

## NEWS RELEASE

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### **BHP BILLITON DETAILS VALUE-FOCUSED APPROACH TO EXPLORATION**

BHP Billiton today outlined its value-focused approach to exploration which will see the Company target opportunities across copper and oil to enhance its long-life, tier 1 portfolio.

Speaking at Citigroup's Mining Exploration Day in Sydney, BHP Billiton Head of Geoscience, Laura Tyler, said the Company is focusing its exploration approach through targeted analysis and the establishment of a Geoscience Centre of Excellence.

Ms Tyler said exploration is seen as a key source of value creation for BHP Billiton.

"We are investing at a time when most in our sector continue to reduce discretionary spend," she said.

"Next financial year, we intend to invest approximately US\$900 million dollars in exploration, which represents 18 per cent of our overall capital budget.

"We are also challenging existing paradigms with a scientific based and disciplined approach to exploration. We have reduced exploration operating costs by 70 per cent since 2013, and this year we have increased the targets tested by 44 per cent."

BHP Billiton's Petroleum exploration program is focused on three conventional deepwater basins in:

- the Gulf of Mexico,
- the Caribbean (in Trinidad & Tobago and Barbados), and
- the Northern Beagle sub-basin off the coast of Western Australia.

"Over the last four years we have developed a new approach to Petroleum exploration that is much more focused," Ms Tyler said.

“We have commenced drilling in Trinidad and Tobago and have secured an additional rig which will soon commence drilling in a prospective block north of our Shenzi operations in the Gulf of Mexico.”

BHP Billiton’s Copper exploration program is targeting tier 1 greenfield mineral deposits, with a particular focus on:

- copper porphyry and skarn deposits in Chile, Peru and the south west of the United States,
- sedimentary hosted copper deposits in the north of Canada, and
- Iron Oxide Copper Gold deposits in South Australia’s Stuart Shelf, adjacent to Olympic Dam.

“We execute our Copper exploration both directly and through investment in joint venture opportunities and we continue to seek partnerships with junior explorers,” Ms Tyler said.

The Company’s regionally based exploration teams are supported by a globally integrated geoscience team to facilitate a faster adoption of best practice and new technology.

“Internal collaboration is very important and we are leveraging our Petroleum business geoscience to identify prospective sediment hosted copper deposit basins,” Ms Tyler said.

“Similarly, we are adopting technology from Petroleum and applying directional drilling techniques to copper exploration.”

Further information on BHP Billiton can be found at: **[bhpbilliton.com](http://bhpbilliton.com)**

## Media Relations

### Australia and Asia

Eleanor Colonico  
Tel: +61 3 9609 2360 Mobile +61 407 064 748  
Email: [Eleanor.Colonico@bhpbilliton.com](mailto:Eleanor.Colonico@bhpbilliton.com)

Paul Hitchins  
Tel: +61 3 9609 2592 Mobile +61 419 315 001  
Email: [Paul.Hitchins@bhpbilliton.com](mailto:Paul.Hitchins@bhpbilliton.com)

Fiona Hadley  
Tel: +61 3 9609 2211 Mobile +61 427 777 908  
Email: [Fiona.Hadley@bhpbilliton.com](mailto:Fiona.Hadley@bhpbilliton.com)

### United Kingdom and South Africa

Ruban Yogarajah  
Tel: +44 207 802 4033 Mobile +44 7827 082 022  
Email: [Ruban.Yogarajah@bhpbilliton.com](mailto:Ruban.Yogarajah@bhpbilliton.com)

Jennifer White  
Tel : +44 207 802 7462 Mobile +44 7827 253 764  
Email: [Jennifer.White@bhpbilliton.com](mailto:Jennifer.White@bhpbilliton.com)

### North America

Jaryl Strong  
Tel: +1 713 499 5548 Mobile: +1 281 222 6627  
Email: [Jaryl.Strong@bhpbilliton.com](mailto:Jaryl.Strong@bhpbilliton.com)

BHP Billiton Limited ABN 49 004 028 077  
Registered in Australia  
Registered Office: Level 18, 171 Collins Street  
Melbourne Victoria 3000 Australia  
Tel +61 1300 55 4757 Fax +61 3 9609 3015

## Investor Relations

### Australia and Asia

Tara Dines  
Tel: +61 3 9609 2222 Mobile: +61 499 249 005  
Email: [Tara.Dines@bhpbilliton.com](mailto:Tara.Dines@bhpbilliton.com)

Andrew Gunn  
Tel: +61 3 9609 3575 Mobile: +61 402 087 354  
Email: [Andrew.Gunn@bhpbilliton.com](mailto:Andrew.Gunn@bhpbilliton.com)

### United Kingdom and South Africa

Rob Clifford  
Tel: +44 20 7802 4131 Mobile: +44 7788 308 844  
Email: [Rob.Clifford@bhpbilliton.com](mailto:Rob.Clifford@bhpbilliton.com)

### Americas

James Wear  
Tel: +1 212 310 1421 Mobile: +1 347 882 3011  
Email: [James.Wear@bhpbilliton.com](mailto:James.Wear@bhpbilliton.com)

Joseph Suarez  
Tel: +1 212 310 1422 Mobile: +1 646 400 3803  
Email: [Joseph.Suarez@bhpbilliton.com](mailto:Joseph.Suarez@bhpbilliton.com)

BHP Billiton Plc Registration number 3196209  
Registered in England and Wales  
Registered Office: Neathouse Place  
London SW1V 1LH United Kingdom  
Tel +44 20 7802 4000 Fax +44 20 7802 4111

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# Value creation through exploration

## 27 June 2016

Laura Tyler, Head of Geoscience



Deepwater seismic shooting  
Photo courtesy of PGS

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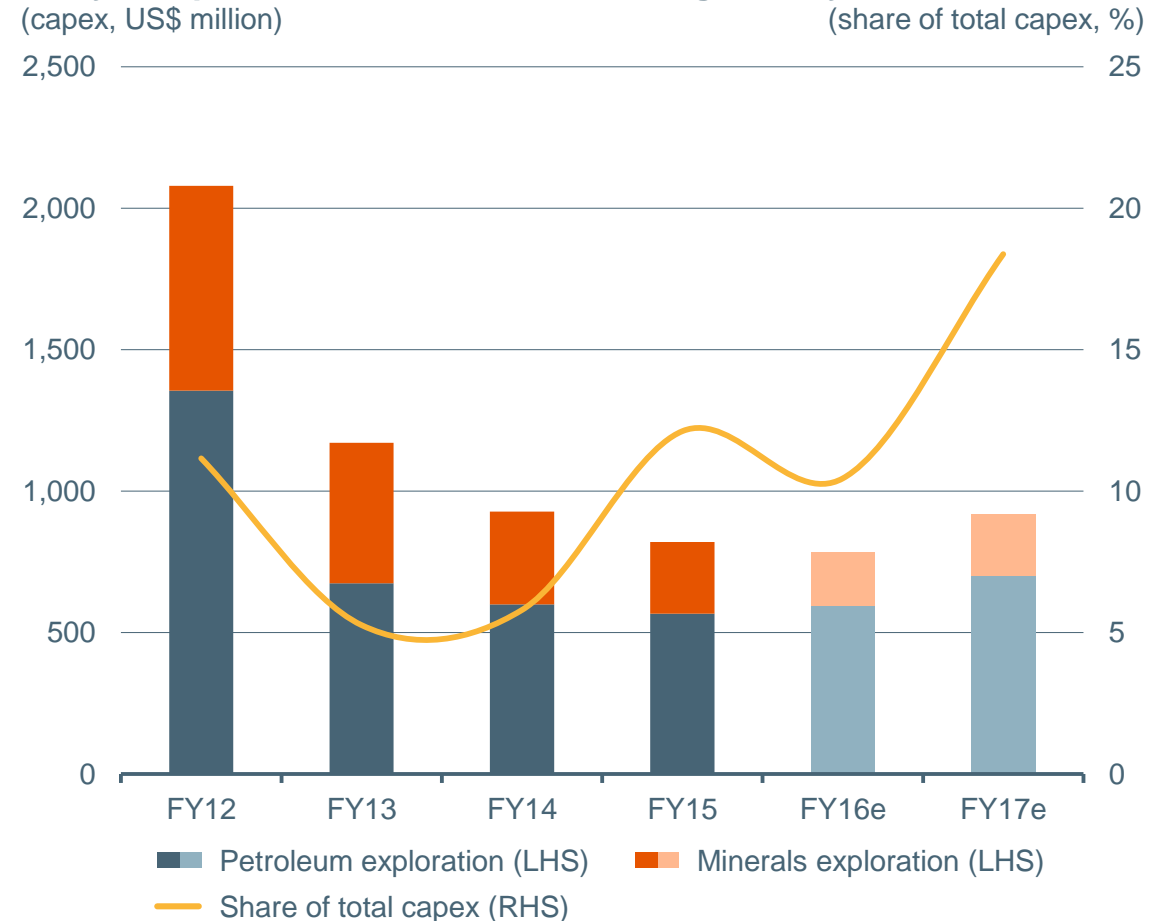
# Key themes

- **A focused exploration approach**
  - regional exploration teams supported by globally integrated geoscience expertise
  - exploration investment through the cycle
  - more targeted analysis has generated high-quality portfolio
- **Targeting deep water oil in the Gulf of Mexico, Caribbean and Western Australia**
  - analysis of high-quality data underpins our prospects
  - testing three basins over the next three years
  - counter-cyclically securing additional acreage and rigs
- **Pursuing greenfield copper discoveries with a focus on the Americas and Australia**
  - improvements in geoscience and technology are increasing drilling efficiency
  - progressing potential opportunities in preferred deposit types
  - seeking partnerships with junior explorers to de-risk projects and secure future options

# A value-focused exploration approach

- Exploration is a key source of value creation
  - investment through the cycle with US\$700-900 million of annual spend anticipated from FY16 to FY18
  - exploration increases as a proportion of total capital expenditure as we accelerate evaluation
- We have the right people and processes
  - regional based exploration teams supported by globally integrated geoscience expertise
  - right data and fit-for-purpose systems
- A focused portfolio of opportunities in copper and conventional oil
  - further brownfield potential in our large, long-life, low-cost assets
  - seeking large greenfield discoveries in copper and oil to complement our strong portfolio of tier 1 assets
  - access to preferred ore bodies and fields supported by key stakeholder relationships and financial strength

## A key component of value creation through the cycle

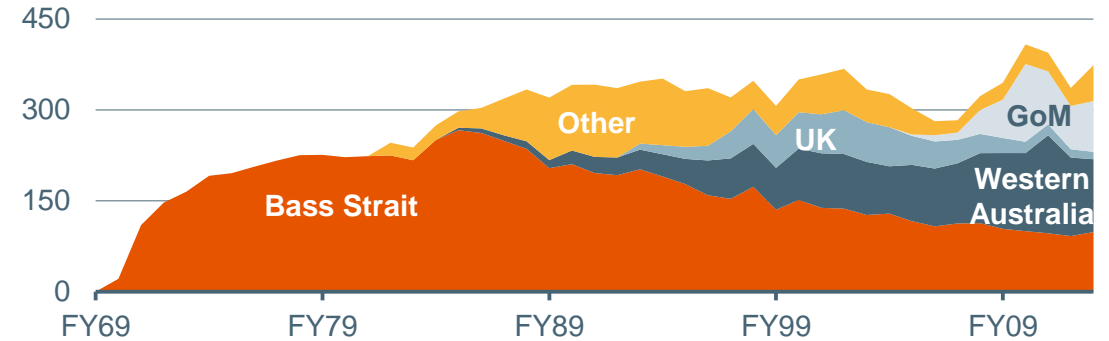


# Targeting tier 1 opportunities in Petroleum

- Our Petroleum exploration program has delivered success
  - Bass Strait (1960s): Australia's first world-class hydrocarbon province
  - Angostura (1990s): discovered gas field in Trinidad and Tobago
  - Gulf of Mexico (2000s): discovery and development of Shenzi deepwater oil and gas field
  - Permian (2010s): defined core area and identified optimal production horizons
- We continue to seek potential tier 1 opportunities...
  - 5 Bboe petroleum system
  - 1 Bboe potential (net to BHP Billiton)
  - multiple 250 Mmboe pools
  - >100,000 kboe/d (net to BHP Billiton)
- ...with characteristics to maximise returns
  - supportive fiscal terms
  - 'early mover' advantage
  - security of tenure

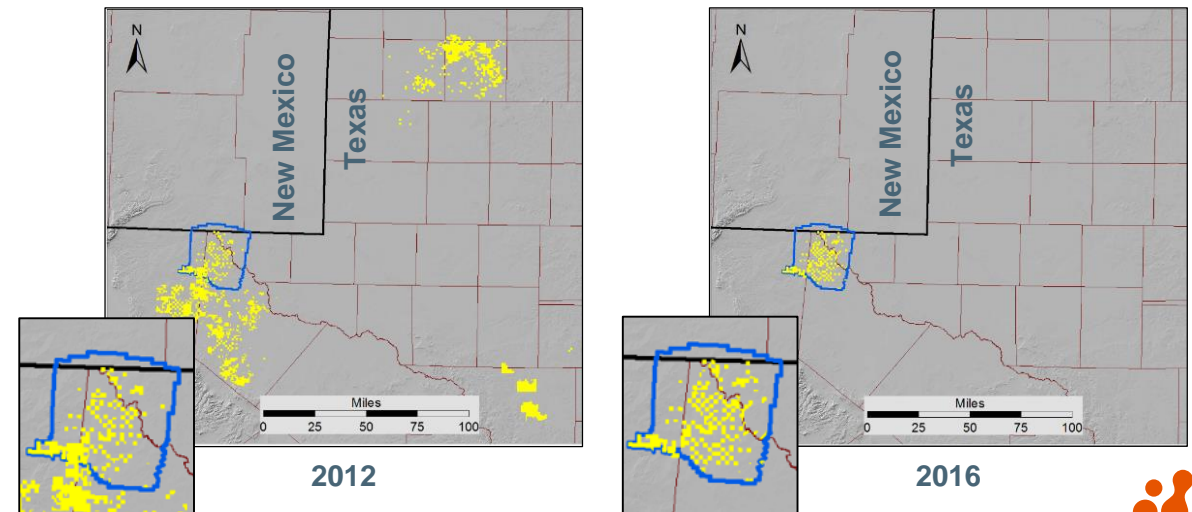
## A long history of Conventional exploration success

(production, kboe/d)



## Optimised Onshore US acreage through exploration

(Permian acreage)

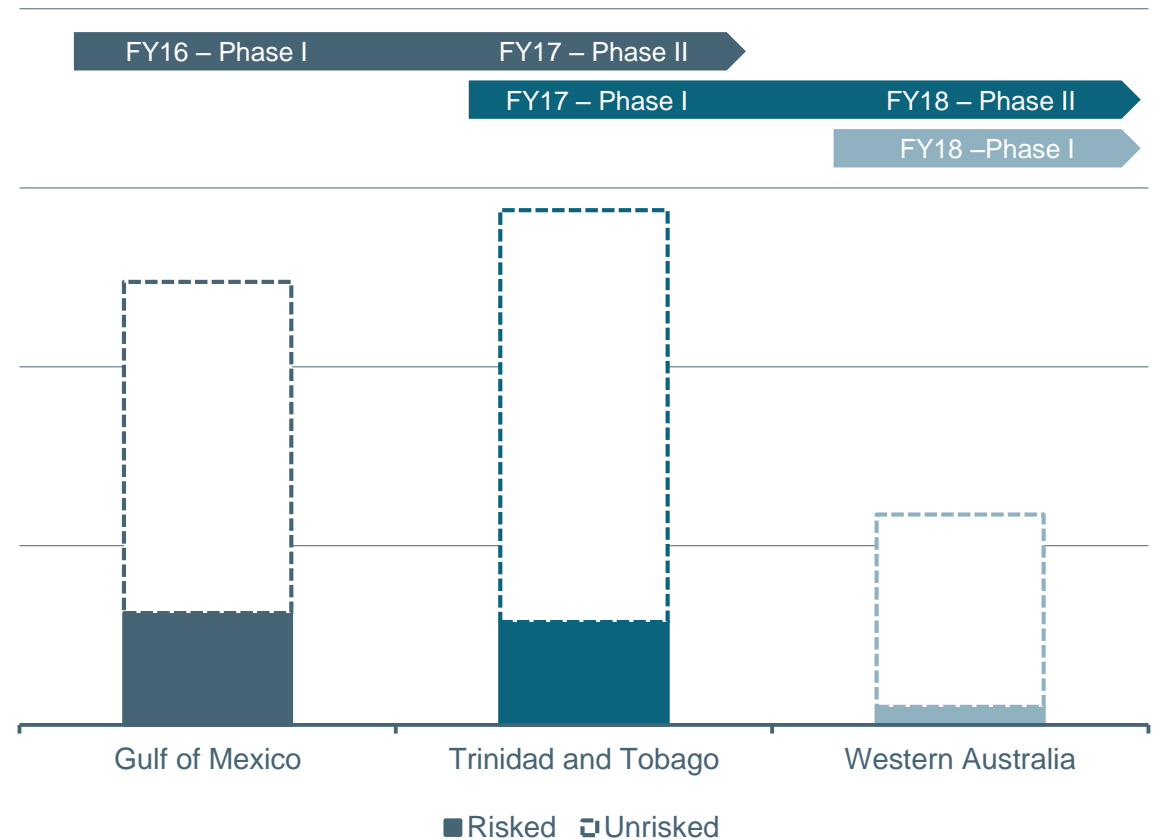




# A focused oil exploration program

- Based on our global endowment study we have built a position across six plays in the deep water
  - Paleogene and Cretaceous in the Gulf of Mexico
  - Pliocene, Miocene and Paleogene in the Caribbean
  - Jurassic in the Beagle sub-basin
- Evaluation of tier 1 oil potential supported through...
  - high-quality, comprehensive 3D seismic data
  - best-in-class technical computing infrastructure
  - maturing opportunities in the fastest timeframe
- We aim to test these plays through a drilling program over the next three years
  - drilling underway in Trinidad and Tobago
  - program accelerated by securing additional rig currently en route to Gulf of Mexico to drill in parallel

## Significant exploration potential in the next three years (value<sup>1</sup>, BHP Billiton share)

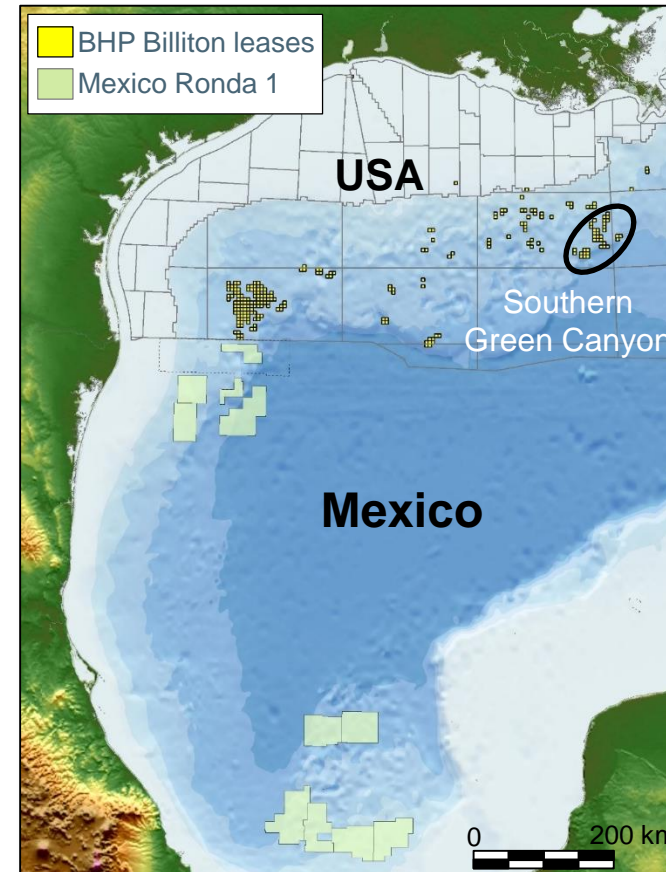


1. Under our long-term price forecasts; BHP Billiton share.

# Gulf of Mexico remains highly prospective

- We have a track record of successful exploration and operations in the Gulf of Mexico
- We continue to build our acreage position in the current low oil price environment
  - 91 blocks secured in past nine months with no well obligations
- Shenzi North exploration wells encountered hydrocarbons
  - assessing nearfield potential in our Southern Green Canyon production heartland
  - accelerated plan to further appraise the basin by drilling the Caicos well early in FY17
- Possible opportunities beyond Shenzi North
  - Paleogene and Cretaceous plays in the western Gulf of Mexico
  - continue to evaluate deepwater for potential access in Mexico

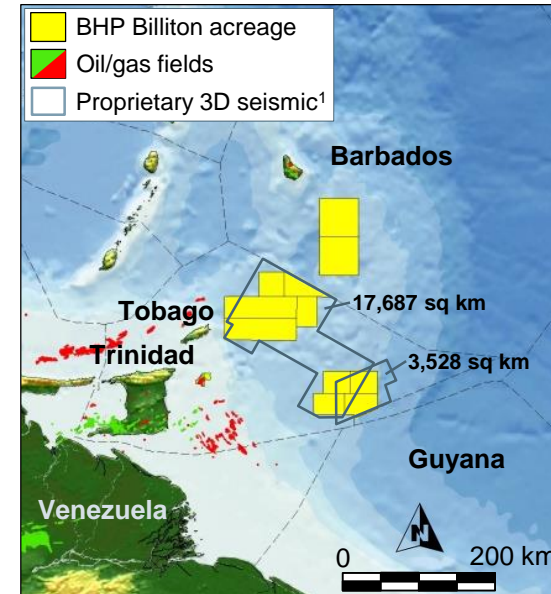
## Significant acreage offers tier 1 oil potential



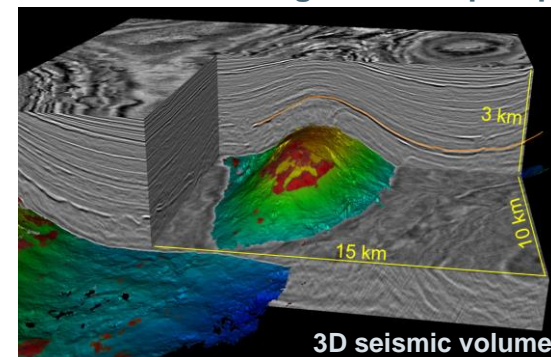
# First mover advantage in the Caribbean

- We have built a dominant 'first mover' deepwater acreage position in Trinidad and Tobago, and Barbados
  - ~17,500 sq km across two plays
  - eleven blocks (nine in Trinidad and Tobago, and two in Barbados)
  - 60% to 100% BHP Billiton equity
- Safely completed largest seismic survey ever undertaken by an Independent Oil Company in FY14-15
- Ongoing evaluation of the high quality 3D seismic continues to support tier 1 potential
- Staged program to test three independent plays
  - stage 1: completed data acquisition and interpretation
  - stage 2: commenced first of 3 wells, LeClerc, spud in May 2016
  - stage 3: further 5 well drilling campaign

## Leading 'first-mover' acreage position



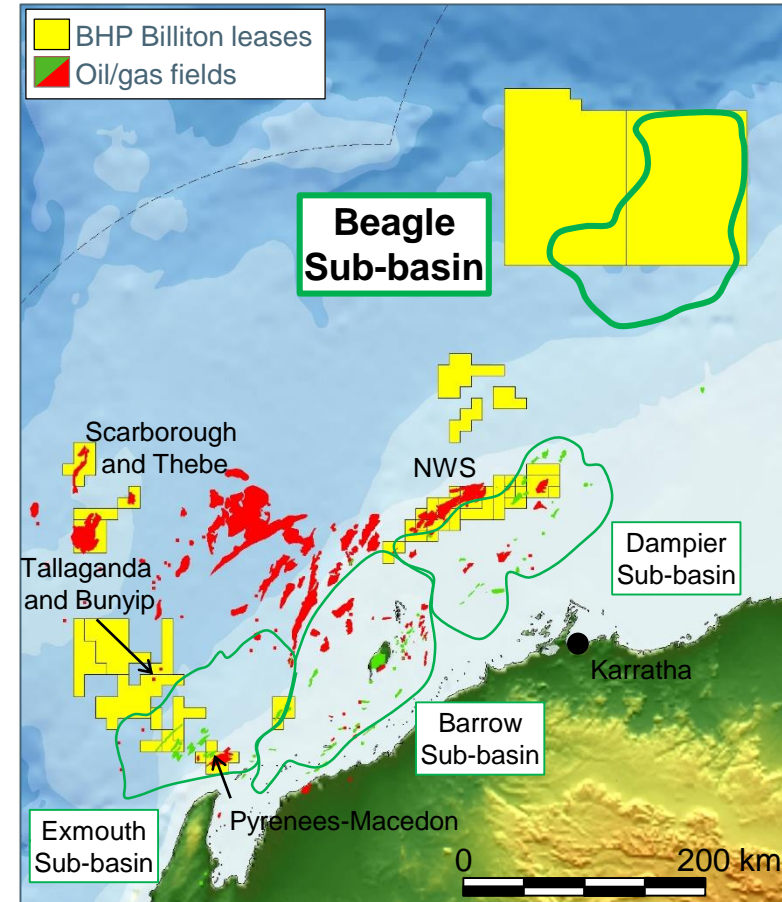
## Trinidad and Tobago LeClerc prospect



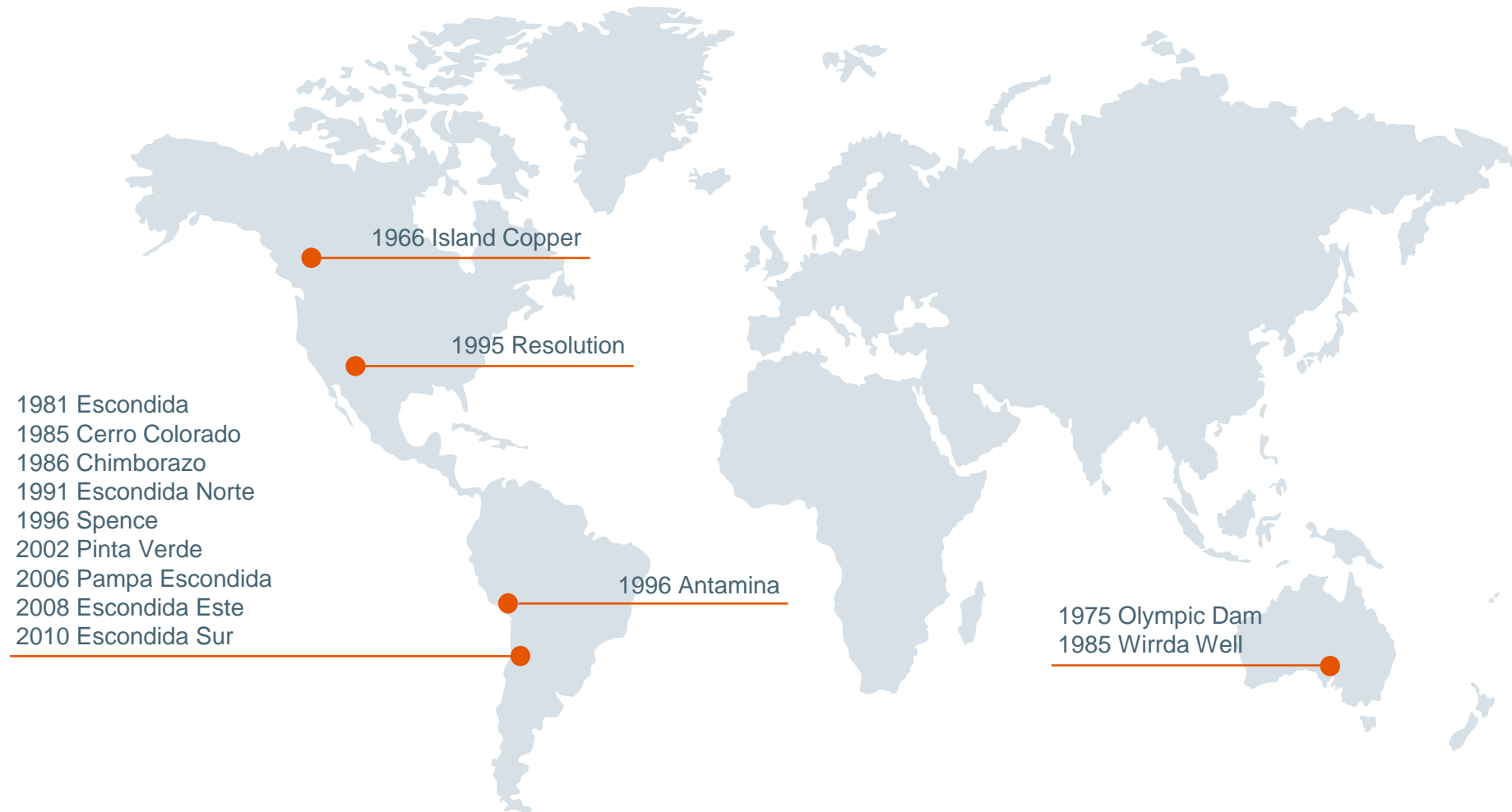
# Prospective position in Western Australia

- We have accessed a dominant position over largely untested Northern Beagle sub-basin
  - farmed into two blocks totalling ~25,000 sq km
  - 55-60% working interest and operatorship
- >30,000 sq km of 3D seismic data accessed
- Sub-regional evaluation in progress
  - targeting Jurassic-aged play
  - drilling decision expected in FY17

A dominant position in the Northern Beagle sub-basin



# A history of successful copper exploration



21 additional deposits were discovered and divested based on competitiveness within the BHP Billiton portfolio.

**Laura Tyler, Head of Geoscience**

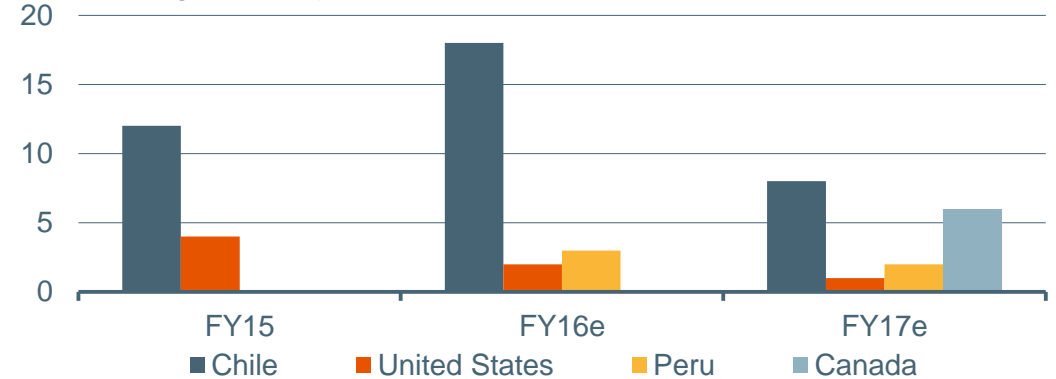
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# Copper exploration remains a strategic priority

- Safe, focused and disciplined programs
  - brownfield exploration has maximised our existing ore bodies
  - current focus on greenfield copper exploration with annual budget of >US\$60 million from FY16 to FY18
- >1.6 million hectares with >100 active projects in different stages
  - 102,000 and 41,000 additional hectares acquired in Peru and the South West US in FY16, respectively<sup>1</sup>
  - seeking partnerships with junior explorers to de-risk projects and secure future options
- Greenfield discoveries can deliver copper for US\$0.02 to US\$0.04 per pound
  - 44% increase in targets tested in FY16
  - reduced operating costs by 70% per metre drilled since 2013

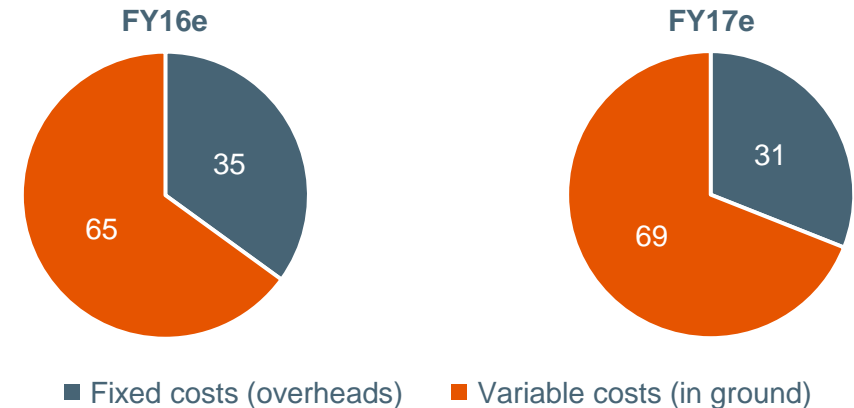
## Increased drilling activity at prospective projects

(number of targets tested)



## A greater focus on in ground expenditure

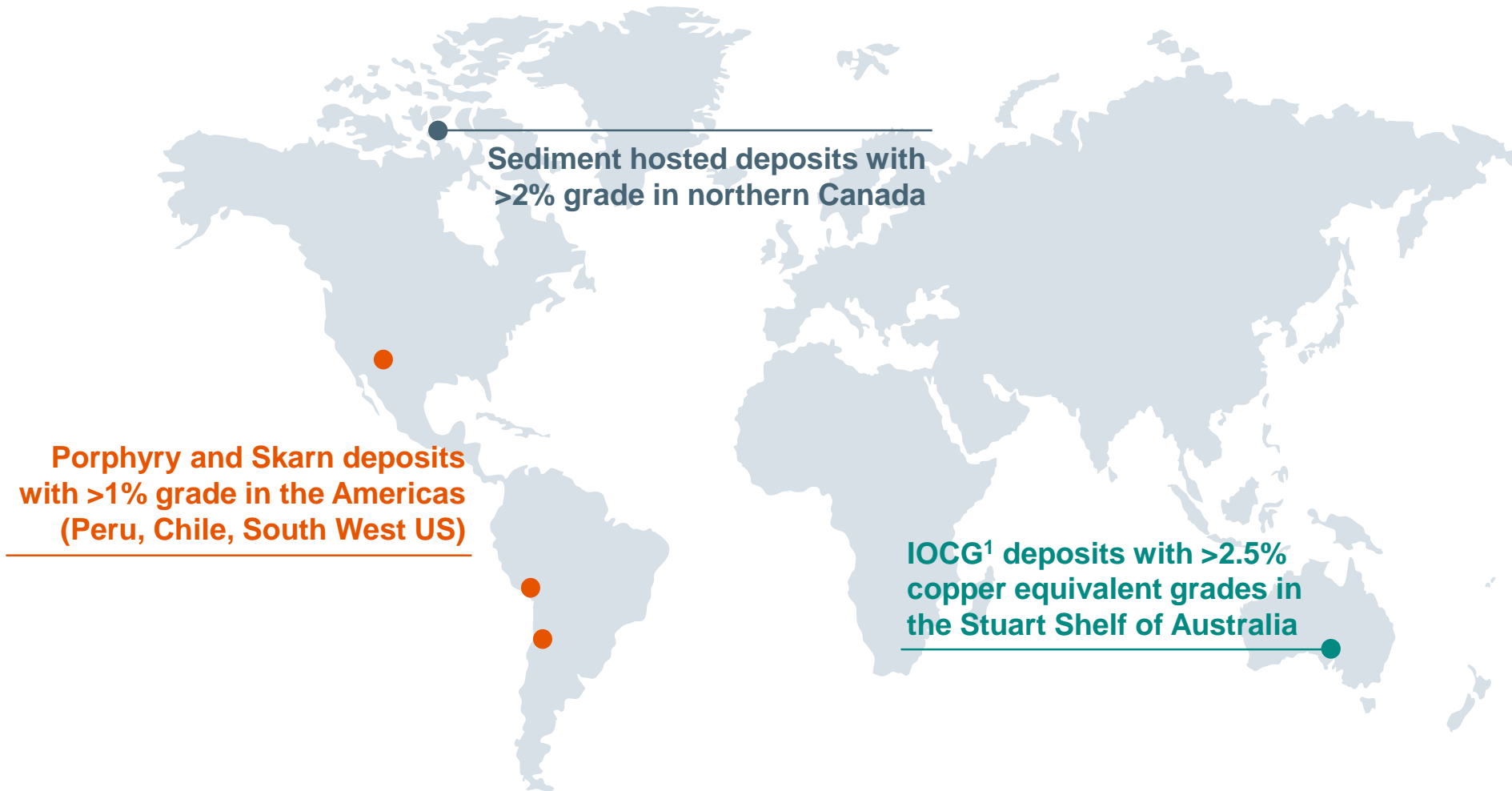
(%)



1. Subject to regulatory approvals.

2. Based on industry exploration costs and BHP Billiton analysis; considers discoveries with an identified resource  $\geq 1$  Mt of contained copper.

# Targeting large, high-grade, long-life, option-rich deposits

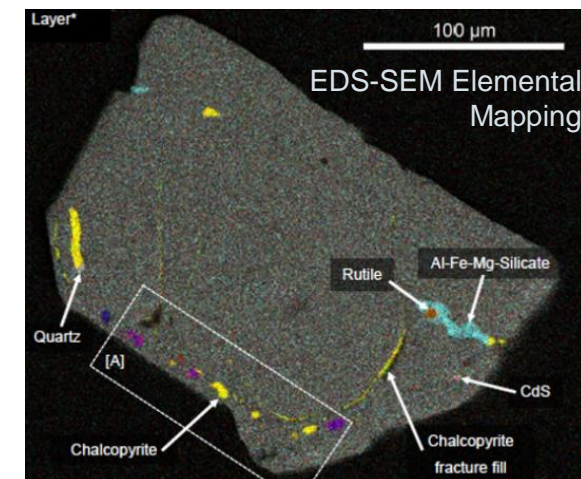
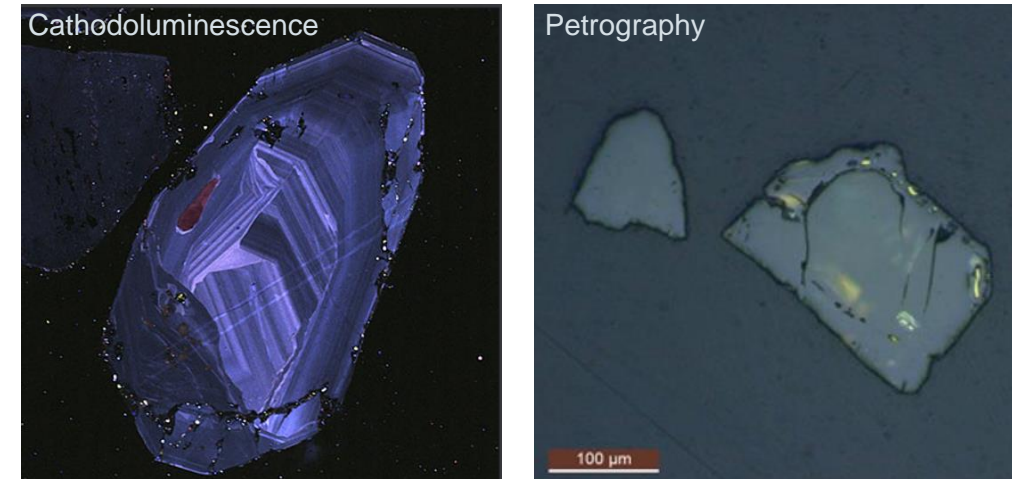


1. Iron ore, copper and gold poly-metallic ore body.

# The next generation of copper exploration

- We have a wide range of improvement initiatives
  - partnerships with Bristol and Wollongong Universities on determination of mineralisation
  - potential to leverage our Petroleum geoscience to identify prospective sediment-hosted-copper deposit basins
  - Centre of Excellence and increased team focus
- The use of technology will improve expenditure efficiency
  - drone mounted sensors allow greater coverage and improve safety
  - down-hole assay tool allows rapid, on-the-ground analysis and sampling
  - potential to apply Petroleum directional drilling techniques to Copper exploration

## Improved mineral characterisation through partnerships and technology (determination of zircon mineralisation, Wollongong University)





# Key themes

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