



# ONEOK Partners Interstate Pipeline Customer Meeting

Donald Santa, President & CEO  
Interstate Natural Gas Association of America

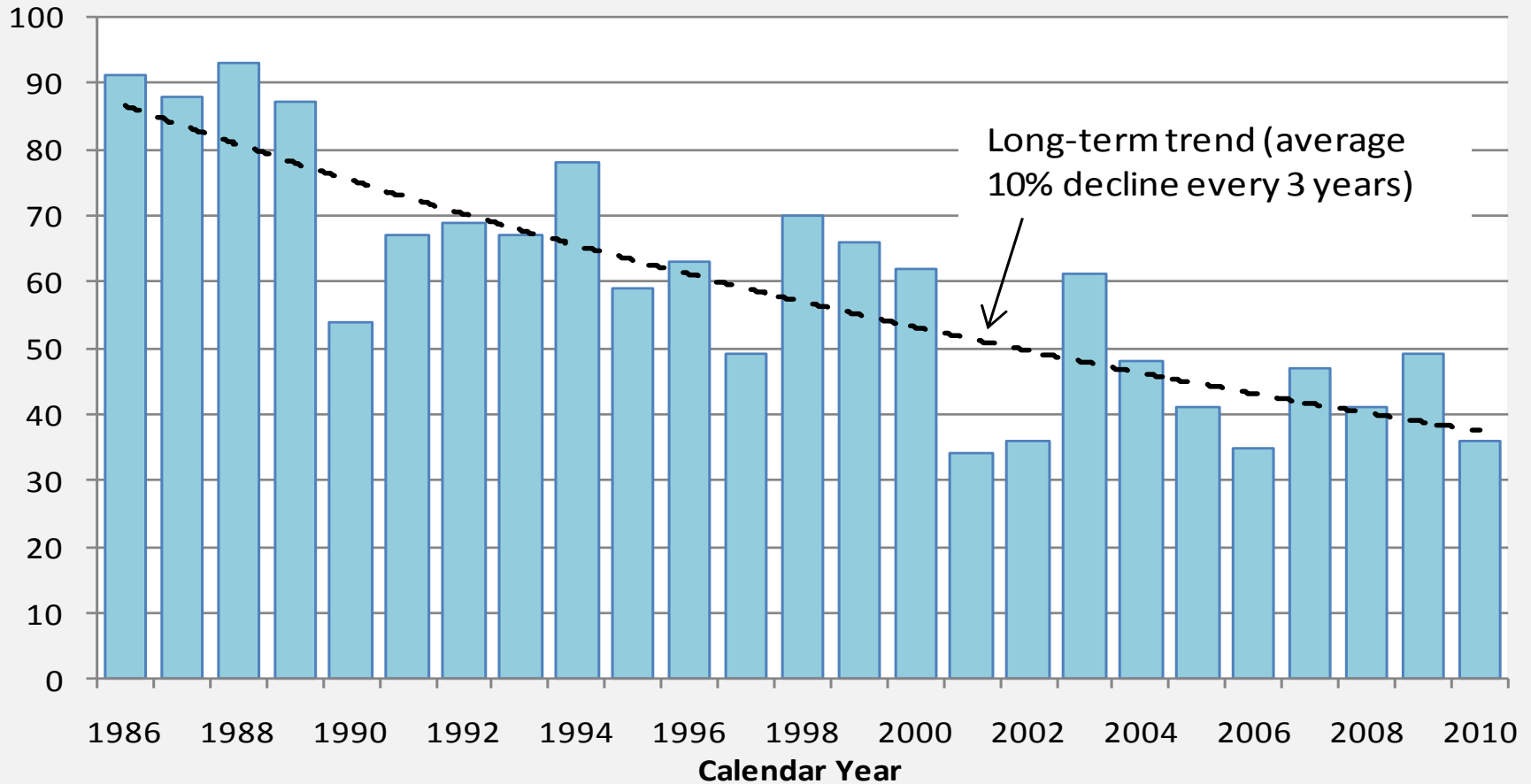
Lake Forest, IL  
May 10, 2011



# Key issues facing the natural gas transmission industry

- Pipeline safety
- Legislative issues
- Supply-demand dynamics and the impact on pipeline and storage infrastructure
- Gas-electric interdependency issues
- General FERC issues

# Pipeline Incidents w/Death or Major Injury (1986-2010)



Data: DOT/PHMSA Pipeline Incident Data (as of Jan. 19, 2011)

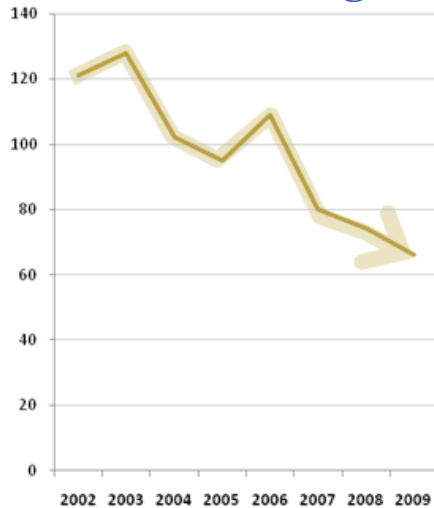
# Transmission Pipeline Leaks are Declining

## Risks to Pipeline Safety (per ASME B31.8S)

- Excavation / Third Party Damage
- External Corrosion
- Internal Corrosion
- Manufacturing Flaws
- Construction Flaws
- Outside Forces
- Operator Error
- Equipment Failure
- Stress Corrosion Cracking

*2002 – 2009: Significant progress made to reduce leading risks*

### Excavation Damage Leaks



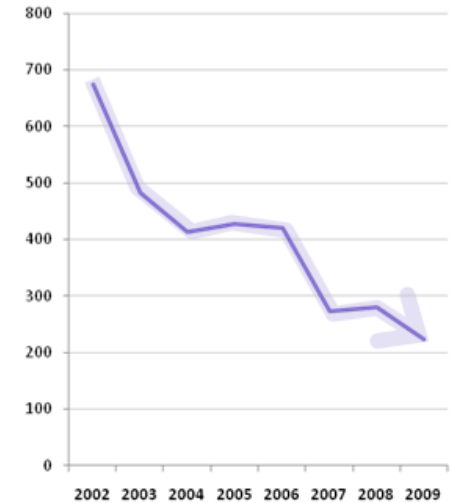
**54% reduction**

### Corrosion Leaks



**46% reduction**

### Material & Weld Leaks



**65% reduction**

Source: PHMSA web site, annual report data submitted by all PHMSA regulated operators (INGAA and non-INGAA) for 2002-2009, onshore only.

# INGAA Guiding Principles of Pipeline Safety

- **Our goal is zero incidents** - a perfect record of safety and reliability for the national pipeline system. *We will work every day toward this goal.*
- **We are committed to safety culture** as a critical dimension to continuously improve our industry's performance.
- **We will be relentless in our pursuit of improving** by learning from the past and anticipating the future.
- **We are committed to applying integrity management principles on a system-wide basis.**
- **We will engage our stakeholders** - from the local community to the national level - so they understand and can participate in reducing risk.



# Where Do We Go From Here?

## Holistic Approach to Pipeline Safety

- **Reauthorize Pipeline Safety Act**
- **Stronger state and federal excavation prevention measures**
- **Pipelines and Informed Planning alliance (PIPA)**
- **Industry**
  - R&D
  - Shared lessons learned
  - Best practices
  - Invest in next generation of workers and safety tools
  - Make safety culture an integral part of the pipeline industry day in and day out.

# Highlights of S. 275, The Pipeline Transportation Safety Improvement Act

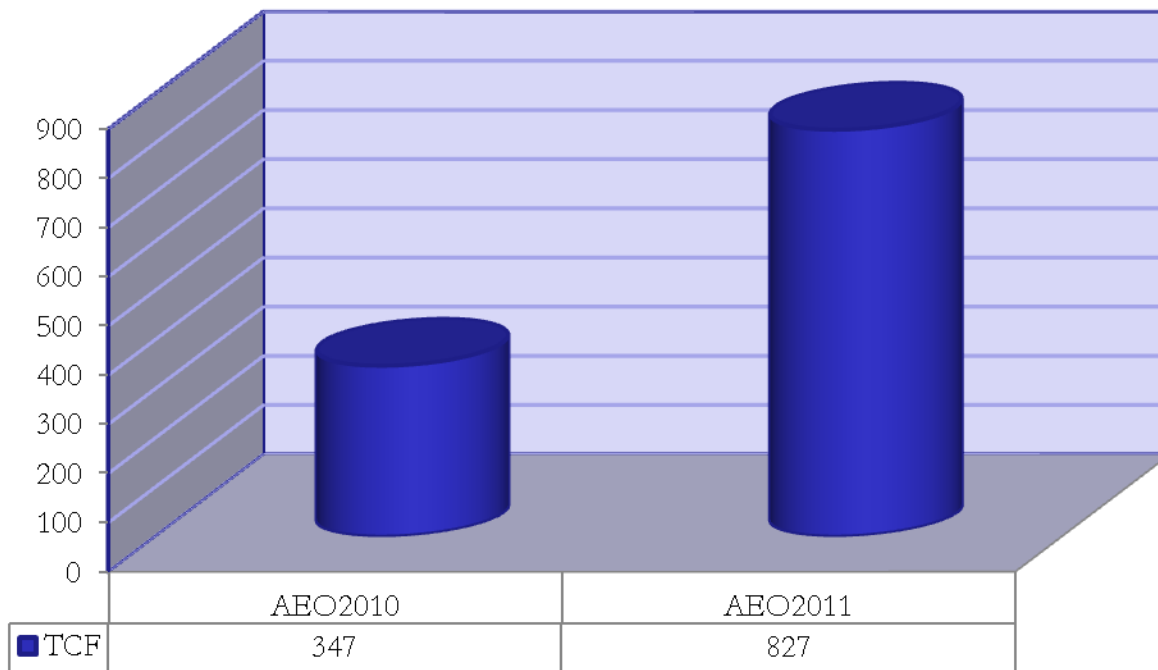
- The bill, sponsored by Senators Lautenberg and Rockefeller, cleared the Senate Commerce, Science and Transportation Committee on May 5, 2011
  - Directs DOT to expand the current Integrity Management Program
  - Reauthorizes funding for the Department of Transportation's Pipeline and Hazardous Materials Safety Administration.
  - Eliminates exemptions from requirement to call "One Call" notification systems before excavating.
  - Directs DOT to develop new rules for using automatic or remote-controlled shut-off valves on new pipelines
  - Increases civil penalties for violating pipeline regulations
  - Requires new due process procedures for PHMSA enforcement actions
  - Requires verification of current pipeline MAOP through existing records or testing

# President Obama references natural gas in State of the Union



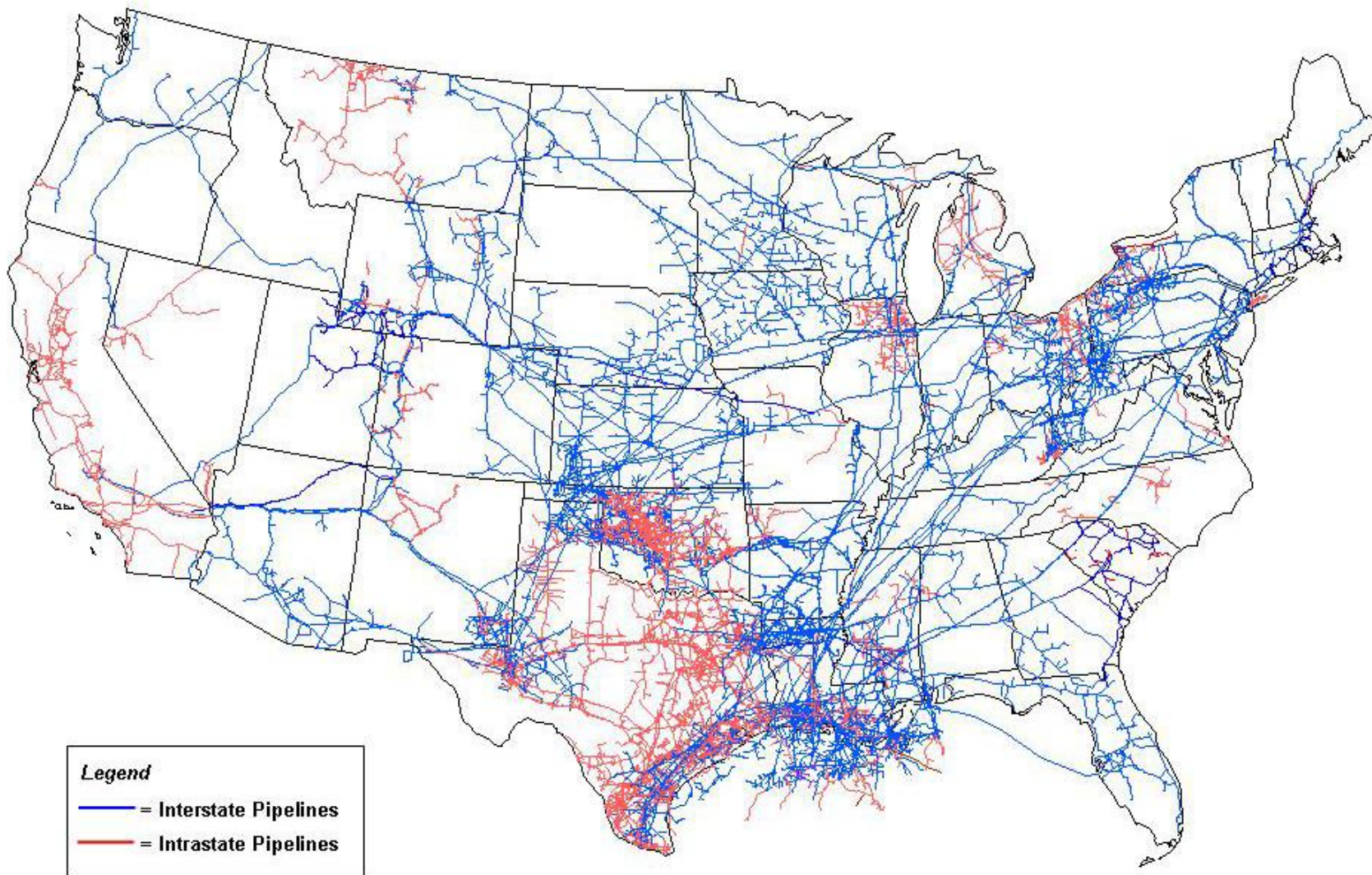
# Energy Information Administration Annual Energy Outlook doubles forecast for technically recoverable unproven shale resources

## Recoverable Shale Gas Resources



EIA more than doubled its forecast for technically recoverable unproved shale gas resource to 827 trillion cubic feet (as of January 1, 2009). That's 480 trillion cubic feet larger than AEO2010, reflecting additional information that has become available with more drilling activity in new and existing shale plays. The larger resource leads to about double the shale gas production and over 20 percent higher total lower 48 natural gas production in 2035.

# America's vast interstate gas pipeline system

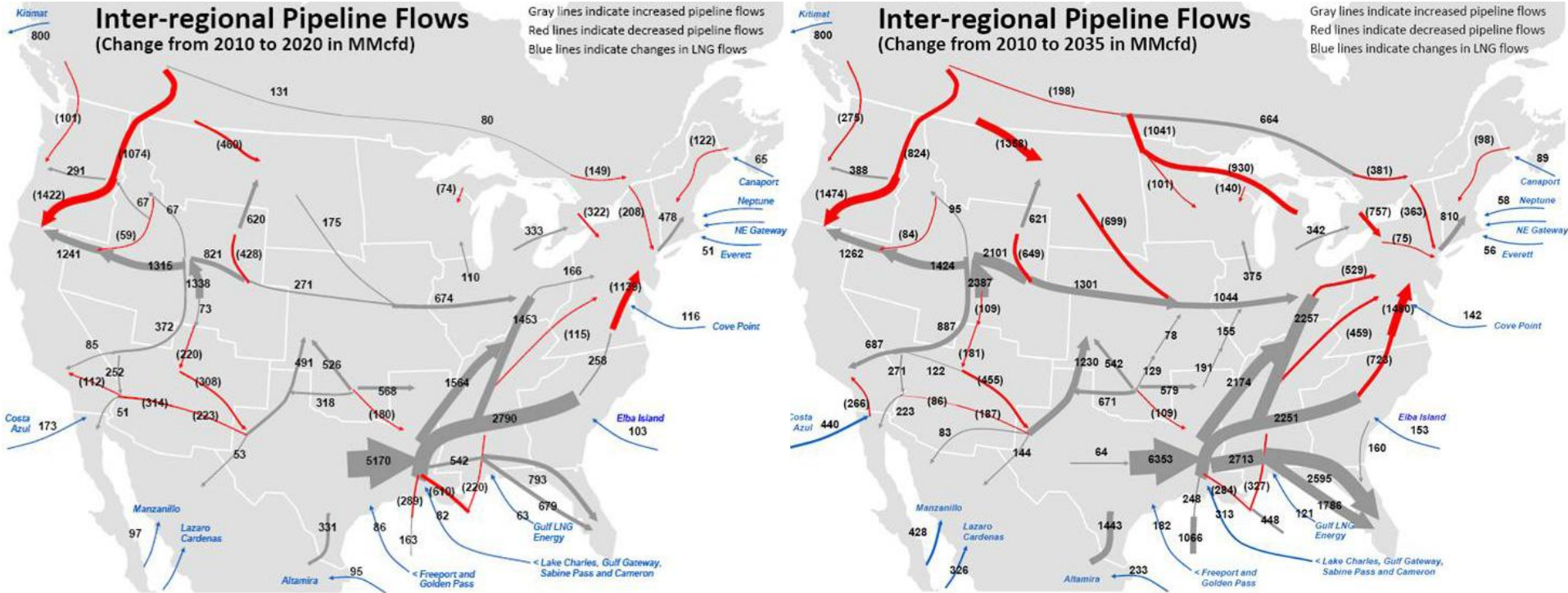


Source: Energy Information Administration, Office of Oil & Gas, Natural Gas Division, Gas Transportation Information System



# Interregional Pipeline Flows

## Change in Flow from 2010 in MMcfd



# Natural Gas Pipeline and Storage Infrastructure Projections Through 2035

- This midstream infrastructure forecast is the INGAA Foundation's bellweather report.
- Last updated in October 2009.
- Updated early because of keen interest due to the “shale gas revolution”
- Additional sponsors added
- Adding NGL infrastructure forecast
- Phase One completed; Final report should be ready at end of May
- Key Study Assumptions:
  - Natural gas prices rising to between \$6-\$7 by 2017.
  - Significant supply development and growth from shale resources
  - Doubling of natural gas demand in the power sector over the next 25 years

# Summary of Incremental Infrastructure Added in the Reference Case (from 2010)

	2020	2035	Average Annual
Inter-regional Pipeline Capacity (Bcfd)	27	40	1.6
Miles of Transmission Mainline (1000s)	14.8	33.8	1.4
Miles of Laterals to/from Power Plants, Storage Fields and Processing Plants (1000s)	6.0	12.6	0.5
Miles of Gathering Line (1000s)	136	348	13.9
Inch-Miles of Transmission Mainline (1000s)	436	973	39
Inch-Miles of Laterals to/from Power Plants, Storage Fields and Processing Plants (1000s)	131	277	11
Inch-Miles of Gathering Line (1000s)	524	1,317	53
Compression for Pipelines (1000 HP)	2,003	3,045	122
Gas Storage (Bcf Working Gas)	NA	589	24
Processing Capacity (Bcfd)	15.6	28.7	1.1

Preliminary results subject to change in Phase 2 analysis

# Cost of Infrastructure Added in the Reference Case (Billion\$ from 2010)

	Through 2020	Through 2035	Average Annual Expenditures
Transmission Mainline	\$47.6	\$128.8	\$5.2
Laterals to/from Power Plants, Gas Storage and Processing Plants	\$14.8	\$36.7	\$1.5
Gathering Line	\$16.5	\$51.0	\$2.0
Pipeline Compression	\$4.8	\$7.7	\$0.3
Gas Storage Fields	\$4.2	\$4.8	\$0.2
Processing Capacity	\$12.1	\$26.0	\$1.0
<b>Total Capital Expenditure</b>	<b>\$100.0</b>	<b>\$255.0</b>	<b>\$10.2</b>

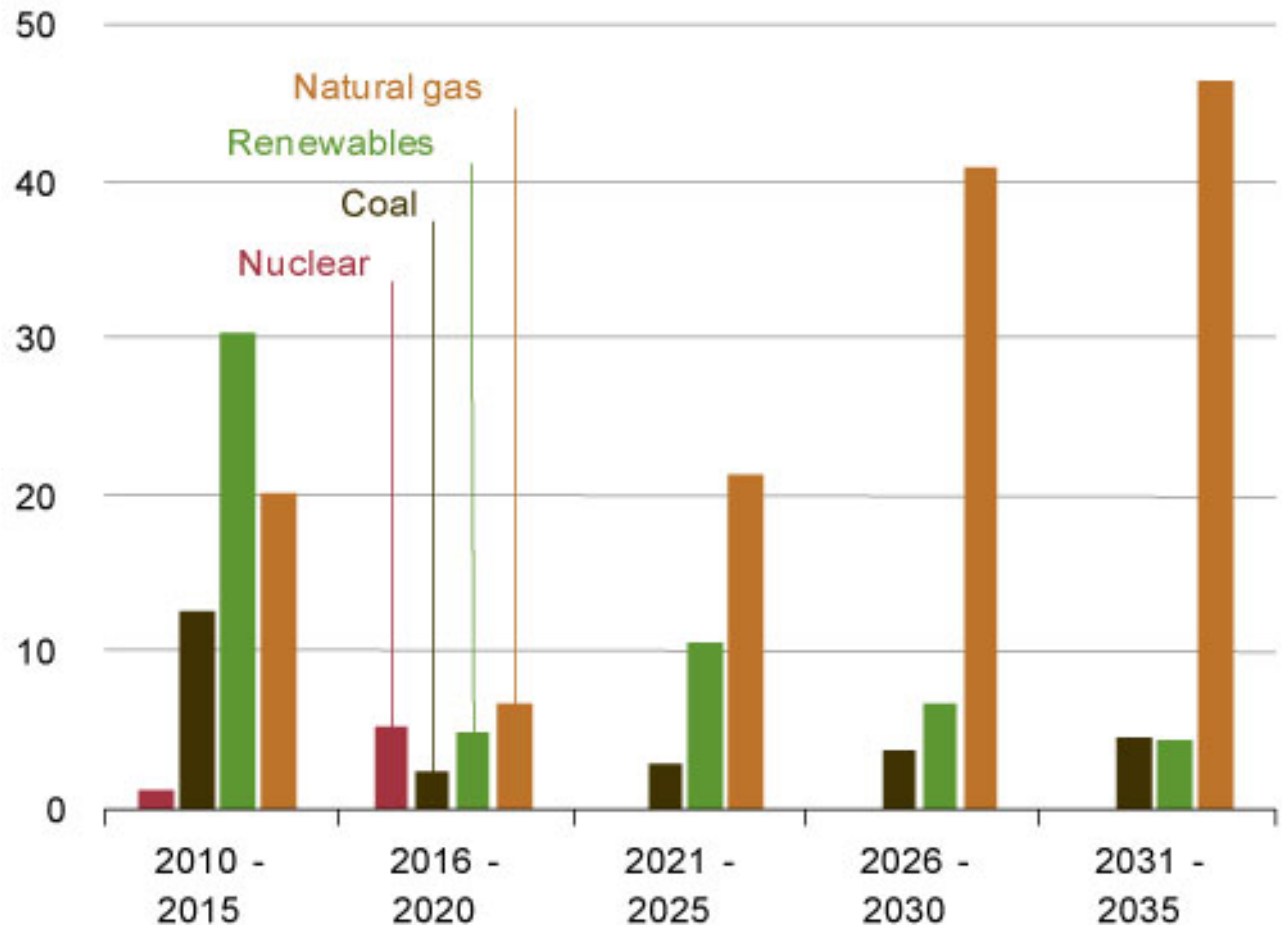
Preliminary results subject to change in Phase 2 analysis

# Gas pipeline industry has a proven track record of building what needs to be built

- The report forecasts robust infrastructure needs over the next 25 years.
- The interstate natural gas pipeline industry has a proven track record of making the investments needed to support the market.
- If the market sends clear signals that infrastructure is needed, the industry will make the investment

# Growth in Gas Demand for Power Generation

- With growing electricity demand and the retirement of 39 gigawatts of existing capacity, 223 gigawatts of new generating capacity (including end-use combined heat and power) will be needed between 2010 and 2035.
- Natural-gas-fired plants account for 60 percent of capacity additions between 2010 and 2035 in the AEO2011 Reference case, compared with 25 percent for renewables, 11 percent for coal-fired plants, and 3 percent for nuclear.



Source: Energy Information Administration, Annual Energy Outlook 2011

# Key Points on Gas-Electricity Integration

- There are no operational impediments to serving electric generators, provided that generators contract for the appropriate pipeline transportation service.
- Electric generators historically have benefitted from highly reliable gas delivery service largely due to fact that a pipeline's firm customers only need 100% of their capacity on certain days.
- Modifying the gas-electric day and nomination/scheduling timeline will not solve electric reliability issues. When a pipeline cannot schedule interruptible transportation, it is not a reliability issue. It is a contracting issue.
- Wholesale electric market design – which rewards generators for having the lowest marginal costs – is a disincentive for generators to sign up for firm transportation.

# Other issues -- FERC

- Section 5 investigations
- Integration of renewables
- Dealing with a changing gas market
  - New, expanded infrastructure
  - Flow Reversals
  - Abandonment

Donald F. Santa, Jr., President & CEO  
Interstate Natural Gas Association of America  
dsanta@ingaa.org

20 F Street, N.W. Suite 450  
Washington, DC 20001  
(202) 216-5900  
<http://www.ingaa.org>