Unconventional Gas Focus Group

Houston, Texas
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Growth Required in Unconventional Gas Resources

- Devonian Shale
- Coalbed Methane
- Tight Gas Sands

Tcf


2007 2010 2013
Today’s Objectives

- Hear From Industry Experts
  - Unconventional Resources
  - Unconventional Gas Well Completions
  - Natural Gas Opportunities in U.S.
  - Need For R&D
- Review Results From Unconventional Gas Technology Road Mapping Activities
- Receive Input/Recommendations From Unconventional Gas Stakeholders
U.S. Primary Energy Consumption - Quads

Source: 2001 GTI Baseline Projection
U.S. Natural Gas Resource Base - Tcf

Total = 2070 Tcf

Unconventional Resource = 606 Tcf
U.S. Wellhead Prices

Gas Prices = Constant 1999 $ / mmbtu

GTI 2001 Baseline Study
## Technology Requirements

<table>
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<tr>
<th>Requirement</th>
<th>Goal</th>
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<tr>
<td>Well Cost</td>
<td>Reduce By 30%</td>
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<tr>
<td>Gas Recovery/Well</td>
<td>Increase By 25%</td>
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<tr>
<td>Drilling Success Rates</td>
<td>Maintain While Targets Become More Difficult</td>
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<tr>
<td>Resource Base</td>
<td>Increase By 100 Tcf</td>
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Coalbed Methane Gas Production

CBM Production - Bcf

- Arkoma Basin
- Emerging Basins
- Appalachian Basin
- Warrior Basin
- San Juan Basin
Tight Gas Sands Production

TGS Production - Bcf

- San Juan Basin
- Permian Basin
- Mid-Continent
- Texas Gulf Coast
- Rocky Mountains
- Arkla-East Texas
Devonian Shale Gas Production

Shale Gas Production - Bcf

New Albany
Barnett
Antrim Shale
Ohio Shale
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Tcf