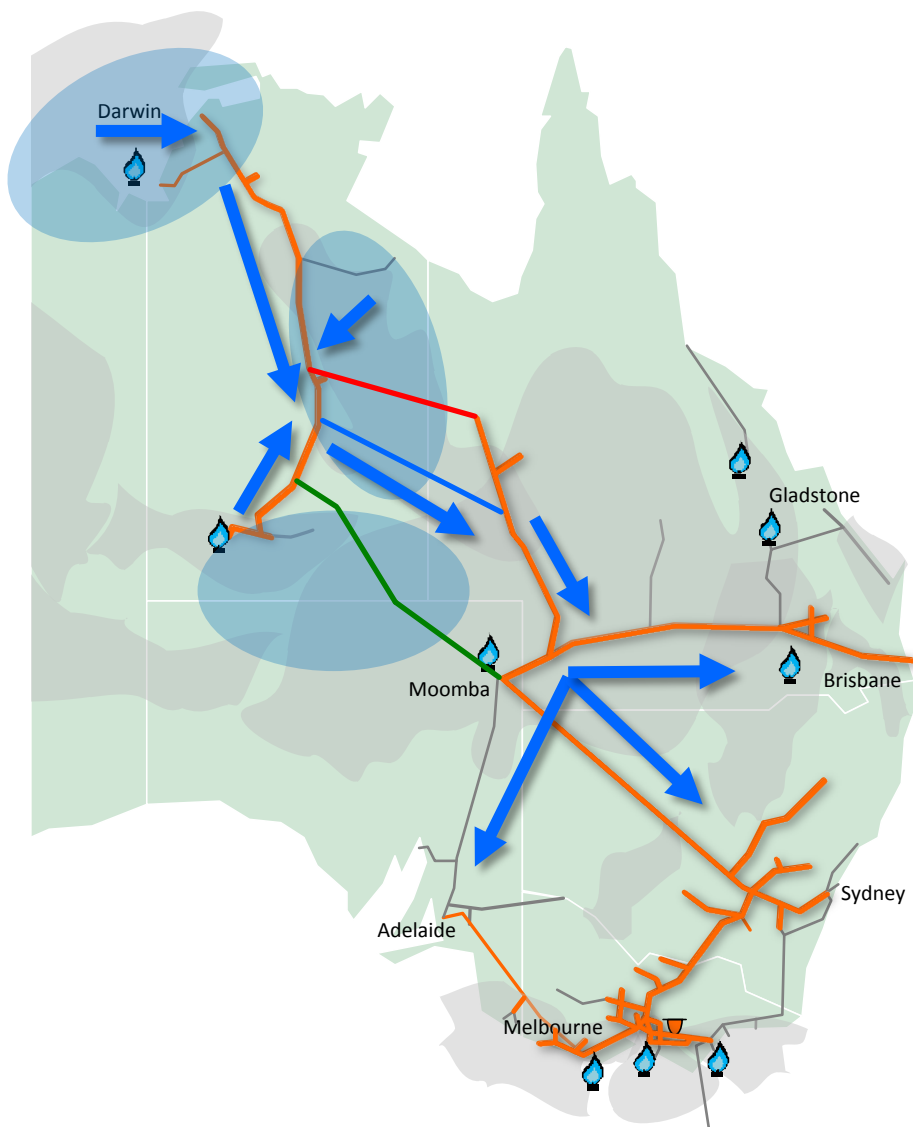
Development considerations



Potential pipeline option – RED

- Key gas sources – offshore and eastern NT

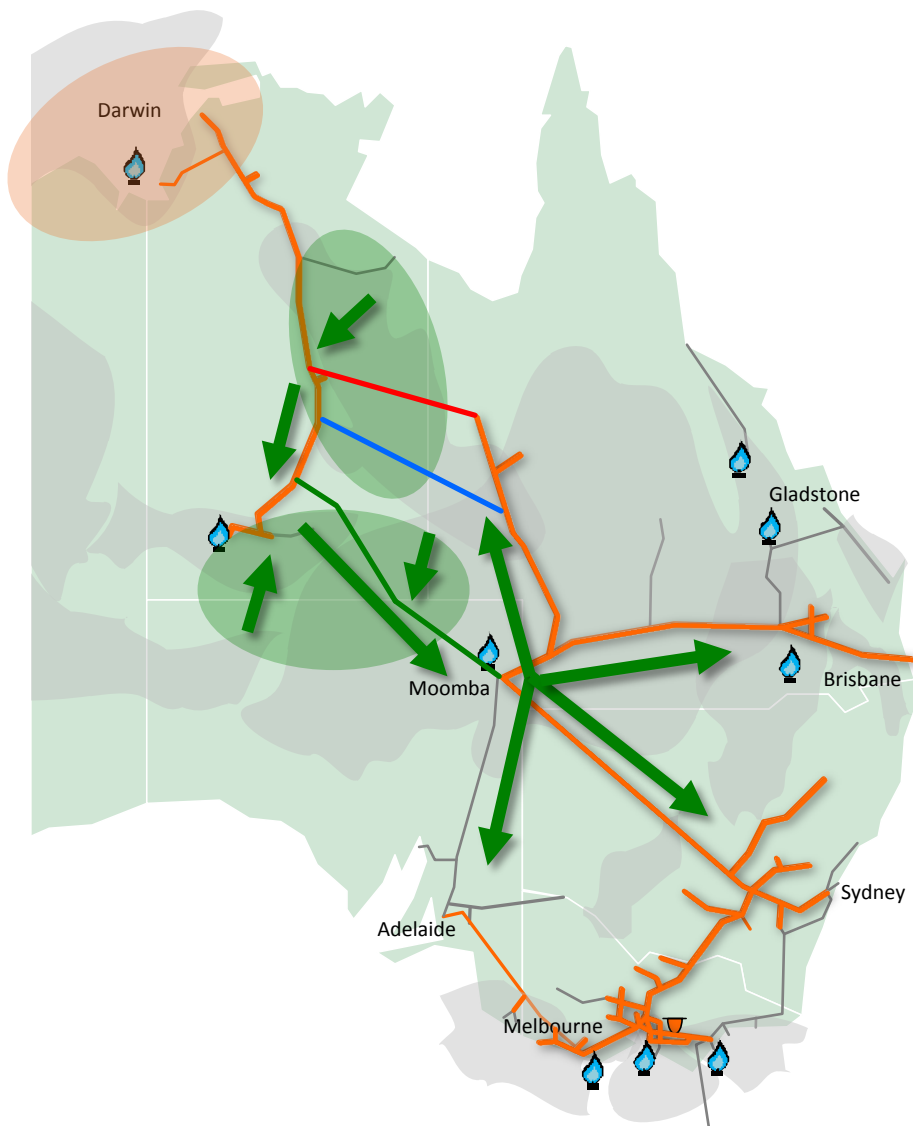
Development considerations



Potential pipeline option – BLUE

- Gas sourced from all three locations (offshore, eastern NT and southern NT)

Development considerations



Potential pipeline option – GREEN

- Key gas sources – eastern NT and southern NT
- Pipeline travels through existing producing fields

Conclusion

- Strategic initiative providing flexible energy supply between Timor Sea, Bass Strait, Sydney and Gladstone
- Feasibility study well underway – expected to be completed in FY2016
- Focus is to identify the most efficient and commercially viable link with the east coast grid
- Infrastructure sized to meet demand
- Working with upstream and downstream parties to best understand the likely gas path

APA's unique offering

- APA can deliver a whole of system approach, leveraging the network capability from the east coast
- APA has appropriate capability, expertise and resources to fully develop this project in conjunction with NT Government



Delivering Australia's Energy

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