Natural Gas
Smarter Power Today.

Anga
America’s Natural Gas Alliance
Why Natural Gas?

- Clean
- Abundant
- Domestic
- Jobs
PRODUCTION
Risks vs. Benefits

• All energy production comes with some risk.
  – Natural gas has a decades-long history of safety while producing more than one million wells.
  – No need to trade environmental protection for economic benefits; communities can and should have both.
  – ANGA members are committed to protecting our air, land and water while safely and responsibly developing this abundant domestic resource.
Hydraulic Fracturing

Multiple protective layers extend from surface to below aquifers.

Groundwater aquifers

Private well, about 500 feet deep
Public well, about 1,000 feet deep

Several layers of steel tubes encased in cement protect groundwater supplies

Protective steel casing encased in cement extends to shale depth

Shale Fractures

Depth from surface is typically more than a mile
Innovations In Production

**Water Innovations**
- Onsite Water Recycling
- Wastewater Treatment Facilities
- Hybrid Stimulation
- Abandoned Coal Mine Water
- Reuse of Municipal Wastewater
- Development of Electrocoagulation
- Greener Fluids
- Increased Efficiencies
- Water Pipelines Reducing Truck Traffic
- Involving Small Businesses in Water Reuse & Recycling
- “The Marcellus Effect” and Water Purification Developments

**Non-Water Innovations**
- Emissions Reductions
- Natural Gas STAR
- Horizontal Drilling
- Development of Natural Gas Turbines
- Improving Estimates for Technically Recoverable Gas

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Voluntary Disclosure System

Chemical Disclosure & Operation Updates

- **FracFocus.org** created by GWPC and IOGCC
  - 134 companies registered
  - Information is currently posted on 11,270 wells
  - 155,496 website visits
  - GWPC has funding proposal to enhance website including: improved data integration, electronic data exchange and batch submissions, state regulator compliance and search & filtering options. (Total cost ~ $600M)
ABUNDANT
The Shale Gas Revolution

EIA AEO 2011

862 TCF shale
2,543 TCF total
45% INCREASE
Over one year

Source: EIA Annual Energy Outlook, 2010; 2011
Abundant By Any Estimate

Estimates of U.S. Recoverable Natural Gas
(TCF – trillion cubic feet)

Sources:
ICF: As reported in MIT Energy Initiative, 2010, The Future of Natural Gas, interim report; Table 2.1
EIA: See http://www.eia.gov/analysis/studies/worldshalegas/
PGC: Potential Gas Committee’s Advance Summary and press release of its biennial assessment; see g
NPC: Realizing the Potential of North America’s Abundant Natural Gas and Oil Resources Johns Hopkins University; Prudent Development Study 2011
AFFORDABILITY & PRICING
Lower Energy Prices For Consumers

• Thanks to lower natural gas prices, U.S. households will save an average of $926 per year in disposable income between 2012 and 2015.

• Shale gas production has resulted in a 10 percent reduction in electricity costs nationally.

Long-Term Price Stability

Henry Hub Spot Natural Gas Price
($2010 / MMBtu)

Historic
Projected

Projection Range: AEO 2009 – AEO 2012

Henry Hub Spot prices (EIA reported actual prices included 2000 to 2010)