

SHAPING THE FUTURE...THROUGH

INNOVATION

2011 SUMMER SEMINAR

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North American Gas Outlook

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2011 Summer Seminar

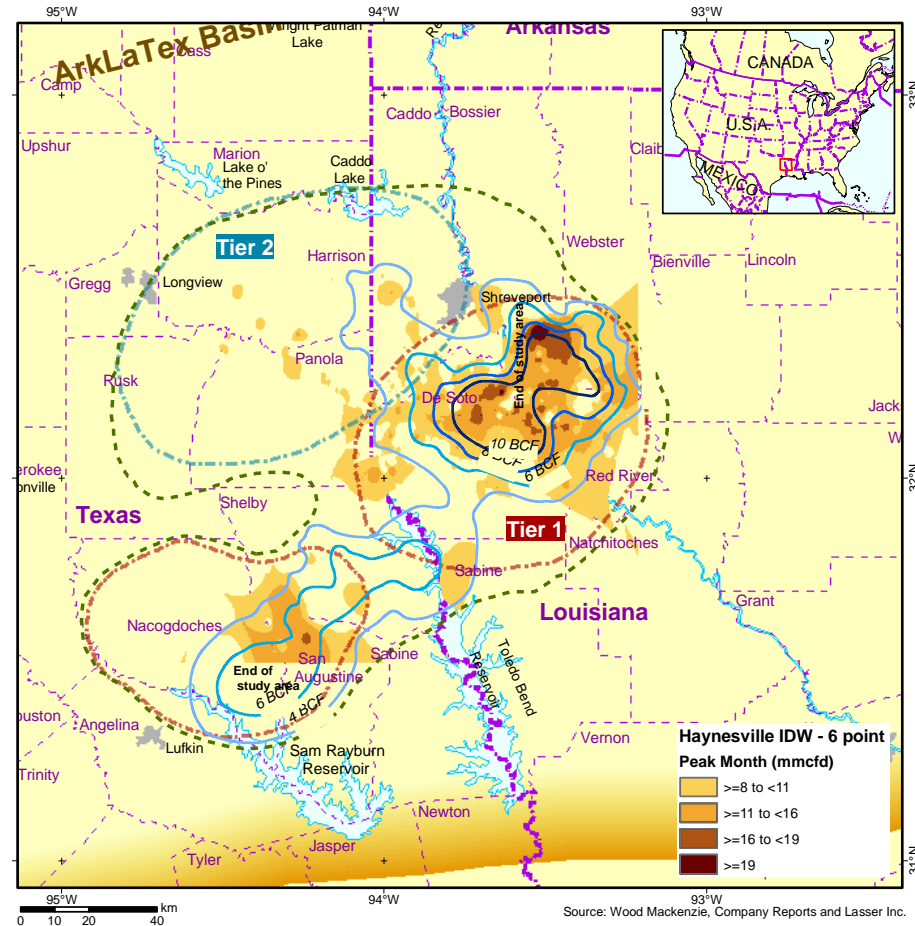
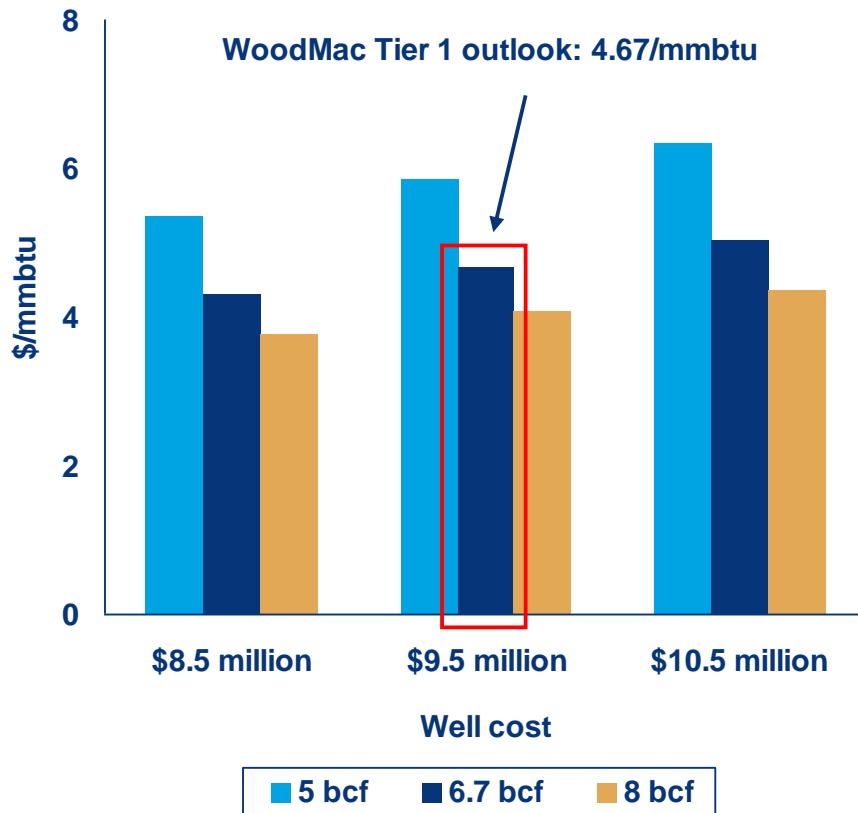
August 1, 2011

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Resource Doesn't Always Meet Expectations



Haynesville breakevens by well cost and size

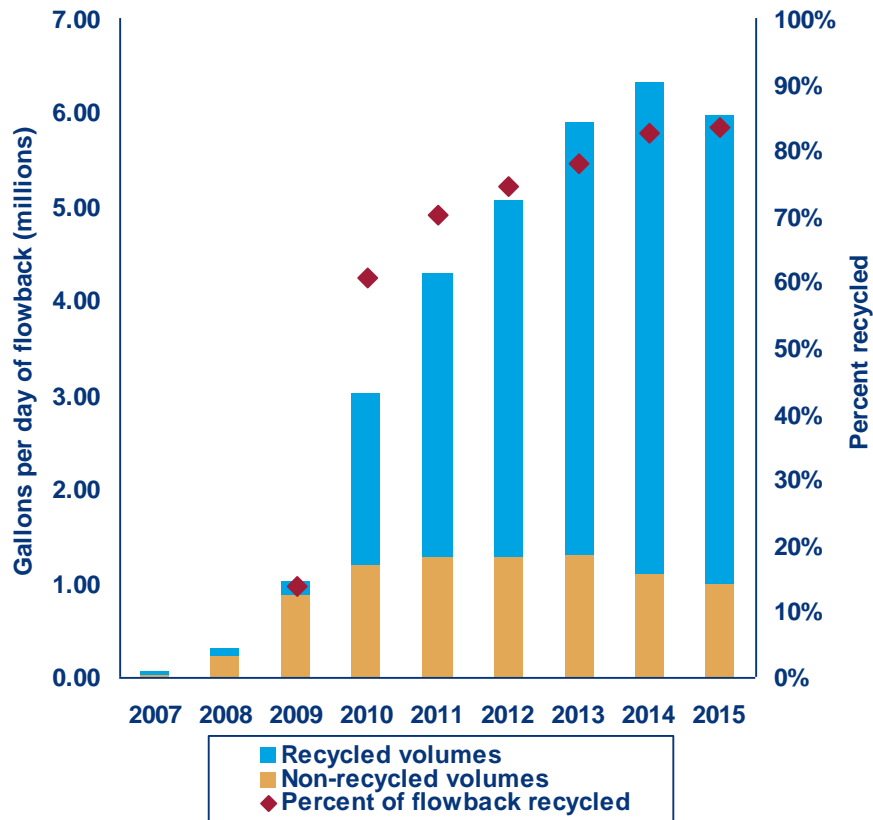


Sources: Wood Mackenzie (NAGS, Upstream Service, Corporate Service)

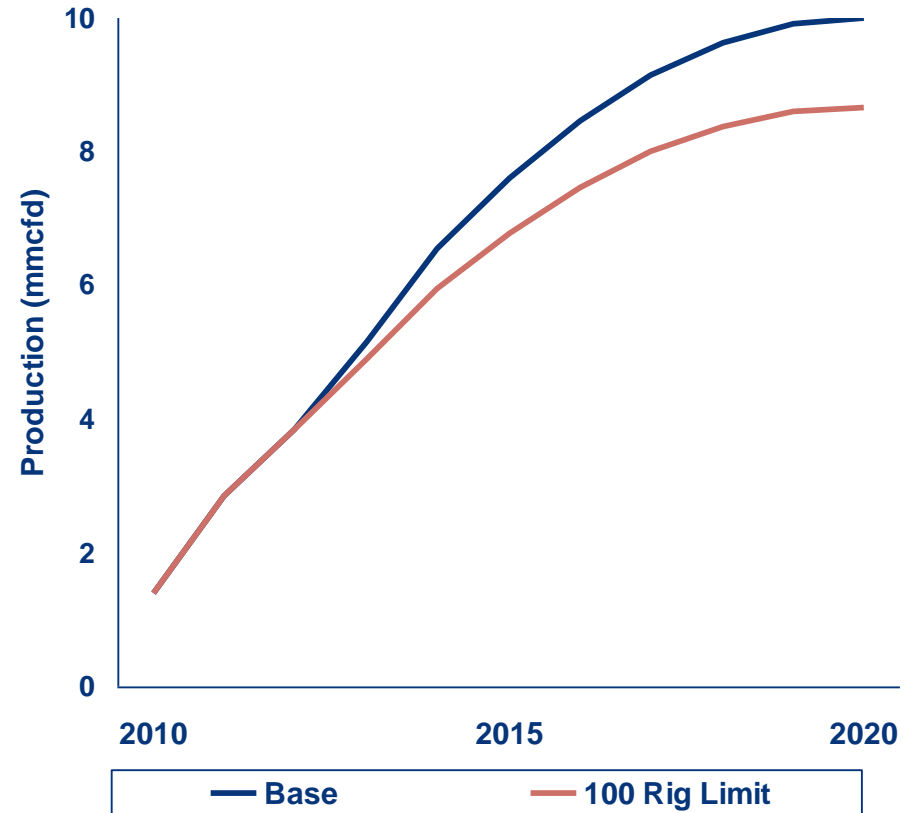
Environmental Issues Have Yet to be Resolved



Marcellus water recycling



Impact of a 100 rig limit in Marcellus



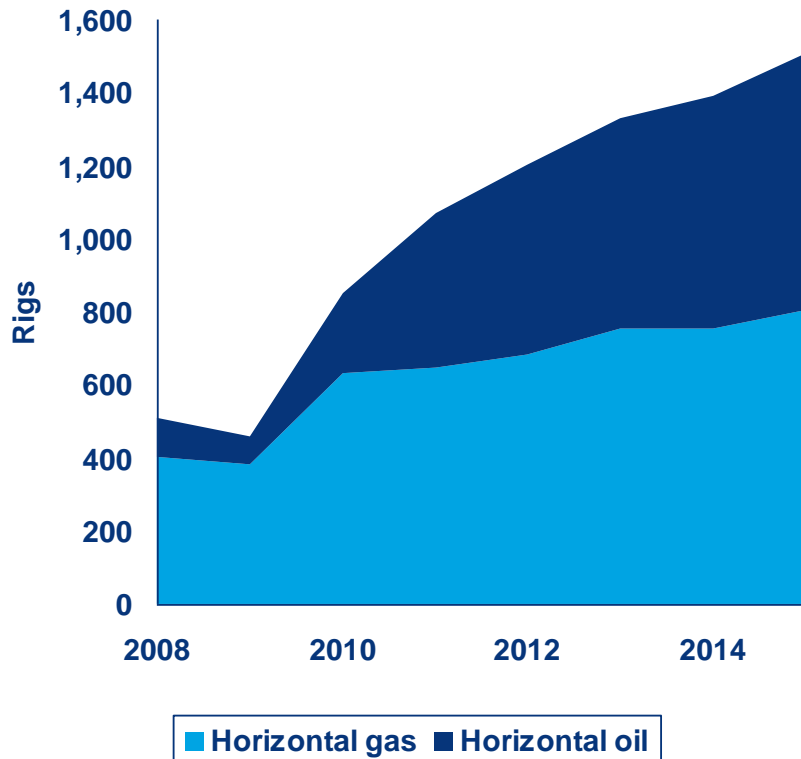
Source: Wood Mackenzie (North America Gas Service)

Competition With Oil and Liquids for Capital and Labor is Intensifying

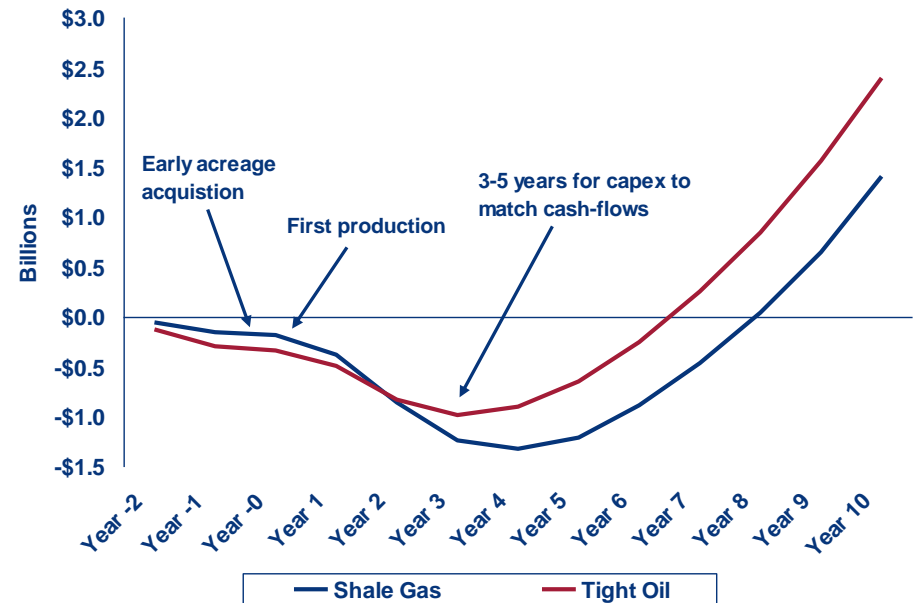


- Tight oil assets are cash flow negative for 3-5 years prior to assets turning cash flow positive
- Looser capital markets, allows for near-term debt and equity funding

Horizontal oil and gas drilling



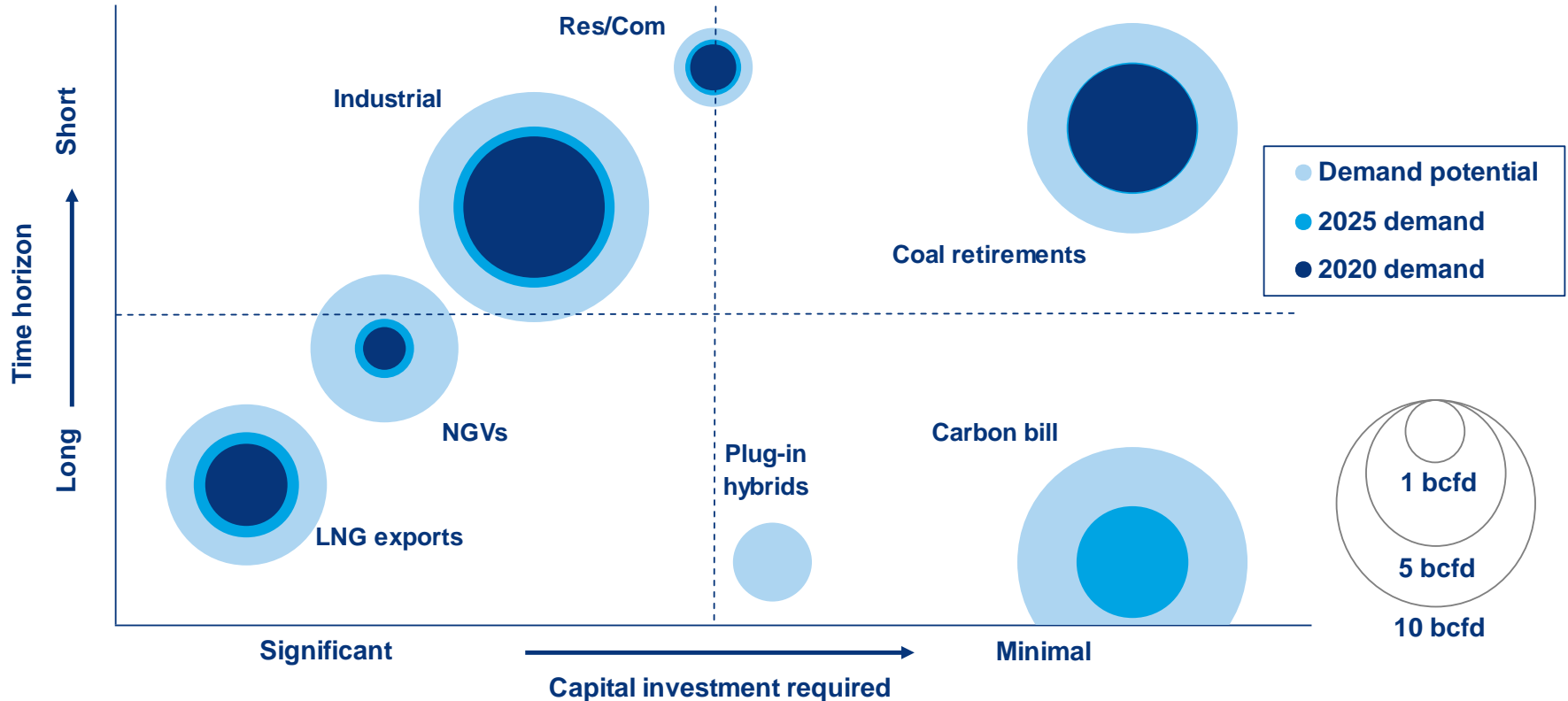
Average cash flows of unconventional development



Source: Wood Mackenzie (Corporate Service)

Sources: Wood Mackenzie (NAGS, Upstream Service, Corporate Service)

Numerous Markets are Competing for Gas...and Potential is Turning Probable



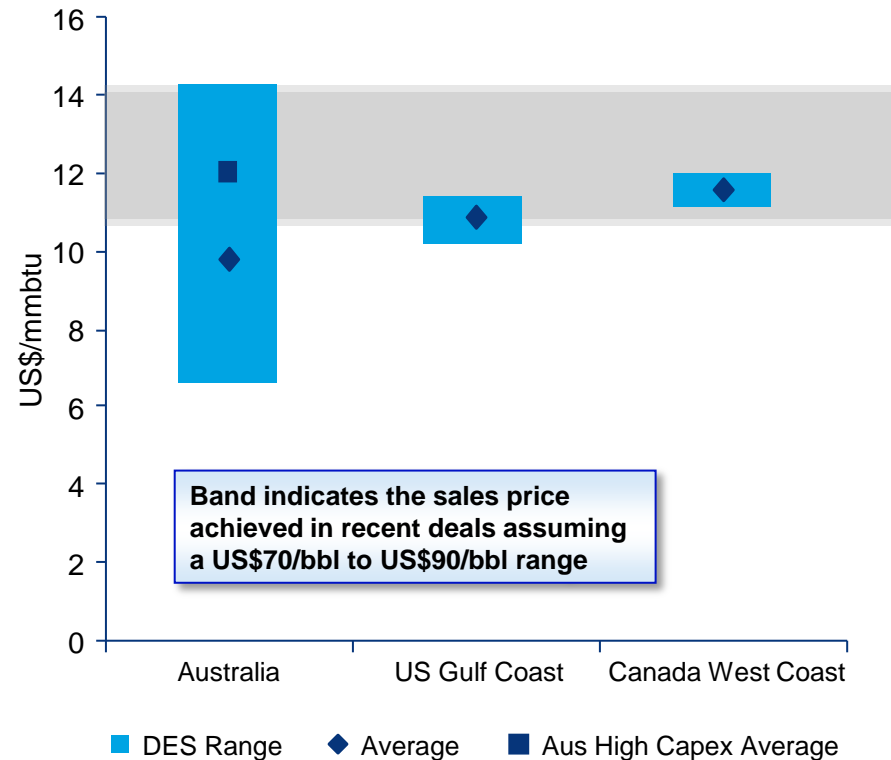
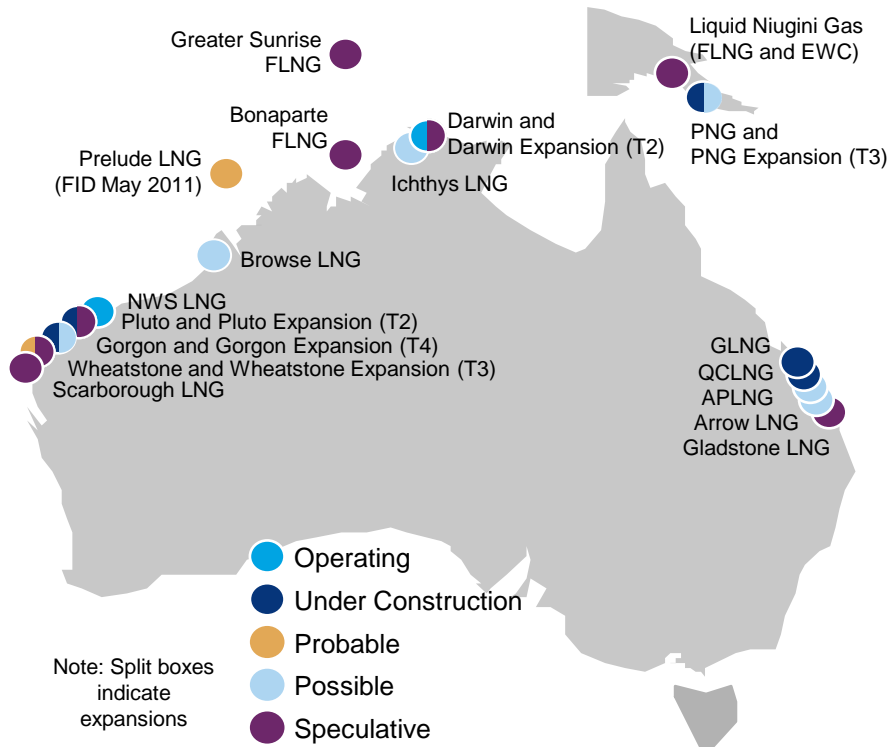
Source: Wood Mackenzie (North America Gas Service)

Fukushima has Tightened Pacific Basin Supplies... and North America Represents an Alternative to Australia



Australasia LNG projects – by liquefaction status

Range of costs for delivered LNG to Japan



Source: Wood Mackenzie LNG Tool, February 2011

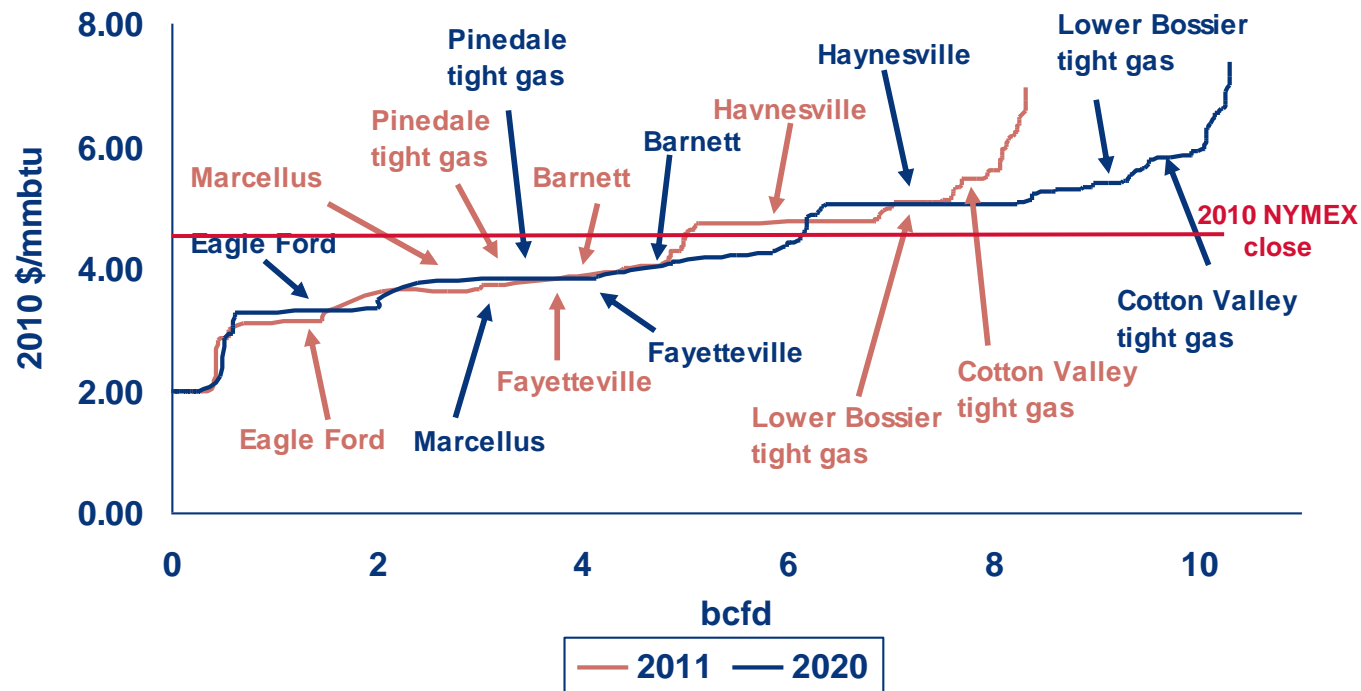
* Additional projects have been proposed, but currently have insufficient definition of concept or reserves

When the Market Demands Gas, Price Must Justify Drilling



- New-drill contribution up to 10.8 bcf/d from 8.6 bcf/d in 2011
- For 2010, nearly 40% of drilled supplies were out-of-the-money based on average NYMEX monthly close
- Higher demand growth would require more drilling
- Higher costs would shift curve up

US New Drill Natural Gas Supply Stack*



*Assumes development breakeven economics (not including land lease costs) at a 10% real IRR adjusted to a Henry Hub- equivalent price

Source: Wood Mackenzie

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Audience Response Question



If you are planning additional gas-fired capacity additions, what risk around future gas prices worries you most?

Audience Response Question



What level of long-term gas prices would cause concern regarding large-scale gas-fired capacity build?