



Technology, strategy and the growth of gas as a source of global energy

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14 May 2012



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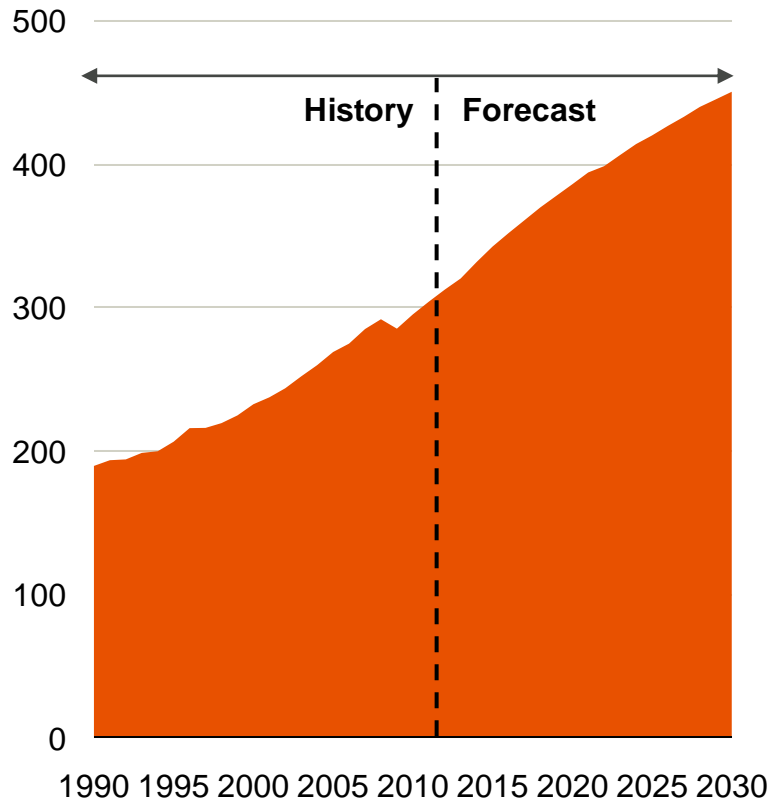
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Stakeholder feedback

Please note, *the Commonwealth Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2006* requires Operators to perform consultation relating to environment plans and oil spill contingency plans. The latest revision of the Regulations includes a requirement for correspondence from stakeholders relating to these plans to be passed on to NOPSEMA and therefore should not be considered to be confidential between the author and BHP Billiton. It is recommended that confidential matters not relating to the environment should be in separate communications.

The global growth of natural gas

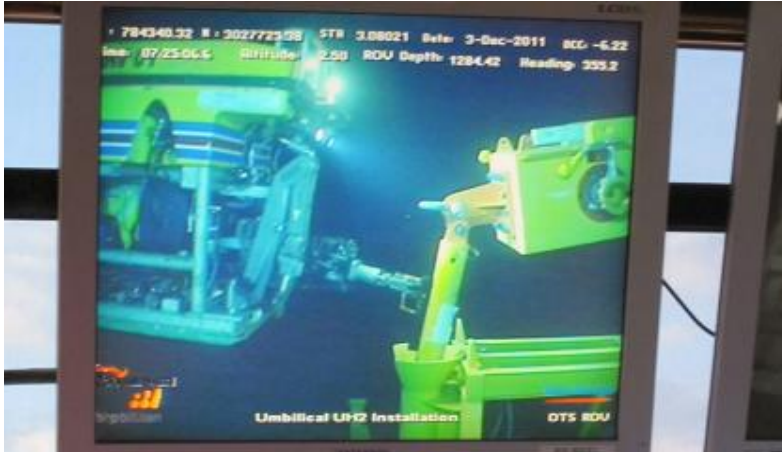
World natural gas consumption (bcf/d)



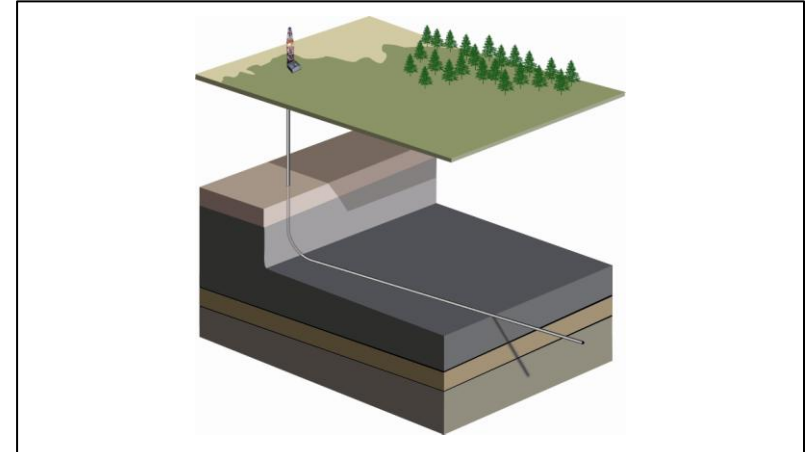
- One of the fastest growing commodities
- Becoming increasingly more available
- A preferred fuel
- Multiple different sources of supply

Source: BHP Billiton; Wood Mackenzie; BP Statistical Review .

Technology has led to greater supply



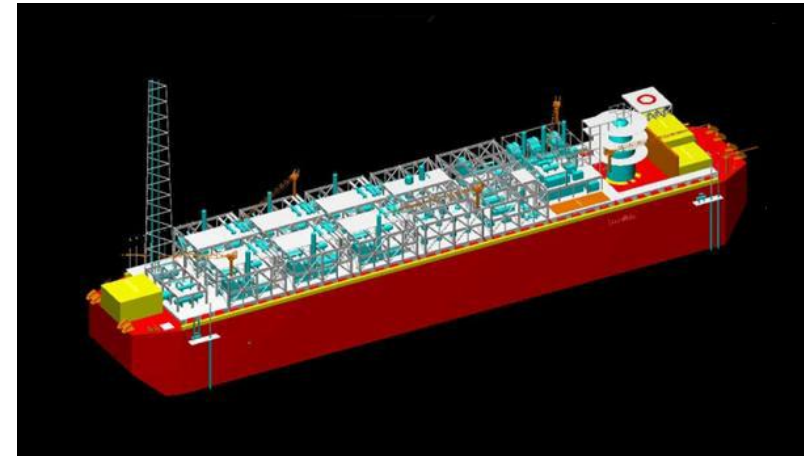
Subsea high-rate completions / production facilities



Directional and horizontal drilling



Multi-stage fracking



Floating LNG

BHP Billiton Petroleum's worldwide gas activities



- Wide range of gas exploration and production activities
- Involved in all major gas technologies
- Western Australia gas continues to be an important investment area
- New Onshore US shale is a large, long term technology position

Technology and innovation have driven the phenomenal growth of gas in the US

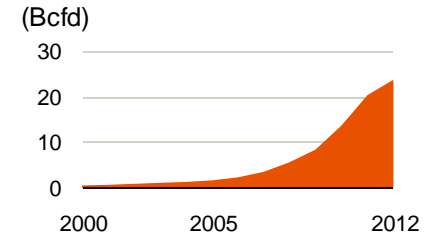
Development of downhole motors accelerates – key to directional drilling



Initial development of the Barnett shale play in Fort Worth, Texas



US shale gas production rapidly increases as technology continues to improve



1947

Early 1970s

1980s-1990s

Early 2000s

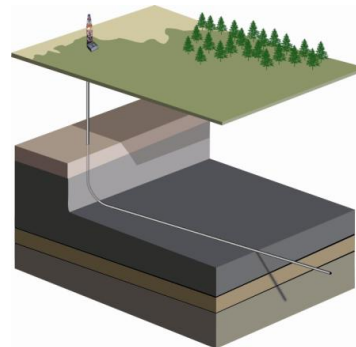
2002-2008

2010+

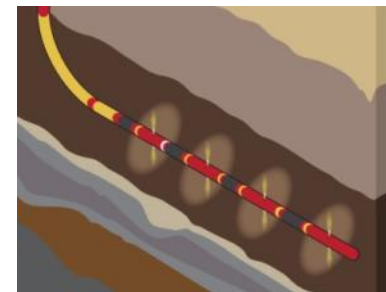
Hydraulic fracking first commercially employed in Grant County, Kansas



First commercial horizontal wells

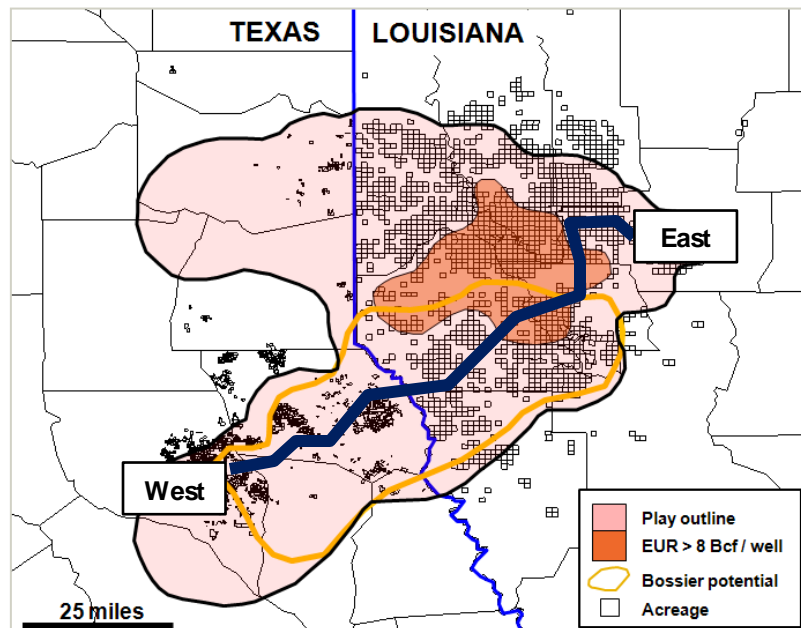
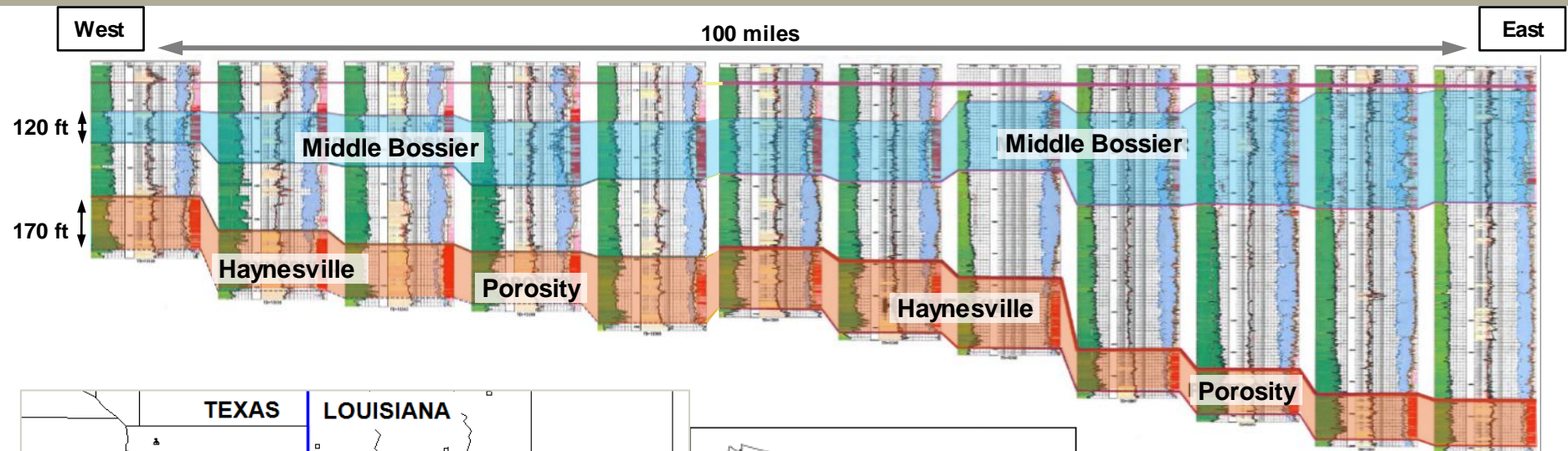


Multi stage fracking emerges for both vertical and horizontal wells



Source: US Department of Energy, EIA.

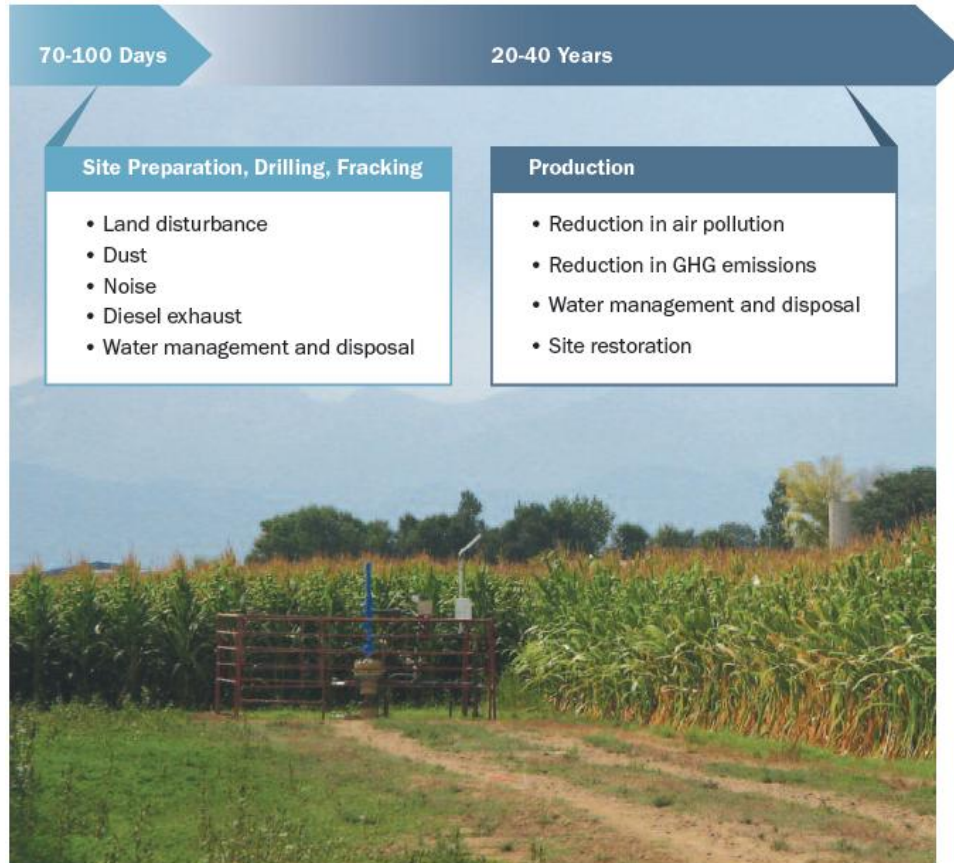
Shale reservoirs have low geologic risk and can be relatively uniform over long distances



- Continuous geological horizons
- Haynesville and Bossier mapped for 100 miles
- Depth, cost and rock properties vary
- Requires a long term approach on technology

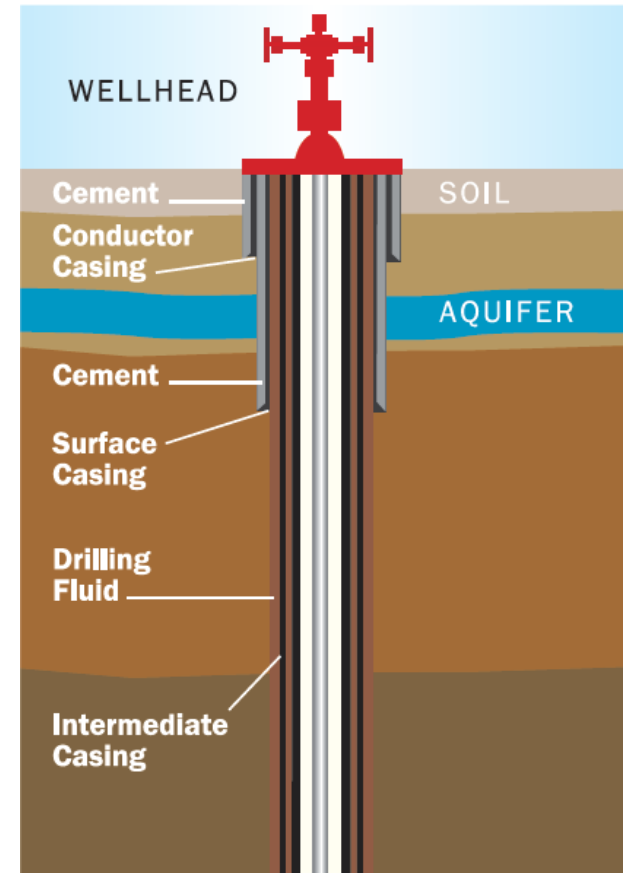
Shale production: minimizing effects on communities and the environment

Timeline and impacts for shale gas development and production (single well)



Source: IHS; CERA.

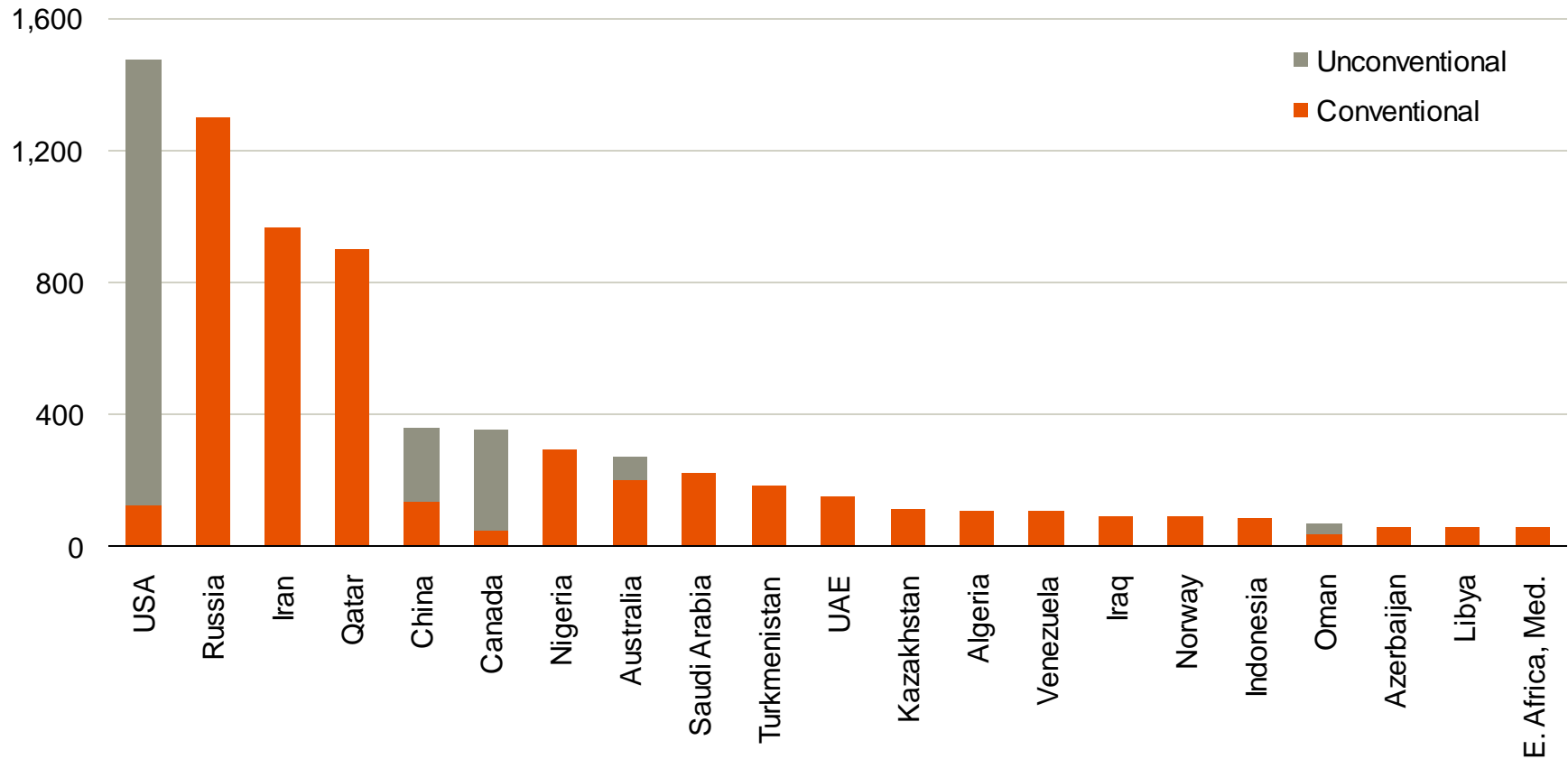
Typical surface casing design



Source: American Petroleum Institute.

Shale development has made US gas reserves the largest in the world

Natural gas resource estimate
(tcf)



Source: Wood Mackenzie; BHP Billiton.

Shale production can be modulated quickly and has much faster payback than offshore



Offshore	Feature	Shale
Yes	Geologic risk	No
5+ years	1 st production	Months
Years	Payback	Months
Limited	Flexibility	Significant
Limited	Expandability	Substantial



- Offshore oil and gas offers strong returns on a full development basis but expansion capability is limited post investment
- Shale developments offer strong returns on an individual well basis and are highly expandable in both the short and long term
- Current shale drilling and completion technologies recover very low amounts of the hydrocarbons in place
- Shale is ripe for a long term technology approach which few companies can execute

How times have changed

The shale revolution in the US

2005

Minimal gas production from shales

Declining US onshore activity

Stagnation in US petrochemicals and other energy-intensive industries

Coal expected to be the primary fuel for power generation

US expected to remain a net LNG importer

High natural gas prices seen as a drain on the US economy

Today

Haynesville alone supplied about 10% of US gas demand in 2011

~700 active shale rigs in 2011

Revitalised investment in petrochemicals and energy-intensive industries

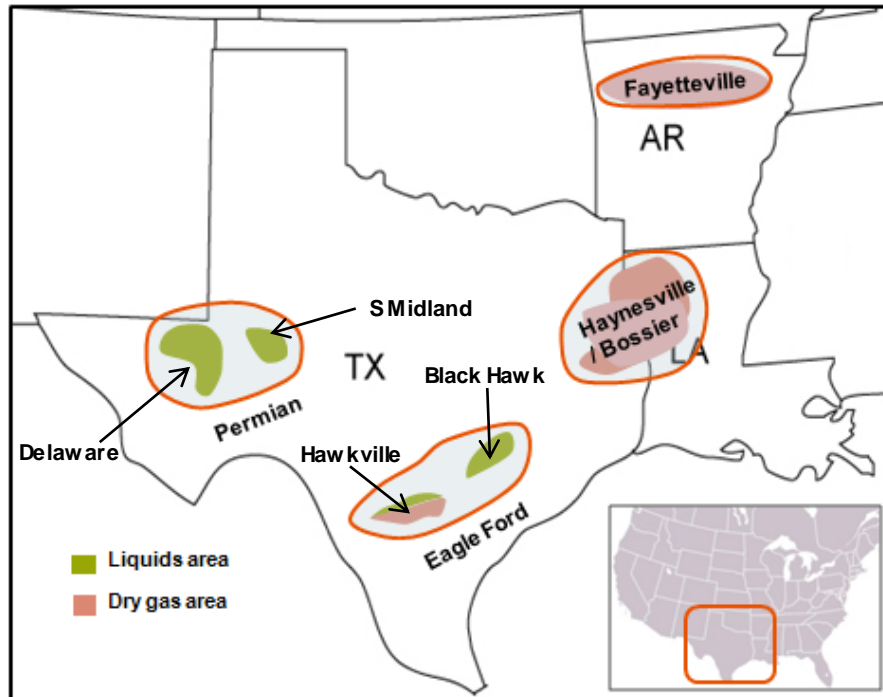
Natural gas seen as the fuel of the future to meet strict emission targets

LNG export project applications total 14 bcfd

US economic growth \$80 to \$100 billion in direct GDP impact and over 600,000 jobs

Source: Wood Mackenzie; PIRA; US Department of Energy; IHS Global Insight; Press reports.

BHP Billiton Petroleum has built a large, advantaged and flexible US shale position

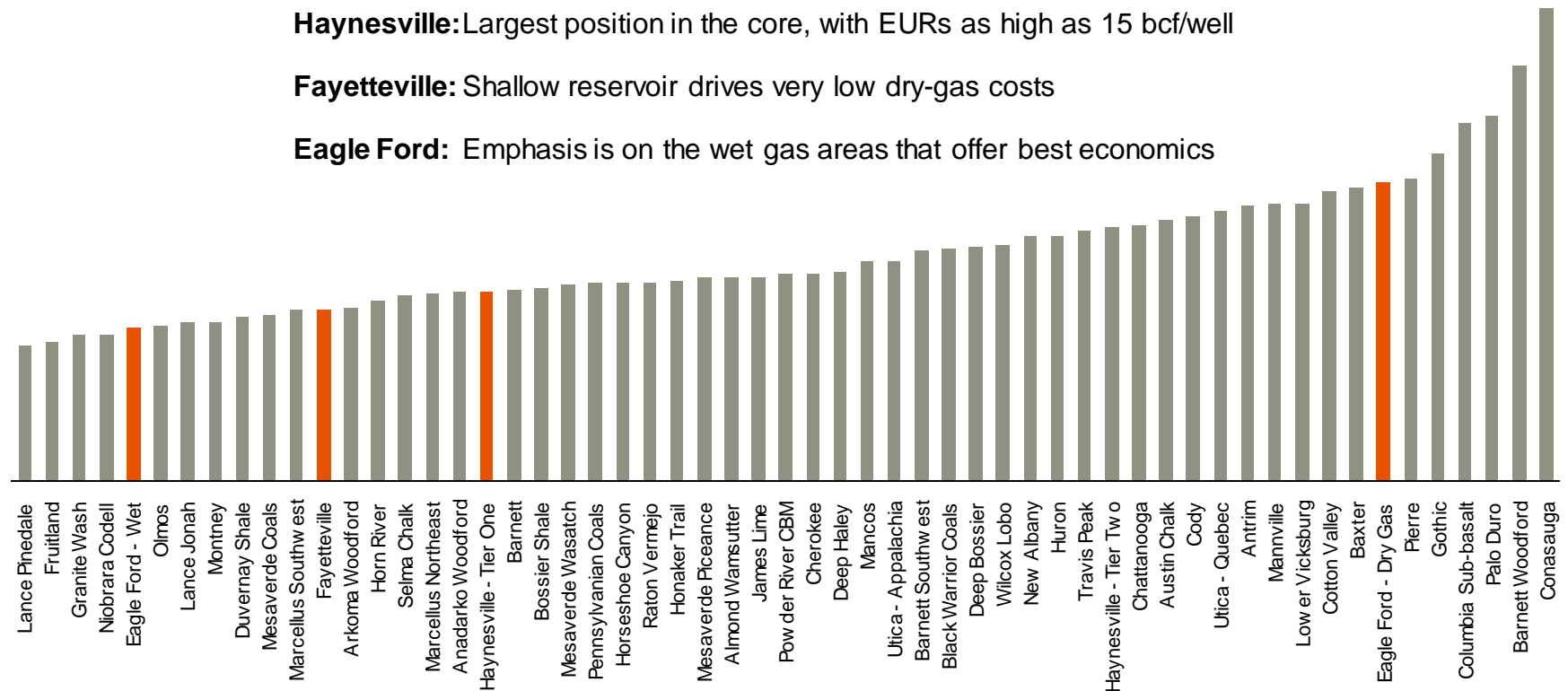


BHP Billiton Petroleum Onshore US

- Over 1.6 million combined net acres across Texas, Louisiana and Arkansas
- Recoverable resources of approximately 8.3 billion barrels of oil equivalent
- Four giant fields, with 50 year lives

BHP Billiton Petroleum's shale gas properties are among the lowest cost in the US

Comparative ranking of break-even wellhead cost for US unconventional gas plays, 2012 Gas-focused unconventional plays only



Source: Wood Mackenzie, 2012.

Near term actions

- Until gas prices rebound, scale back on gas drilling
 - Reduce rig count
 - Hold leases and opportunities
- But **shale gas is not the whole story**
 - Early estimates for BHP Billiton Petroleum's Eagle Ford and Permian acreage indicate **several billion barrels of liquids in place**
 - Our plans are large, targeting **recovery of about 1.5 billion barrels of liquids**- about **500 million barrels** more than what we reported in November last year
 - We currently assume **single-digit percentage recovery rates**
 - The industry has a record of **more than doubling recovery rates over time**, as technology improves, and **we expect to be a technology leader**
- So, a significant highly valuable **shale onshore liquids business**

“Texas tops finds from Brazil to Bakken as best prospect” Bloomberg, 23 March 2012

Eagle Ford

- Discovered by Petrohawk in 2008 – we hold a premiere position
- Rated as the lowest cost play among North American shales in the liquids rich regions¹
- Eagle Ford liquids-rich wells are among the highest return and fastest payback of any BHP Billiton investment

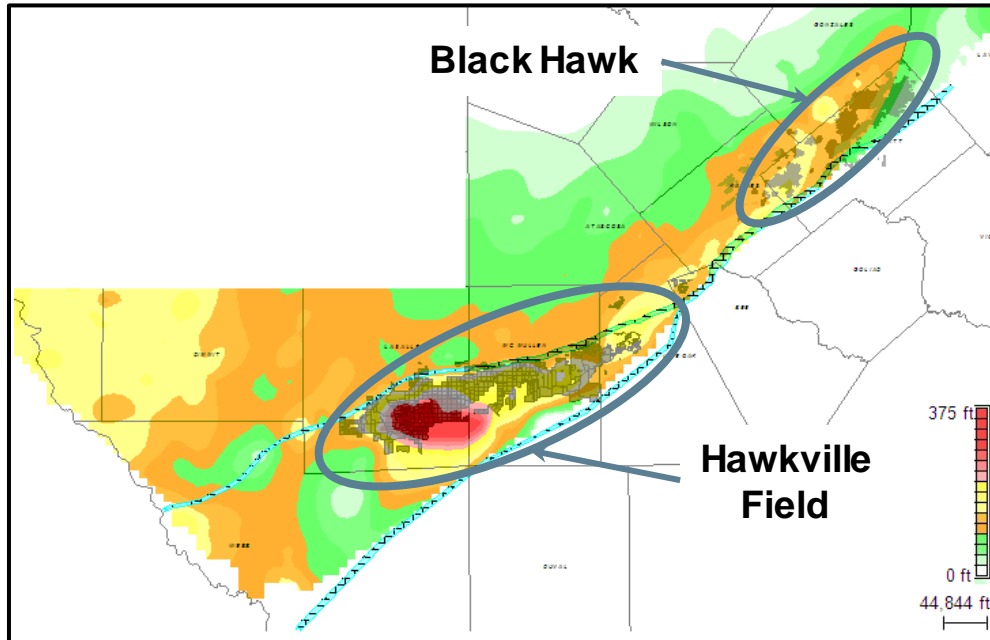


Bloomberg
23 March 2012

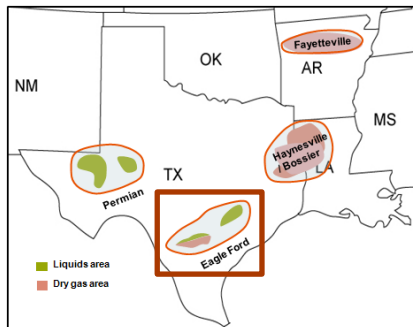
1. Wood Mackenzie.

Eagle Ford offers some of the highest economic returns among US shale plays

Isopach map net porosity >9%



- **Attractive product mix** of condensate and NGL, with current net production at **over 50% liquids**
- High liquids revenue component provides **strong rates of return; many wells in excess of 100%**
- Average **payback within the first year** of production
- Expect to grow to 300 Mboe/day, with **150 Mboe/day of liquids**
- **Potential for higher recovery factors** over time through reduced well spacing or improved technology



Still early in the Permian, but initial well results better than expected

Permian

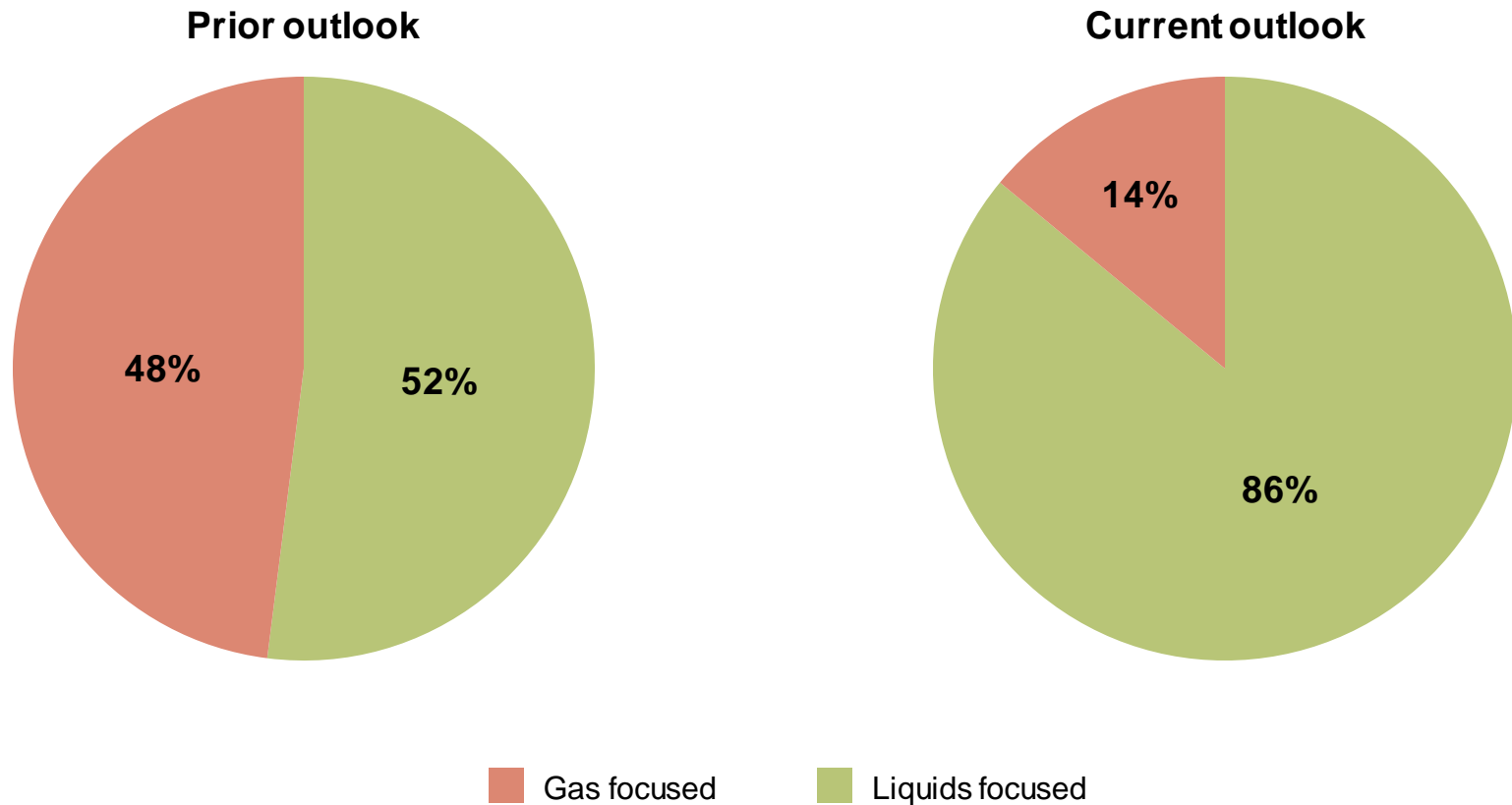
- Large undeveloped acreage position
- Targeting oil from multiple pay horizons
- Wolfcamp reservoir averages approximately 900 feet thick
- Current net production at about 80% liquids
- Goal is a second 100 Mboe/d business



Investor's Business Daily
15 March 2012

We are leveraging the flexibility of shales to respond to market conditions

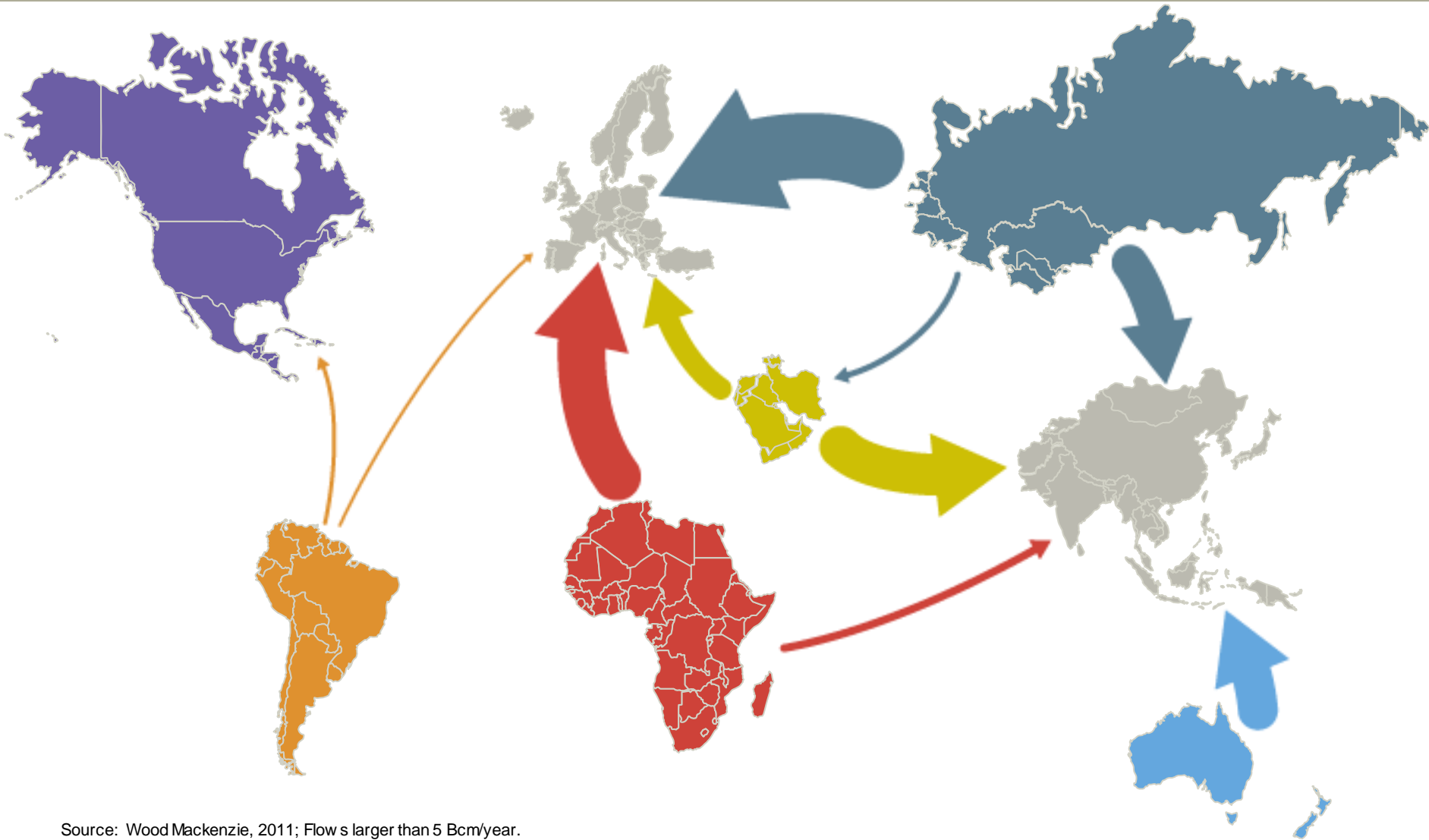
Average FY13 rig mix



Replicating the success of shales globally will require many key factors to align

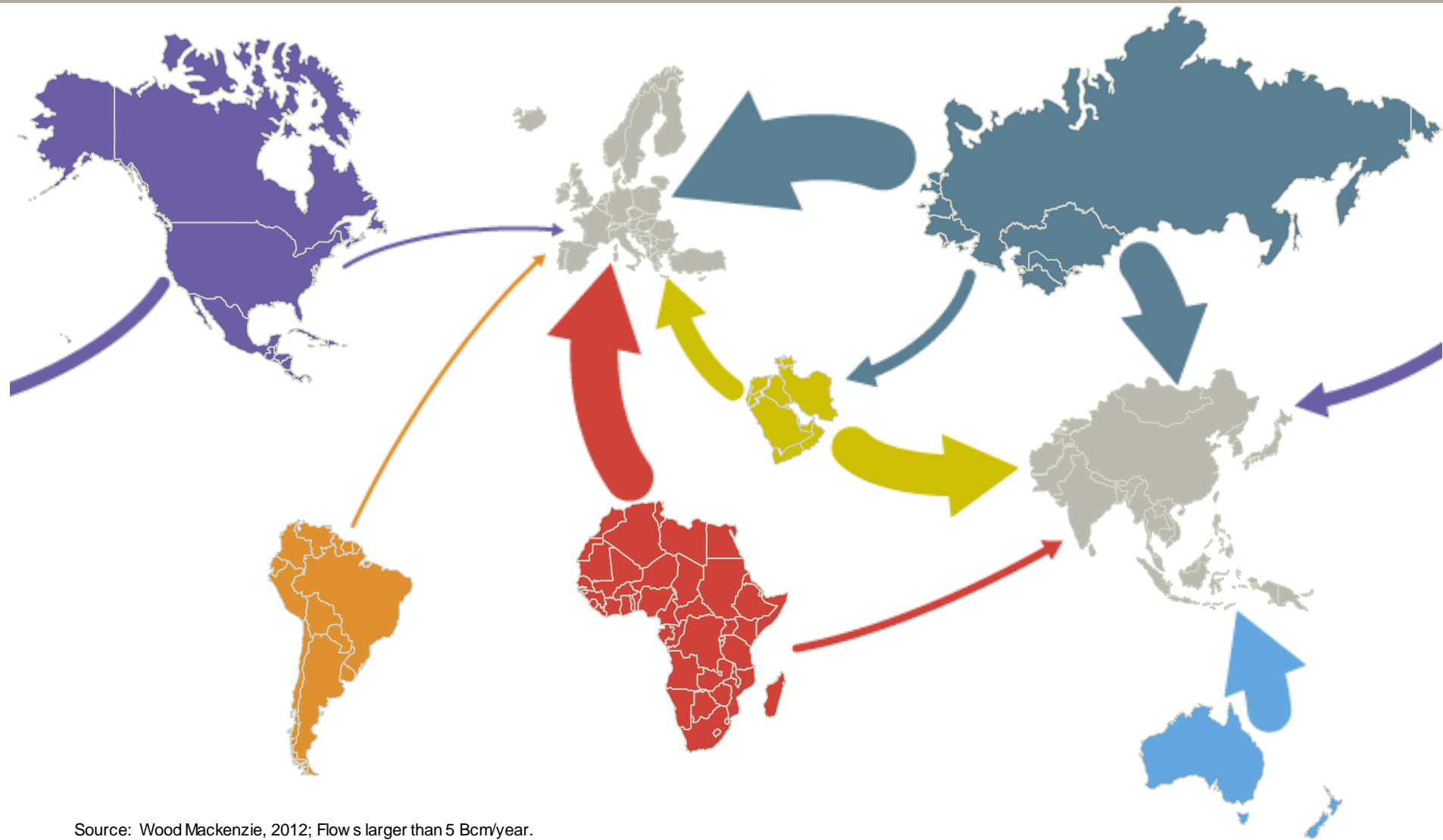


Major region-to-region gas flows 2010 outlook to 2025



Source: Wood Mackenzie, 2011; Flows larger than 5 Bcm/year.

Major region-to-region gas flows current outlook to 2025



Source: Wood Mackenzie, 2012; Flows larger than 5 Bcm/year.

In summary...

- **The world needs hydrocarbons.** The growth of shale technology over the last several years is an example of how innovation and technology can help satisfy that need
- Shale **liquids** developments are now **among the most attractive projects in the world**
- The **shale revolution** shows **how quickly and deeply things can shift**
- BHP Billiton's combination of **resource diversification, technology breadth, strong operational performance, solid financial position** and **long development horizon** provides us with a distinct advantage
- We intend to pursue both strategies – large conventional resources and unconventional shale resources
- Our **US** and **Western Australian** positions remain key parts of our longer term forward gas development plan



bhpbilliton

resourcing the future