



# AGIA

## **HCR 12 Presentation**

**March 19, 2009**

# Revisiting the AGIA Decisions



- Has anything happened since the AGIA decisions to justify revisiting them?
  - Commissioners' Findings and Conclusions
  - Passage of AGIA Itself

# The World Today



- How have things changed since the legislature approved the AGIA license?
    - Global economic downturn
    - Continued development of new unconventional (shale) gas supplies
    - Continued development of LNG import capacity
- 
- Increased likelihood of carbon regulation
  - Decrease in project cost indexes

# Pipeline Project Today



## Before AGIA

***No active major gasline projects***

## After AGIA

***Two active major gasline projects***

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# Commissioners' Findings and Conclusions



- Does Issuing the AGIA License Sufficiently Maximize Benefits to Alaskans
  - Net Present Value of anticipated cash flows to the state from the Project
  - Project's Likelihood of Success

# AGIA Analysis



- Net Present Value (NPV)
  - Natural Gas Price Expectations (2018 – 2043)
    - Supply vs Demand
  - Pipeline Transportation Costs (Tariff)
  - Project Schedule
- Likelihood of Success
  - Project Economics
  - Technical Development Plan
  - Financing Plan

# Changes in Context



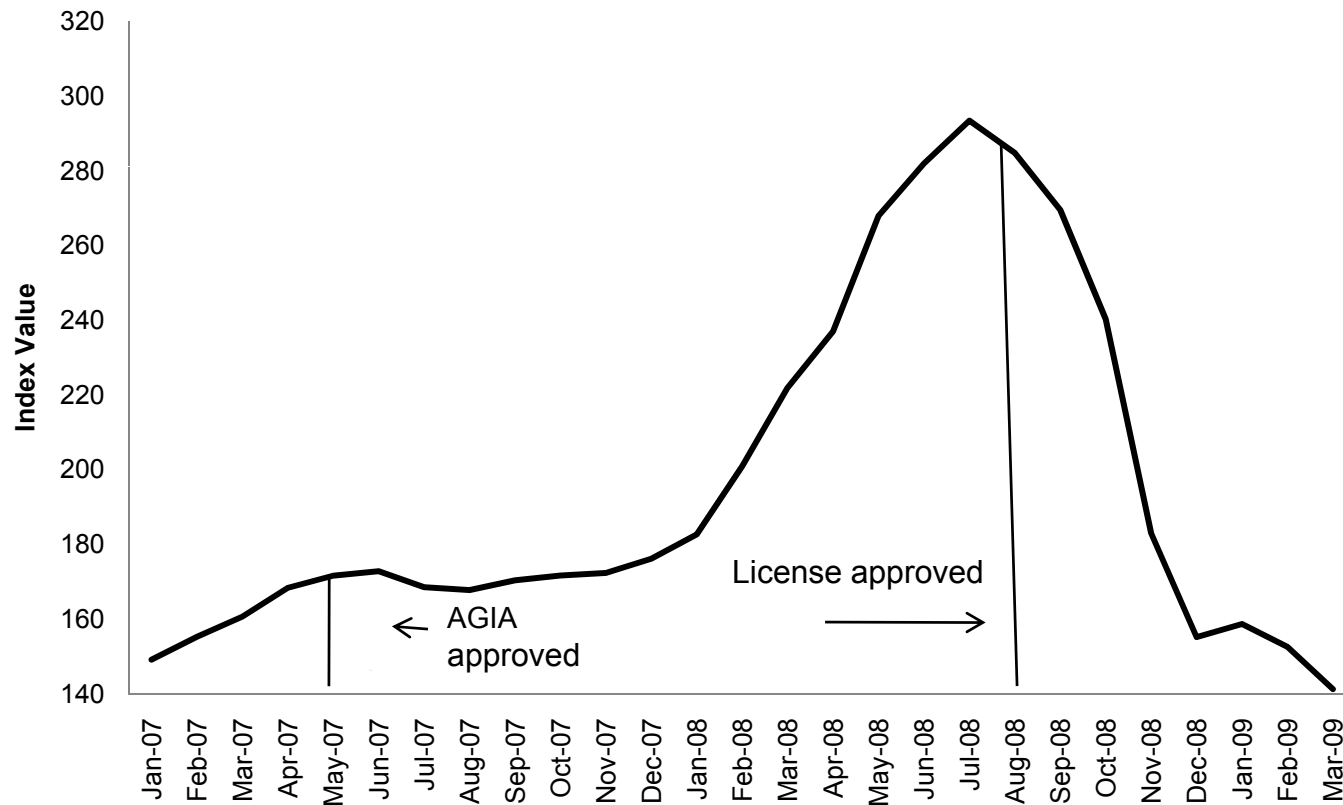
- How have things changed since the legislature approved the AGIA license?
    - Global economic downturn (Demand down in short term, financial markets tightened in short term)
    - Continued development of new unconventional (shale) gas supplies (supplies up?)
    - Continued development of LNG import capacity (supplies up?)
- 
- Increased likelihood of carbon regulation (demand up)
  - Decrease in project cost indexes (tariff down)



# Steel costs are falling



**Global Steel Price Index  
(CRU Price Index)**



## Which of These Changes are Truly New and Relevant?



- Additional shale and LNG supplies were factored into price assumptions.
- Alaska natural gas competes with both shale and LNG very well.
- Short term demand slow-down and tightened financial markets are currently not viewed as long term effects.
- Overall effect of changes is just as likely to be positive as negative.

## Findings - Development of New Unconventional Gas Resources



“US gas production ... is expected to grow in the near term at between 3 and 4 Bcfd from 2007 through 2011. This near-term growth and subsequent production gains stem from follow-on, unconventional plays in the Arkoma basin (gas shale) and in the Rockies and ArkLaTex basins (tight gas).”

- Findings and Determination; Appendix N – *Briefing paper on Wood Mackenzie Long Term Outlook (pg. 1)*

“Black & Veatch expects near-term production growth in the Rockies and shale plays to offset declines in the Gulf Coast and other Lower 48 production basins.”

- AGIA Findings and Determination; Appendix G1 – *AGIA NPV Report* (pg. 88)

## Findings - Technological Advancement on Development of Shale and other Gas



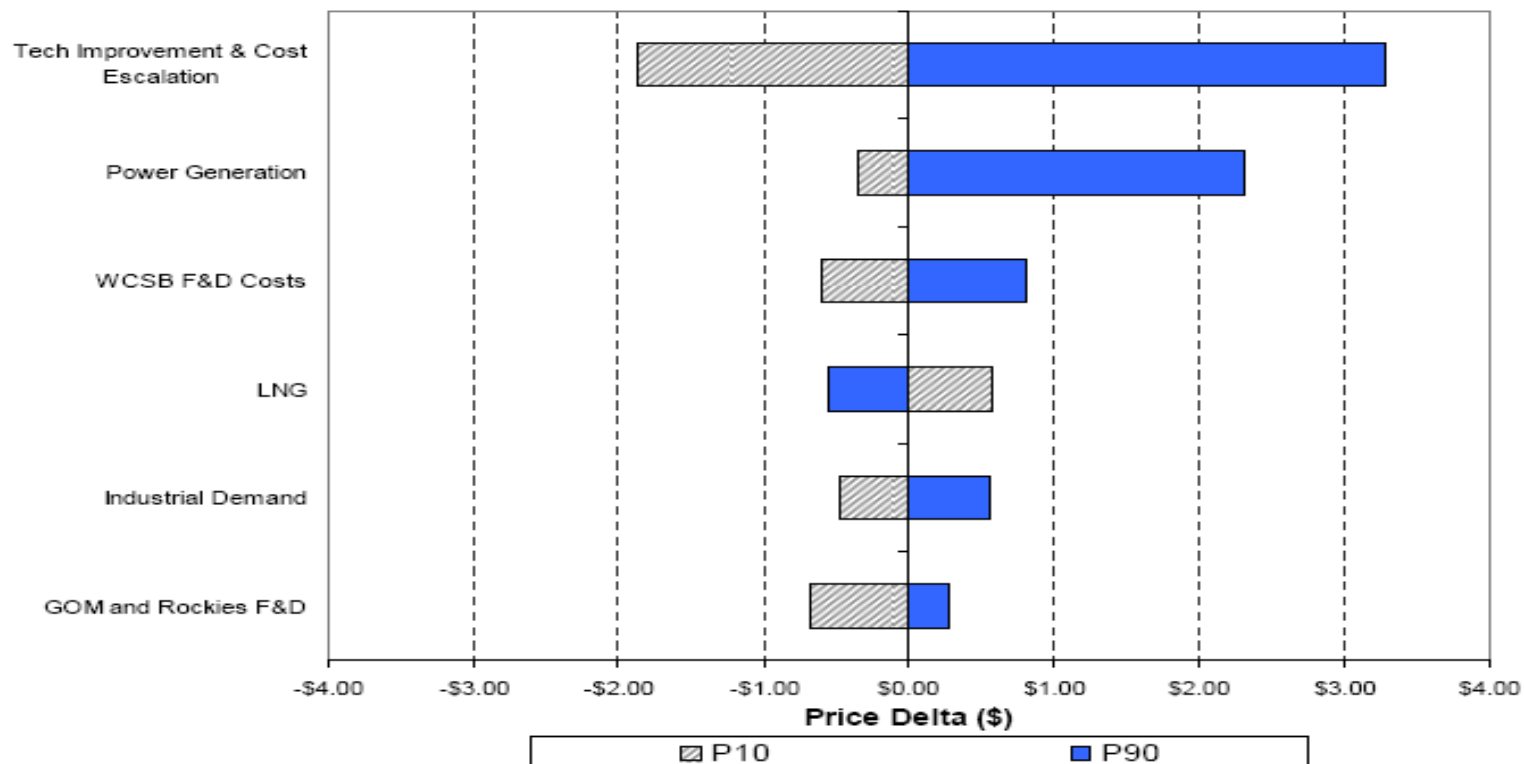
Additional technological innovation was assumed as part of the AGIA analysis

“Black & Veatch identified the following fundamental market factors and assumed an uncertainty range for each factor: F&D cost at WCSB, F&D cost at Rockies and GOM, LNG import volumes, power generation demand and industrial demand in the U.S. and Canada and ***technical innovation***. The uncertainty range of each factor is generated from a log-normal distribution.”

# Findings - Technological Advancement on Development of Shale and other Gas



**Figure 4-28: Impact of Fundamental Drivers on AECO Price 2022 (Nominal \$)**



Illustrates the P10 and P90 price impact of technological improvement and cost escalation, along with the comparable probabilistic outcomes resulting from new power generation, F&D costs, LNG imports, and changing industrial demand

Source: AGIA Findings and Determination; Appendix G1 – *AGIA NPV Report*

# Findings - LNG



- Extensive analysis on global LNG markets was presented in the Findings document.
  - Findings and Determination, Chapter 4
  - Appendix I
  - Appendix R2
  - Appendix R3
- Also, the North American price assumptions included the expectation of significant growth in LNG imports

# Findings – LNG Import Capacity Expansion



“Wood Mackenzie assumes twelve new LNG receiving facilities with aggregate capacity of 12 billion cubic feet per day (Bcfd) for North American imports will be in service between 2008 and 2017. LNG imports are assumed to grow at a strong average annual rate of 13%, rising from 2.1 Bcfd in 2008 to 17.0 Bcfd or about 23% of total US Demand in 2025. By 2017, the four existing receiving facilities currently serving North American LNG imports will account for only about 35% of total imported LNG.”

- Findings and Determination; Appendix N – *Briefing paper on Wood Mackenzie Long Term Outlook (pg. 2)*



## LNG – Import Capacity Does not Mean More Imports



LNG import volumes have experienced little net change since the legislature approved the AGIA license

### **Total US LNG Import Volumes**

July 2008: 31,019 mmcf

December 2008: 30,708 mmcf

# Which of These Changes are Truly New and Relevant?



- Additional shale and LNG supplies were factored into price assumptions.
- **Alaska natural gas competes with both shale and LNG very well.**
- Short term demand slow-down and tightened financial markets are currently not viewed as long term effects.
- Overall effect of changes is just as likely to be positive as negative.

# Alaska Gas vs Shale



- Because Alaska Gas will likely have a lower cost basis when it gets to the North American market, it can be profitable at a lower price and displaces shale gas rather than the other way around.

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# Long-term vs Short term Outlook



**Jim Mulva, Chairman and CEO ConocoPhillips,**  
**March 13, 2009 - *Petroleumworld.com***

*"Costs are coming down pretty dramatically," (Mulva) said. "When we say defer, we're not talking years, we're talking months, quarters, maybe up to a year."*

*Speaking about the Denali Alaska gas pipeline project, proposed last June by ConocoPhillips and BP, Mulva said President Barack Obama has identified the 4 Bcf/d project as a means of reducing US dependence on foreign oil.*

*The pipeline would bring North Slope gas down to a pipeline in Alberta for transport to the Lower 48 states. "We know it's going to get far more federal attention," he said. "Obviously, Alaska would like to see it go."*

*Mulva repeated the partners plan a 2010 open season for gas deliveries; first gas deliveries are eyed for 2019.*

*While current gas prices have led ConocoPhillips to cut back on its Canadian operations, Mulva discounted the low prices as a roadblock to the pipeline project's development.*

*"You can't look at gas prices today," he said. You have to look at prices 10 years from now."*

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# Revisit AGIA Itself?



- Does AGIA Restrict the State's Ability to Meet In-State Gas Needs?
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# In-State Gas and AGIA Treble Damages



Nothing in AGIA prevents or restricts the legislature from providing preferential royalty or tax treatment, or from granting state money, for the purpose of facilitating the construction of a gasline that will serve in-state needs (Maximum expected to be needed is 250MMcf/d).

# In-state Gas and AGIA Treble Damages



- An in-state needs bullet line would not trigger the treble damages clause, even if it carried North Slope gas.
- 500 MMcf/day far exceeds any reasonable projections for total natural gas consumption in state during the foreseeable future.

# Revisit AGIA Itself?



- Does AGIA Restrict the State's Ability to Meet In-State Gas Needs? (NO)
- Are the Underlying Purposes of AGIA still valid?

# Purposes of AGIA



- Move the Project Forward with an Enforceable Timeline
- Obtain a Lower Tariff
- Obtain Open Access Provisions
  - Predictable Low-cost expansion for Explorers
- Provide Leverage for the State
  - Maximize Chance of Getting a Pipeline
  - Minimize Need to Provide Excessive Concessions

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# Shale Gas and Carbon Emissions Regulation

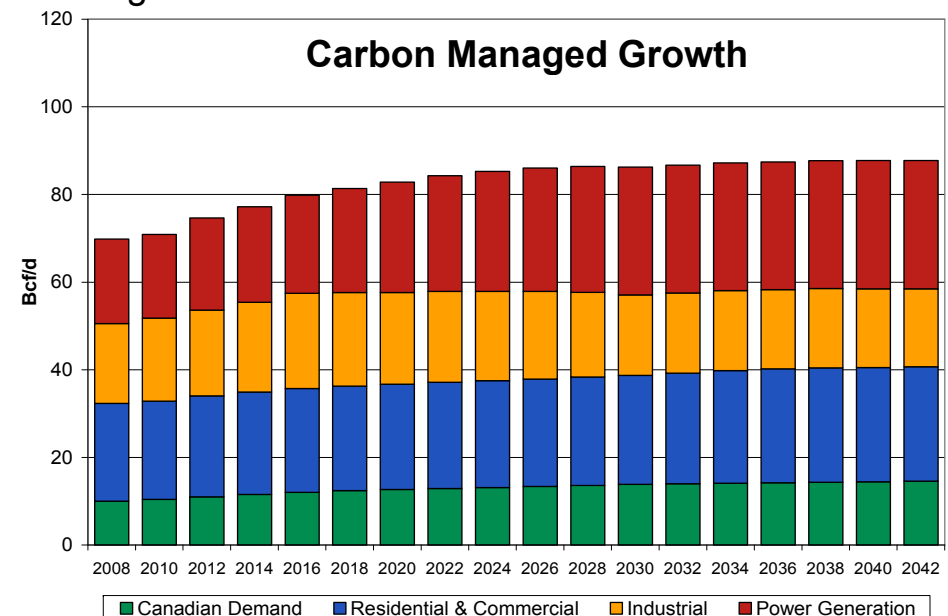
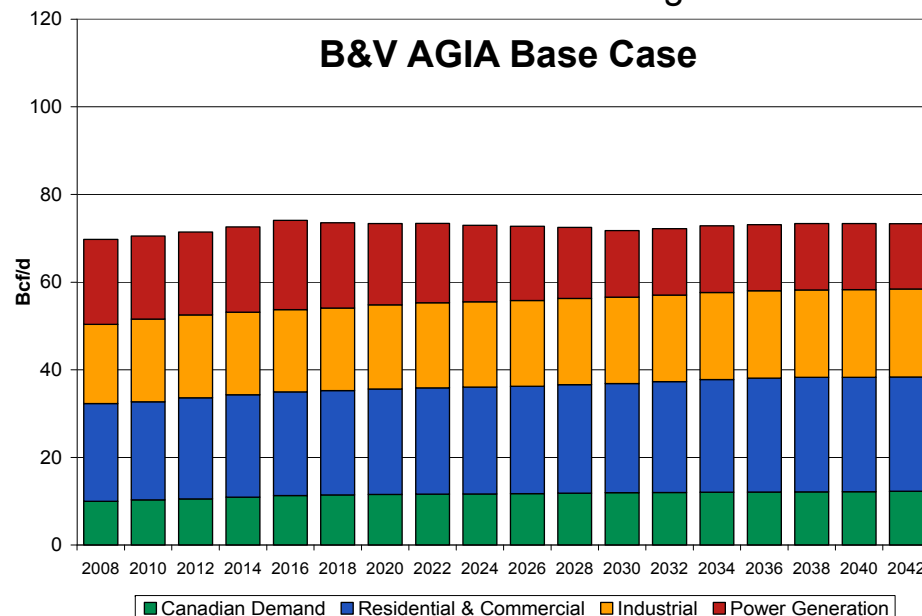
**Mark Myers**  
**March 19, 2009**

# Impact of Carbon Regulation on Natural Gas Demand



## In a Carbon Managed Growth case, demand is 14 Bcf/d more than the B&V AGIA Base Case

- Policies and legislations designed to curb Green House Gas could reduce dispatch and construction of coal-fired generation facilities in favor of natural gas fired facilities, resulting in demand increase from the power sector in the US
- All resources, including renewables, nuclear and IGCC with CCS and gas fired combined cycles are all needed to meet electric demand growth. Gas demand from the power sector will grow from 19 Bcf/d in 2008 to 29 Bcf/d by 2030, with a CAGR of 2%
- Total demand in US lower 48 states is 12.1 Bcf/d higher than BV's AGIA Base Case by 2042. Canada demand is 2.3 Bcf/d higher in the Carbon Managed Growth case

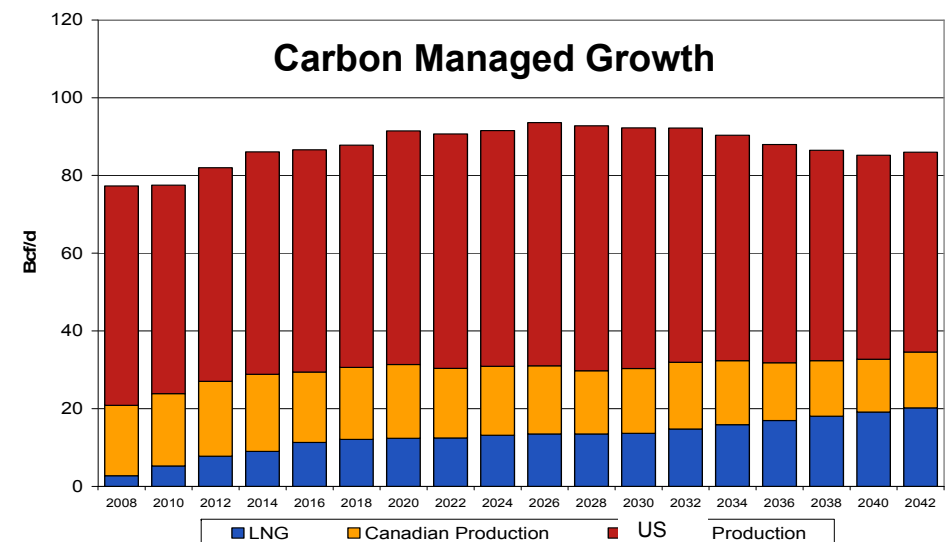
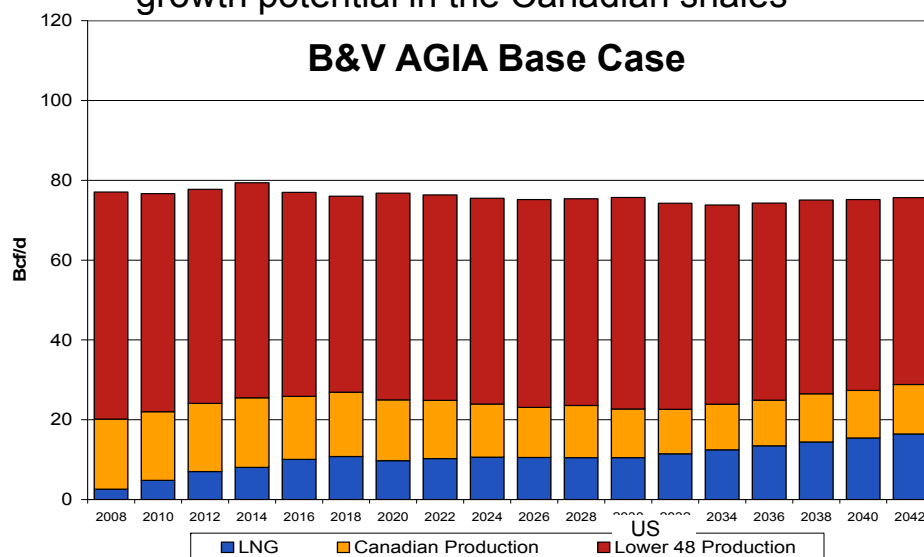


Source: Black & Veatch Analysis



## Additional LNG imports and more unconventional productions from the US lower 48 will meet demand growth

- Additional LNG imports will be needed to meet the demand growth; 6.4 Bcf/d by 2042 in the Carbon Managed Growth scenario
- US Production will average 58.3 Bcf/d from 2022-2042 in the Carbon Managed Growth case, which will be 7.8 Bcf/d higher than the B&V AGIA Base Case. Recent developments in shale discoveries in Haynesville and Marcellus indicate greater production potentials from these unconventional resources. The production growth can be considered as a proxy.
- Canadian production continues to decline in both cases. In the Carbon Managed Growth case, Canadian production is 3.7 Bcf/d higher than in the B&V AGIA Base Case, which may approximately reflect the growth potential in the Canadian shales



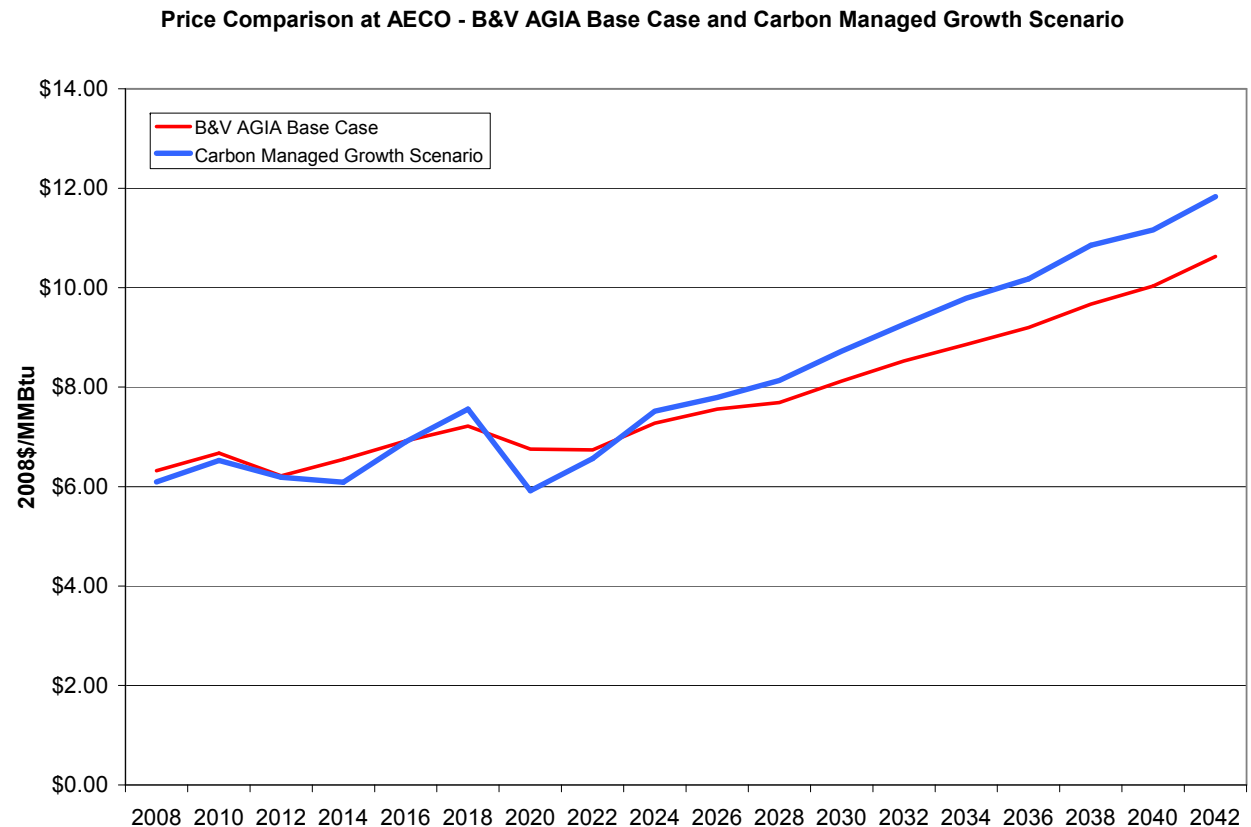
Source: Black & Veatch Analysis



# Impact of Carbon Regulation on AECO Price Forecasts



- The Carbon Managed Growth case has sufficient supplies from North America to meet the high demand from both unconventional production and slightly higher additional LNG volumes
- North American gas price is projected to have a higher price path than in the AGIA base case



Source: Black & Veatch Analysis