

#### Annual General Meeting 16 November 2012

L20/50 • L33/43 & L44/43

L52 & L53

WA-435-P, WA-436-P, WA-437-P, WA-438-P & WA-443-P

WA-399-P 🖲

Corporate Office 🔵

# SOUTH EAST ASIA AUSTRALIA



#### Chief Executive Officer address 16 November 2012

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# SOUTH EAST ASIA AUSTRALIA

# Strategy



#### ✓ Build sustainable production

- From conventional sandstone reservoirs
- From new approach to igneous (ie volcanic) reservoirs

#### ✓ Maximise free cash flows and earnings

- From Thailand production
- ✓ Invest in significant growth potential assets
  - **Thailand** oil field development and new exploration
  - North West Shelf permit drilling targeting gas, condensate and oil
  - New strategic initiatives



# **Regional assets**



#### Thailand

#### Western Australia

- Established oil province
  - 12 mmbbls<sup>(1)</sup> net CVN on 2P basis

#### Undrilled prospects

 50 mmbbls<sup>(2)</sup> net CVN in identified prospects on 3D seismic

#### 90% of acreage still in exploration phase

 Both sandstone and igneous potential

#### Established gas province

Phoenix-1 discovery

#### Two large prospects to drill

- Farmed out to Apache & JX
  Nippon to cover 2 wells
- First well expected late 2013<sup>(4)</sup>
- Two multi Tcf prospects<sup>(3)</sup>
- Potential liquids rich gas

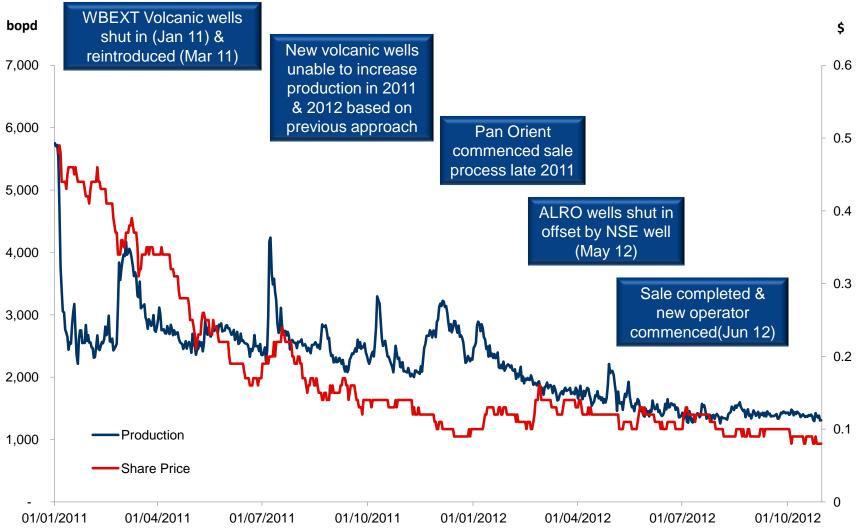
#### Extensive opportunity in 28,000km<sup>2</sup> of permit holdings

- Portfolio of oil and gas leads
- Large equity interests held



- (1) Based on December 2011 Gaffney, Cline & Associates reserve report
- (2) Based on previous operator's technical assessment
- (3) Based on Operator's and Carnarvon's assessment and independent review by consulting firm ISIS. Carnarvon has a 20% interest.
- (4) Subject to rig availability and environmental approvals

# **Production driving the share price**



2VON

# What will drive production



#### Activities targeting 3,000 bopd by 31 December 2012

- 1. Return **ALRO** shut-in wells to production
- 2. Systematic development of **WBEXT 1B fault block** sandstone wells
- 3. Pressure support for sandstone with water injection

#### Activities aimed at stabilising & building on the above rate in 2013

- 1. Drilling further WBEXT sandstone wells into 1B, 1E and 1F fault blocks
- 2. Pressure support for the above fault blocks with water injection
- 3. Completing the **Overall Development Plan** ("ODP") technical work and continuing sandstone and igneous development activities:
  - New operator foreshadowing bigger sandstone development across the permits
  - Water injection seen as means of increasing flow rates through pressure support
  - Fracture network studies to enhance facture predictability
  - Geological analysis of oil and water distribution

Strong technical input from Towngas and Carnarvon teams

### **Carnarvon Board and Management Team**



#### Non-Executive Directors



Peter Leonhardt Chairman Accounting & finance background



Bill Foster Non Executive Director Engineering & commercial background



Ted Jacobson Non Executive Director Geological & business background



Neil Fearis Non Executive Director Legal background

#### Management



Adrian Cook CEO & Managing Director Finance & commercial background



Philip Huizenga COO Reservoir engineering background



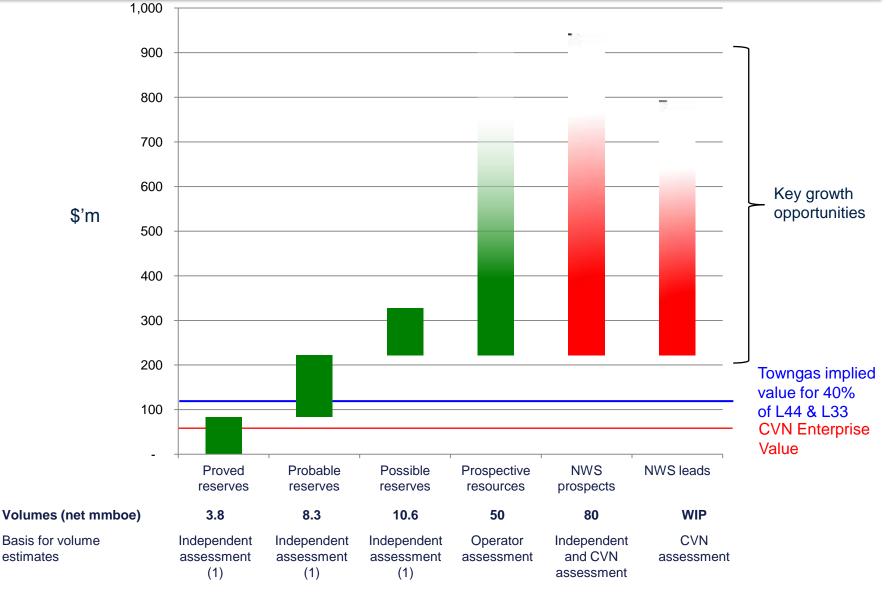
Stephen Molyneux Exploration Manager Geological background



Andrew Padman Exploration Advisor Geophysics background

## **Investment proposition**





(1) Based on Gaffney, Cline & Associates review at 31 December 2011



# Thailand

# L44/43 and L33/43

### (40% CVN)

## **New operator - Towngas**



#### Hong Kong and China Gas Limited ("Towngas"):

- Towngas is a energy utilities and infrastructure group with an increasing number of upstream energy businesses in Asia.
- Listed on the **Hong Kong stock exchange** market capitalisation ~US\$20bn
- Interests in 22 energy projects including conventional oil & gas production, unconventional gas production and gas to liquids technology
- Their aim is to cover all aspects of energy from oil exploration through to gas processing

#### Towngas initiatives since assuming operator role:

- Towngas adopted a "steady as she goes" approach while reviewing all aspects of the asset for anticipated significant changes in 2013
- **First objective** was the effective delivery of the WBEXT sandstone program
  - Drilling times for sandstones wells consistent at 10-11 days
  - Well costs around US\$1 million per well
- Initiated technical teams to review development and exploration activities
  - Expect significant new development areas in 2013
  - Anticipate "no oil molecule left behind" in concerted effort to maximise value

# Short term work program



- Sandstone development program covering 1B fault block, commenced end July 2012
- Infill fractured igneous wells
- Exploration wells
- Workover initiatives in 100+ shut-in wells

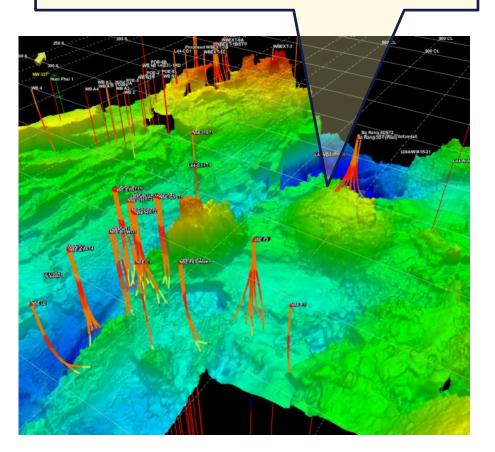
### ... and anticipated production growth ...

Area of production	Gross anticipated production		
Base production	1,400 bopd		
ALRO temporary shut-in	500 bopd		
2012 Sandstone campaign	800 bopd		
2012 Workover campaign	100 bopd		
2012 Igneous redevelopment	200 bopd		
2012 Exploration activities	Risked exploration		
Dec 2012 exit rate	3,000 bopd		

# **Reintroducing ALRO production**



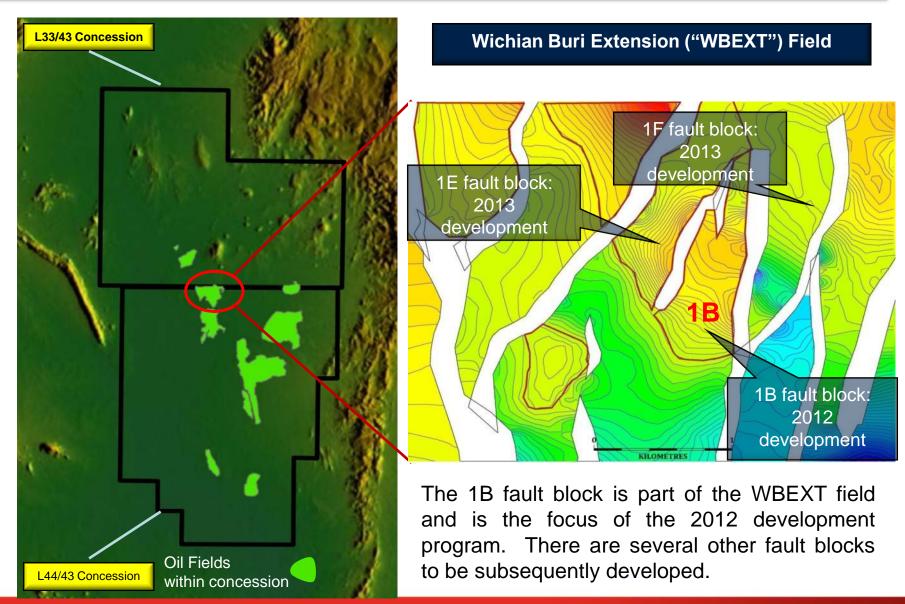
ALRO subsurface area dominated by Bo Rang dome – connection to aquifer by edge drive results in no early water ingress



- Agricultural Land Reform Office ("ALRO") authorised exploration wells but was unclear on "development"
- Working to reintroduce production in December 2012 based on ALRO meetings end November 2012
- Flowing 500 bopd (gross) prior to production being shut-in
- Wells exhibit unique flow regime and anticipated to come back online at higher "flush production" rates

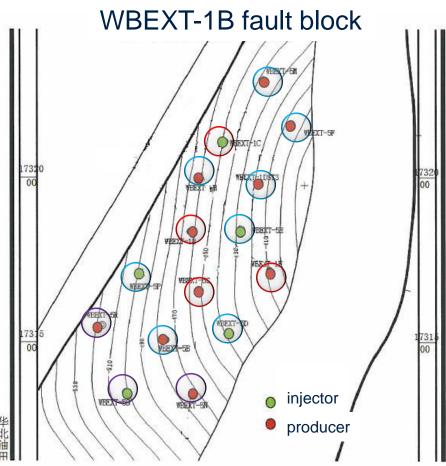
# WBEXT sandstone - 2012





# WBEXT 1B fault block







Prior to Dec Qtr

Dec Qtr

2013

# WBEXT-1B fault block expected to flow **800 bopd by end December 2012** from:

- 7-8 wells producing 50-150 bopd each
- 3-4 wells injecting

#### To mid November:

- 9 wells drilled (6 testing various zones
   3 yet to test)
- 1 well about to spud
- 2 wells planned post facilities installation

Wells have tested up to 500 bopd in this development area (such as WBEXT-1B) prior to pressure decline

 Water injection facilities online early December to sweep oil and add pressure support



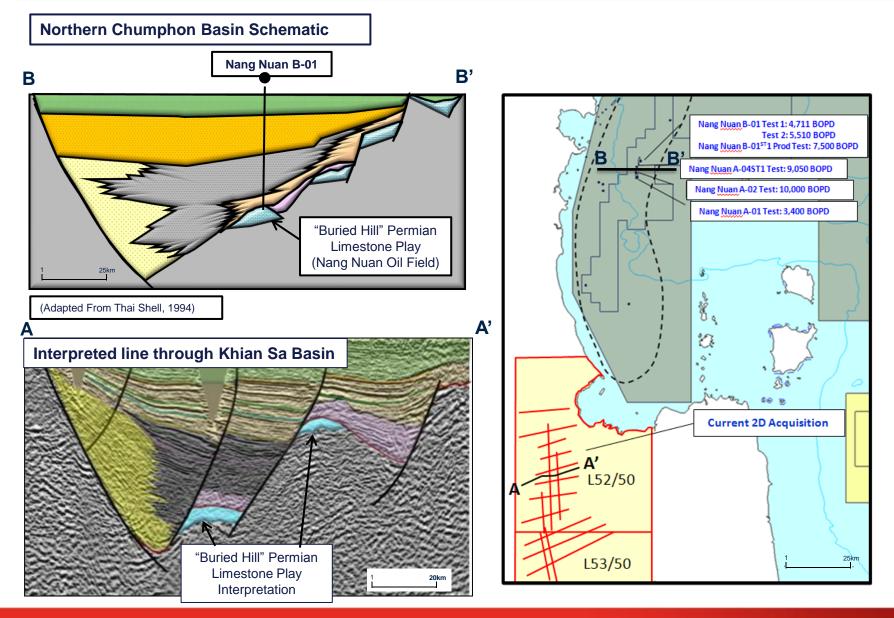
# Thailand

# L52/50 and L53/50

### (50% CVN)

# L52/50 & L53/50





# **Thailand activity**



#### Forward work program

- Develop WBEXT Sandstone commencing with 1B fault block
- Acquire additional 3D Seismic in L33/43
- Longer term, pursue stable 4,000 to 5,000 bopd from each of L33/43 & L44/43

	Dec Qtr 2012	Mar Qtr 2013	Jun Qtr 2013	Sept Qtr 2013
WBEXT Sandstone wells	7-8 wells	7-8 wells	Based on ODP	
Overall development plan (ODP)				
WBEXT sandstone waterflood	1B block		Based on ODP	
Acquire 3D seismic in L33/43		100 km <sup>2</sup>		
Infill and appraisal igneous wells	1-2 wells		Based on ODP	
Develop exploration strategy				
Drill exploration wells	1 well		Based on ODP	

#### **Key Activities**



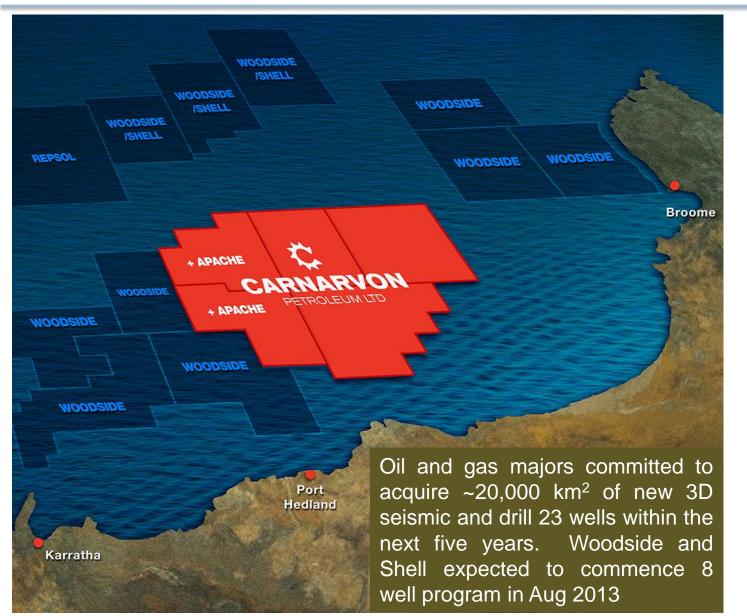
### **North West Shelf**

# WA-435-P & WA-437-P = 20% CVN <sup>(1)</sup> WA-436-P & WA-438-P = 50% CVN WA-443-P = 100% CVN

(1) blocks recently farmed out

#### **Opportunity to enter region now limited**





#### Woodside

Shell

Repsol

Apache
 & JX Nippon

• Carnarvon - First mover

- Discovered gas

### **Recent farmout**



- Apache acquired 40% interest and will operate the WA-435-P and WA-437-P permits, including drilling of the wells
- JX Nippon acquiring 20% interest
- Carnarvon and Finder retain 20% interest each
- Apache and JX Nippon farmin will collectively cover the cost of drilling Phoenix South prospect (firm) and the Roc prospect (contingent)
- Carnarvon to be reimbursed past expenditure on registration of new permit interests
- Phoenix South prospect expected to spud late 2013, subject to rig availability and environmental approvals

Operated by international oil & gas major

Support from experienced NWS player

Carnarvon retains material holding

Free carry on drilling of two high impact prospects

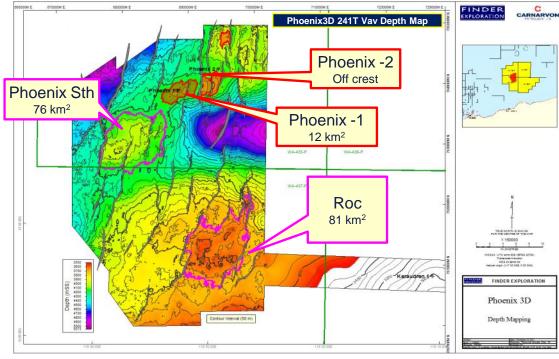
Recovery of working capital enables commencement of next farm out program

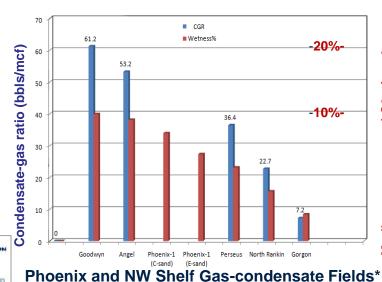
Tight rig market for suitable drilling rigs

Mudlog gas wetness (C2+ / total gas stream

# Significant volumes in drill prospects

- Proven Triassic gas resource with Gas Initially In Place ("GIIP") estimate of 870 BCF (highside) at Phoenix-1.
- Prospect highside GIIP estimates for Phoenix South (~5.5 TCF) and Roc (~5.5 TCF).
- Potential for condensate (from gas wetness ratio) of 36-53 million bbls per TCF.





Phoenix well mud logs indicate
 presence of gas 'wetness'.

\*Source: WA govt cumulative field production @ 31 December 2010.

 Comparison with mudlogs from condensate-rich NWS gas fields suggests significant recovery of condensate likely.

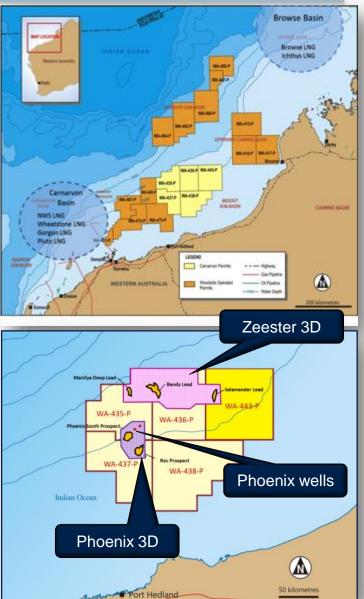
Best comparison of likely condensate / gas ratio is between **Perseus & Angel** fields.



# The bigger potential



- Potential new oil and gas fairway between the Carnarvon and Browse Basins on the North West Shelf covering 28,000km<sup>2</sup> of CVN interests.
- Oil and gas discovered in the area with gas in Carnarvon's WA-435-P permit and oil in the adjoining permit (namely in the Nebo-1 well in the WA-465-P).
- Zeester 3D seismic data expected to set up the next stage of technical work for farmout of the WA-436-P permit.
- Numerous gas and oil structures mapped on 2D
  - Phoenix 3D unlocking new oil and gas prospects
  - Zeester 3D will unlock potential in the north of the permits
- Significant acreage for future exploration





#### Forward work program

- Completed farmout of Phoenix South & Roc prospects (in WA-435-P & WA-437-P)
- Licence additional 3D seismic data to commence next round of farmouts
- Drill Phoenix South and Roc prospects
- Pursue oil play across the blocks

Key Activities							
	Mar Qtr 2013	Jun Qtr 2013	Sept Qtr 2013	Dec Qtr 2013			
Complete farmout of Phoenix 🖌							
Drill – Phoenix South well (indicative)							
Drill – Roc well (indicative)				?			
License Zeester 3D							
Commence farmout WA-436-P							

# Recap 2012 + Highlights





# 2013 Goals

DEC 31 2012 IN L44/43

3.000 BOPD BY



Reintroduction of shut in production
 Sandstone wells with water flooding
 OVERALL
 DEVELOPMENT PLAN
 FOR L44/43 & L33/43
 Complete in early 2013
 Objective to build steady production

NWS

8

HQ

NEW 3D SEISMIC IN L33/43 - Data cube available mid 2013 - New upside in a proven oil system

> NEW VENTURE OPPORTUNITIES - New geosciences team

L52/L53

FARMOUT

#### **DRILL PHOENIX SOUTH IN WA-435-P**

- Apache operator

- High impact prospect near discovered gas - Free carry on well

WA-436-P

- Zeester 3D available for license mid 2013
- Technical work and preparation for farmout

#### **CONTINUE IDENTIFYING NWS PROSPECTS**

- Oil play concepts in Phoenix 3D area
- Bandy prospect has oil potential
- 28,000km<sup>2</sup> of area yet to undergo technical evaluation

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