

Key Challenges Facing Government and Industry A 10 Year Forecast

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Findings

- Gas supply/demand balance will remain tight.
- Gas consumption will grow, largely as a result of growth in gas-based power generation.
- “New frontier” gas supplies are necessary.
- Gas prices likely to average between \$4 and \$5 per MMBtu.
- High levels of gas price volatility will continue.
- Weather alone can swing gas prices by a couple dollars.
- The gas industry must address contracting and risk allocation issues in order to attract the capital for accessing needed supply.
- ***Industry, government, consumers and environmentalists must work together to allow facilities to be built.***

It is in everyone's interest!

Pipeline Construction

- To satisfy the growth in gas demand, over \$61 billion in investment in pipeline and storage is needed by 2020. (constant 2003 dollars)
 - Of that \$18 billion is associated with arctic gas projects.
 - Approximately 45,000 miles of pipe is required.
 - 35,000 of new pipe and 10,000 miles of replacement pipe.
 - Approximately 7.8 million horsepower of compression.

Investments are needed to ensure that gas is delivered with reliability, safety, security and environmental performance.

- Expectations continue to grow

Reliability

- Customer requirements are changing
 - Geographic and commercial demands are shifting
 - Gas must be delivered when and where it is needed
 - Price volatility creates uncertainty
- Quality
 - New sources of gas supply pose significant operational challenges

Safety Challenges

- Public expectations have changed
 - Public is more informed and sophisticated
 - Public is more risk adverse and expect continuous improvement

Risk = Probability × Consequences

- Industry has more control over probability
 - Focus efforts on causes that have the greatest impact on perceived risk
- Communication
 - Lower perception of risk and raise public confidence

Environmental and Siting

Industry faces increasing scrutiny from an informed public and stakeholders do not recognize the value of pipelines in their everyday lives.

- Emissions limitations are being driven to below 1 gram levels with increasing pressure to show continuous compliance
- Regulations are integrated - multi-pollutant approaches
- Mandatory reporting of GHG emissions are likely to increase significantly over the next decade
- **Pipeline siting and construction is challenged by a cumbersome approvals process**
 - Industry needs public policy makers and the public to support additional pipeline infrastructure construction

Infrastructure Challenges

- Existing

- Extending the life, reliability, and productivity of existing infrastructure
- Getting more capacity
- Increasing efficiency
- Continuous improvement

- New

- Expectations are higher
- Requires high quality and performance
- Meets or exceeds public level of expectation

Conclusion

Government and Industry need to
work hand in hand to meet the
challenges