



# EasternStar

## GAS

**RBS Morgans Unconventional Oil & Gas Day**

David Casey, Managing Director

3 May 2011





# Corporate Overview

*Solely focussed on Gunnedah Basin Coal Seam Gas Since 2006...*

## Prime, well-located CSG Resource

- 1520 PJ 2P reserves (ESG 65%), upgrades to come
- Access to two industrial ports for LNG export
- Proximate to large domestic energy market
- Primary focus Narrabri Gas Project (NGP) in PEL 238

## Financially robust













- ASX Top 200
- Net cash position: \$92 million
- Stable shareholder base

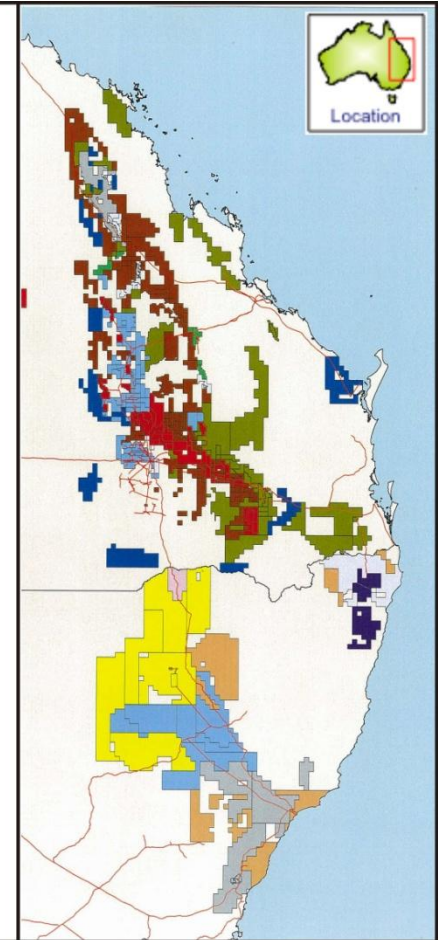
## Proven execution capability

- Management team with deep technical, commercial, financial and project execution experience
- Quality strategic partners

Market Cap. (29 April 2011)	\$779 million
Cash (31 Mar 2011)	\$92 million
Daily Volume (52 week average)	3.6 million

## CSG Operators

Eastern Star Gas	
Santos	
AGL	
Arrow Energy	
Apollo Gas	
Metgasco	
Molopo	
Orion Petroleum	
BG Group	
Australia Pacific	
Blue Energy	
Bow Energy	



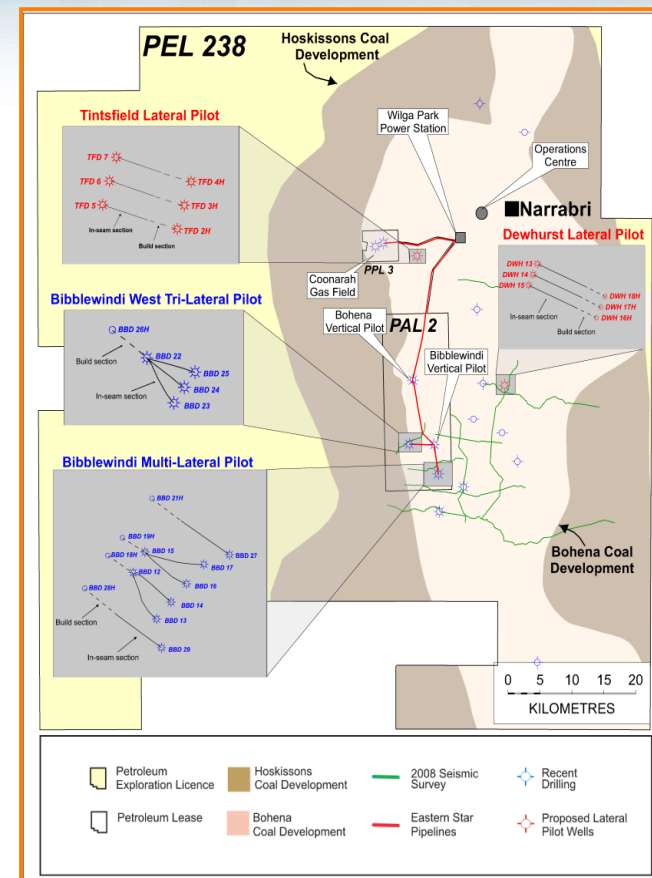
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Positioned to be NSW's leading producer of natural gas and LNG

# Demonstrated Extraction Technology

Overcoming the real-life technical challenges...

Pilot	Configuration	Commenced Operation	Observations
Bohena	3 vertical wells	1998 to 2006	Demonstrate commerciality but do not take advantage of unique architecture of target coals
Biblewindi 9-spot	9 vertical, fracture-stimulated wells	2006/7	
Biblewindi Multi-lateral	Bi-lateral wells with single-lateral shield wells	2009	All confirm suitability of lateral well design
Biblewindi West	Tri-lateral well set	2009	
Tintfield	Parallel lateral wells	2010/11	
Dewhurst	Parallel lateral wells	2010/11	



ESG has demonstrated the suitability of lateral drilling technology





# Field Development

*What makes the Narrabri Gas Project different...*

## Unique geology

- Deep seams (500m – 1100m) result in high gas contents
- High reserves per hectare – typically thick seams & up to five coal horizons
- Vertical fracturing yields high, directional permeability
- No impact on groundwater resource

## Completion technology defined

- High capital efficiency relative to vertical wells
- Lower surface impact
- No fracking required

## Chief landholder is NSW State Government

- Long-term land access secured

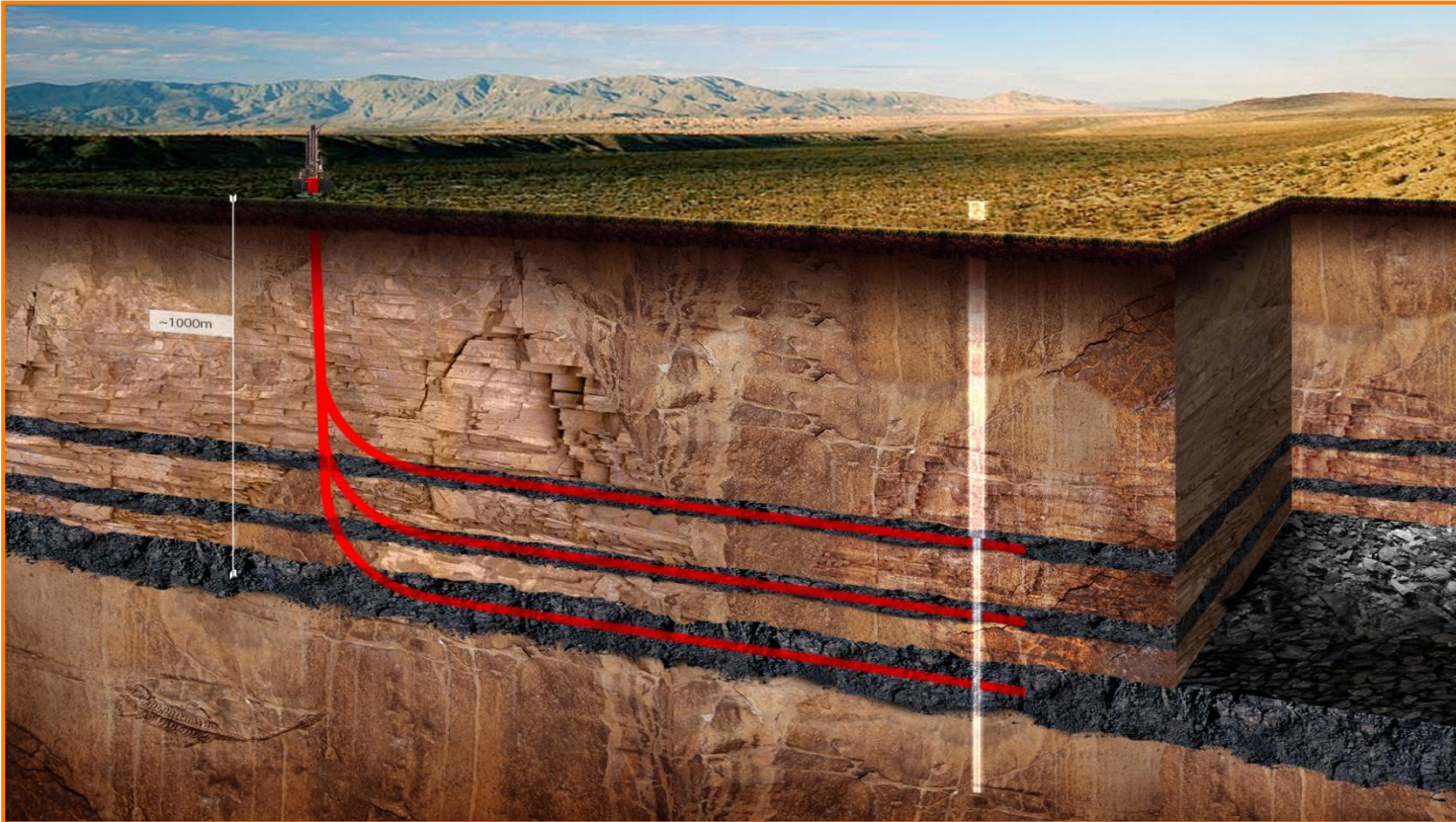


Unique characteristics make Narrabri Gas Project distinctive



# Stacked Laterals

*Further enhancing the returns generated...*



**To date, each pilot has targeted specific coal horizons.**

- None have targeted drilling into all key seams

**Horizontal wells can be drilled in multiple seams**

- Taps additional reserves and production at only incremental cost
- More reserves and production per well means land use further reduced
- To be tested in current drilling programme

Application of lateral drilling technology can be applied to multiple seams



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# The Road to FID...





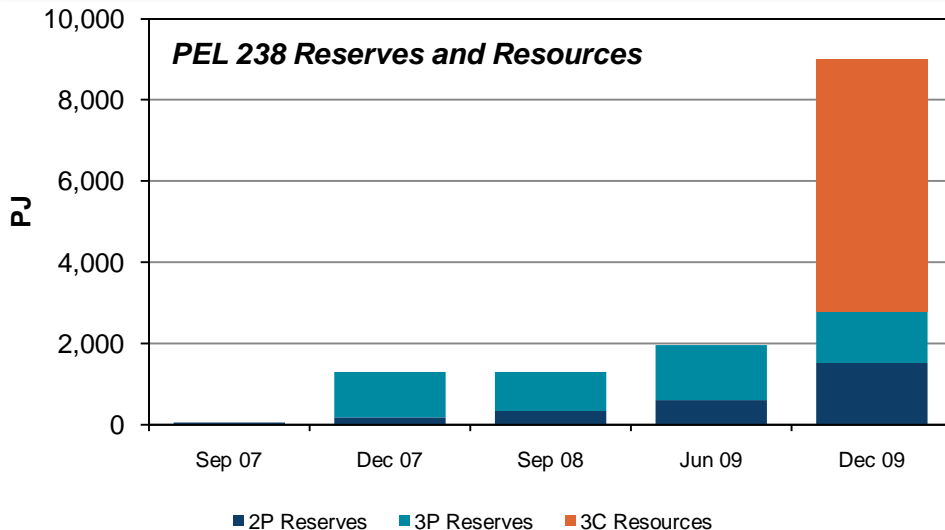
# Reserves – Large, Certified Reserve Base

## Current PEL 238 2P Reserves sufficient for:

- 1.5 Mtpa LNG export; or
- 2,000 MW domestic power plant @ 60% C.F.

## Reserves upgrade due

- Pending results from continued production of Tintfield pilot
  - Startup delayed to 1 April 2011 due to extended wet weather impacts on water holding facility



## PEL 238 Certified Gas Reserves (as at Dec 2009)

1P	2P	3P
115 PJ	1,520 PJ	2,797 PJ

## PEL 238 Certified Contingent Resources (as at Dec 2009)

1C	2C	3C
1,243 PJ	3,515 PJ	6,215 PJ

Area	Southern PEL 427	PEL 6/427/428
Contingent Resource	475 PJ	536 PJ
Prospective Resource		4,637 PJ
ESG Interest	50%	40-80%

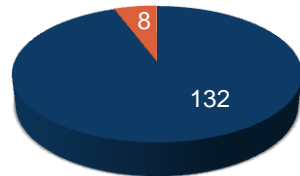


# Gas Markets – A Different Proposition to Most...

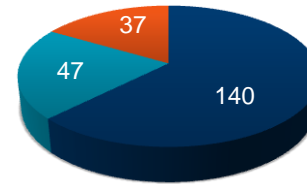
## Domestic Market

### Significant domestic power generation growth

- ESG located close to NSW brownfields sites



**Gas Mix (PJ/a)**  
 ■ Imported (Other Australian states)  
 ■ Indigenous



**NSW Demand (PJ/a)**  
 ■ Existing Demand  
 ■ Growth 10 years  
 ■ Growth 20 years

*Derived from ABARE data*

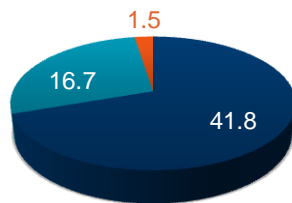
## LNG Export Market

### ESG is developing mid-scale LNG in Newcastle

- Multiple modular 1 Mtpa trains
- 24 hA Kooragang Island site acquired – sufficient for 4 Mtpa
- Third parties likely to be introduced closer to FID

### Plant capacity not large in an Australian (or Asia-Pacific) context

- Potentially different market base



**Total Aust LNG (Mtpa)**  
 ■ Increments to 2020  
 ■ Production 2009  
 ■ ESG Proposed  
 Source: APPEA



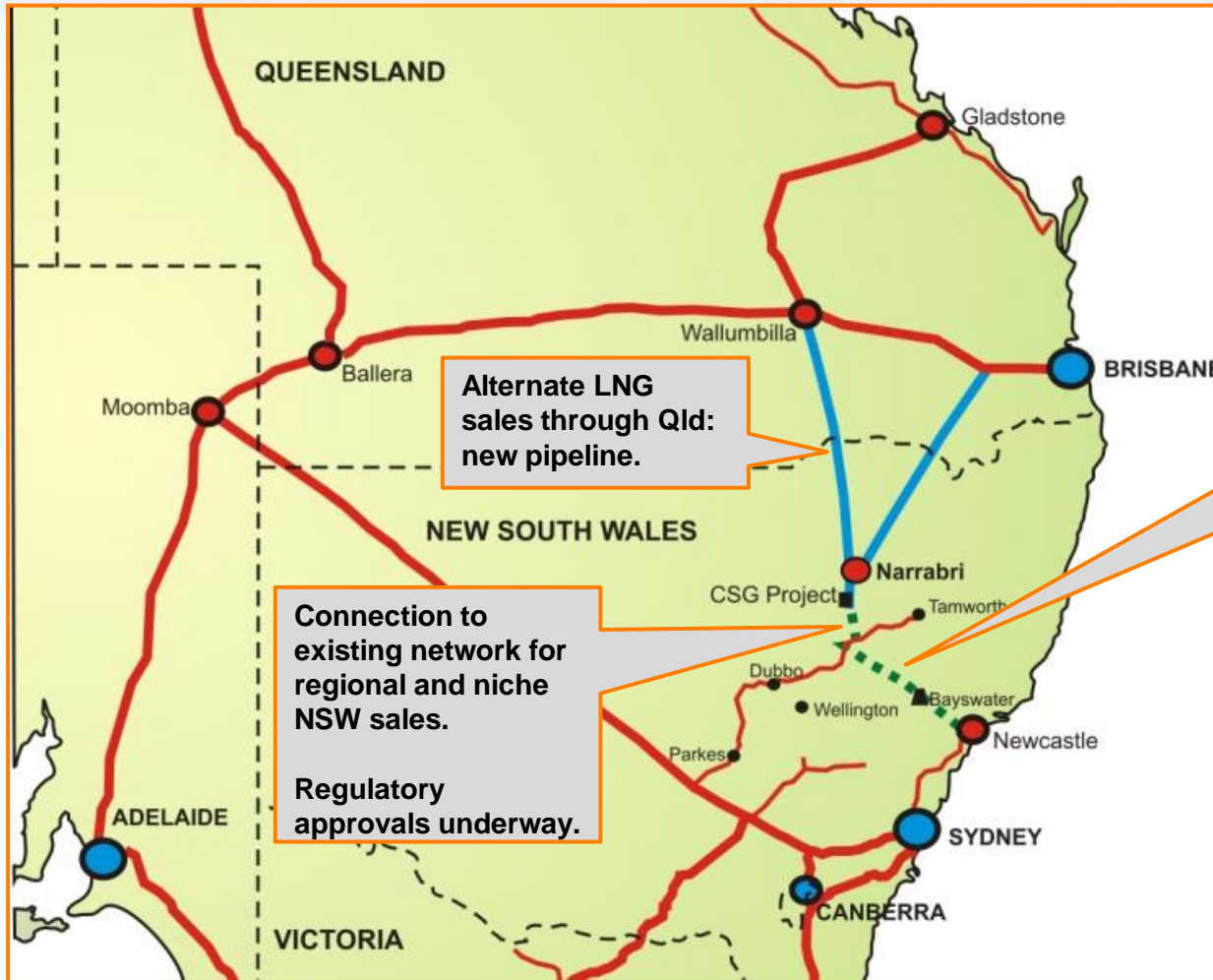
*Image courtesy Toyo Engineering Corporation*

Discrete market opportunities can be matched by staged development



# Infrastructure - Connecting to the market

## Gas Transmission Pipelines



Alternate LNG sales through Qld: new pipeline.

Connection to existing network for regional and niche NSW sales.  
Regulatory approvals underway.

New 400km, large high-pressure pipeline to Newcastle LNG and possible Hunter Valley power station sales.  
Regulatory approvals underway.

Infrastructure needs have been integrated into project development



# The Way Forward

## Mid 2011

- Continue regulatory approval processes for field development, pipelines and Newcastle LNG
- Tintsville production pilot now online, producing from Hoskissons coal seam
- Determine single go-forward option for upstream (gas field) development
- Stacked lateral production pilot - drilling underway
- Gas reserves upgrade

## Late 2011 - Early 2012

- Complete FEED for upstream development and LNGN Project
- LNG sales agreements in place
- Project financing arrangements established
- Project development approvals secured
- Commitment to Project development (FID)



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Clear pathway to project commercialisation

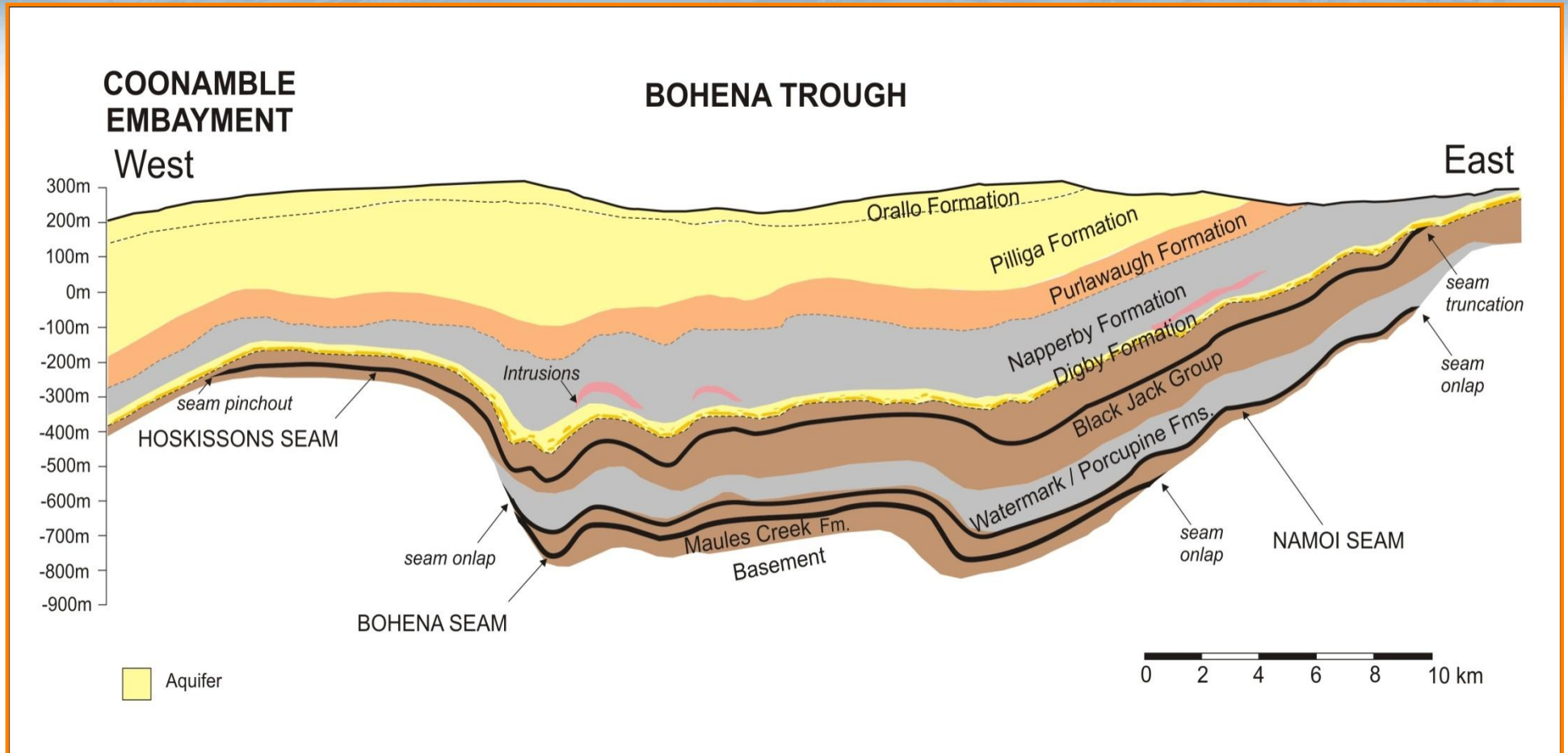


A blue-tinted photograph of industrial machinery, likely a gas processing plant, featuring various pipes, valves, and gauges. The image is used as a background for the document.

# Supplementary Information

Narrabri Gas Project – May 2011

# Narrabri CSG Project - Geology



Valuable Pilliga aquifers are separated from target coals by impervious rock layers (or Aquitards)



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# Target Markets

## Operating

### Local gas-fired electricity generation plant.

- 7 MW operating, further 9 MW committed, future 40 MW total

## Front End Engineering & Design (FEED)

### Domestic sales

- Expand/extend existing pipe network
- ERM power station @ Wellington - 20 PJ/a from 2013
- Other power gen - 70 PJ/a

### Export sales

- Newcastle industrial port close to Narrabri
- Mid-scale (1 Mtpa) LNG plants competitive on capital costs
- Alternative route to LNG market by northern pipeline to Qld LNG plants



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Target markets have diversity

# LNG Newcastle

## MoU with Hitachi and Toyo Engineering:

- World-class parties

## Electric motor driven, mid-scale Chart technology:

- Modular design - low cost, quick delivery
- Suited to site - low noise, small footprint
- Early commercialisation, easy ramp-up

## Timing:

- Feasibility Study completed end 2010
- Progress FEED to allow 2012 commitment

**Gas reserves already support 1 Mtpa 1st stage**

**Approvals processes initiated**



*Image courtesy Toyo Engineering Corporation*



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Potential to achieve first LNG export by 2015



# Disclaimer

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All references to dollars, cents or \$ in this presentation are to Australian currency, unless otherwise stated.

More information on ESG can be found at [www.easternstar.com.au](http://www.easternstar.com.au)



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