AGI Critical Issues Forum

America’s Increasing Reliance on Natural Gas: Benefits and Risk of a Methane Economy

“Politics & Public Opinion”

The Natural Gas Conundrum

L. C. (Randy) Randolph Jr.
Southern Gas Association
Who We Are...

- 106 year old natural gas trade association
- 160 natural gas company members
- 300 associate members
- 500+ member volunteers
- 60 live & 50 virtual events per year
SGA Member Service Areas
Outline

• Geographic Changes in Nat Gas Supply
• Nat Gas & Liquid Hydrocarbon Connection
• US Refining Capacity
• Economic Contributions
• Regional Responses
• Technology
Natural Gas Production Geography Keeps Evolving

Source: Ponderosa Advisors & HPDI
Marcellus/Utica Transforming The Natural Gas Market

![Map showing natural gas basins sized relative to Rockies 2010 Prod]

- Rockies: 13.0
- Anadarko: 7.5
- Barnett: 5.3
- Haynesville: 4.3
- Eagle Ford: 7.1
- Permian: 6.3
- Fayetteville: 2.9
- Marcellus/Utica: 16.4
- GOM: 4.5

Units = Bcf/d
Basins Sized Relative to Rockies 2010 Prod

Source: Ponderosa Advisors HPDI
Marcellus/Utica Will Transform The Natural Gas Market

Source: Ponderosa Advisors & HPDI
Marcellus/Utica Production Dominates NA Flow Patterns Straining Pipeline Assets

Source: Ponderosa Advisors & HPDI
North America is poised to become a net LNG exporter

*N. America: U.S. and Canada only*
Dry Gas Declines Have Been Offset By Associated Gas Production

Gross Gas Production By GPM

Assoc Gas Definition: Onshore Production Areas With GPM>1.15, Data through 8/2014

Source: Ponderosa Advisors, HPDI, FERC
¹Utilization Rate: 90%
²Foreign Owned Capacity: 1.4 MMb/d
³Canadian Imports: 3.1 MMb/d
US Refining Capacity Will Slow Production Growth

U.S. Refining Capacity @ 90% Util Rate

Foreign Owned Capacity

Canadian Imports

Actual History

Production (MMb/d)

Source: Ponderosa Advisors, HPDI, FERC
¹Utilization Rate: 90%
²Foreign Owned Capacity: 1.4 MMb/d
³Canadian Imports: 3.1 MMb/d
United States Oil & Gas Key Industry Statistics

**Employment 2009-2013**

- 2009: 810,800
- 2010: 835,500
- 2011: 906,400
- 2012: 982,000
- 2013: 1,012,800

**Wage Comparison**

Annual Average in 2013

- Private Sector: $49,700
- Oil & Gas: $103,400
- Professional Services: $83,400
- Manufacturing: $61,100
- Construction: $53,200

Source: U.S. Bureau of Labor Statistics
All data is for 2013 except where noted.
California Oil & Gas Key Industry Statistics

### Employment

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>44,200</td>
</tr>
<tr>
<td>2010</td>
<td>44,800</td>
</tr>
<tr>
<td>2011</td>
<td>45,200</td>
</tr>
<tr>
<td>2012</td>
<td>46,600</td>
</tr>
<tr>
<td>2013</td>
<td>46,400</td>
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</table>

### Wage Comparison

<table>
<thead>
<tr>
<th>Industry</th>
<th>Annual Average in 2013</th>
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</thead>
<tbody>
<tr>
<td>Private Sector</td>
<td>$56,600</td>
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<tr>
<td>Oil &amp; Gas</td>
<td>$138,200</td>
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<tr>
<td>Professional Services</td>
<td>$97,600</td>
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<tr>
<td>Manufacturing</td>
<td>$77,900</td>
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<tr>
<td>Construction</td>
<td>$58,200</td>
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</table>

Source: U.S. Bureau of Labor Statistics
All data is for 2013 except where noted.
Colorado Oil & Gas Key Industry Statistics

**EMPLOYMENT**

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment</th>
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</thead>
<tbody>
<tr>
<td>2009</td>
<td>22,800</td>
</tr>
<tr>
<td>2010</td>
<td>23,200</td>
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<tr>
<td>2011</td>
<td>26,100</td>
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<tr>
<td>2012</td>
<td>27,600</td>
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<tr>
<td>2013</td>
<td>28,200</td>
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**WAGE COMPARISON**

<table>
<thead>
<tr>
<th>Industry</th>
<th>Average Wage</th>
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</thead>
<tbody>
<tr>
<td>Private Sector</td>
<td>$51,100</td>
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<tr>
<td>Oil &amp; Gas</td>
<td>$111,700</td>
</tr>
<tr>
<td>Professional Services</td>
<td>$84,800</td>
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<tr>
<td>Manufacturing</td>
<td>$62,400</td>
</tr>
<tr>
<td>Construction</td>
<td>$51,100</td>
</tr>
</tbody>
</table>

Source: U.S. Bureau of Labor Statistics
All data is for 2013 except where noted.
Texas Oil & Gas Key Industry Statistics

**EMPLOYMENT**
2009-2013

- 2009: 304,500
- 2010: 307,300
- 2011: 345,200
- 2012: 388,500
- 2013: 411,600

**WAGE COMPARISON**

- **Private Sector**: $52,100
- **Oil & Gas**: $118,900
- **Professional Services**: $83,900
- **Manufacturing**: $68,900
- **Construction**: $55,700

*Source: U.S. Bureau of Labor Statistics*
*All data is for 2013 except where noted.*
35 years old and younger
• 68% would likely vote for candidates that support carbon emission reductions
• 56% are willing to pay much higher prices to protect the environment
• 72% strongly support subsidies for renewable energy
• 39% are familiar with hydraulic fracturing for hydrocarbon fuel extraction
• 37% support the use of hydraulic fracturing

65 years old and older
• 50% would likely vote for candidates that support carbon emission reductions
• 20% are willing to pay much higher prices to protect the environment
• 58% strongly support subsidies for renewable energy
• 52% are familiar with hydraulic fracturing for hydrocarbon fuel extraction
• 52% support the use of hydraulic fracturing
Building Creditability & Relationships

• Education – Public, Customers & Employees
• Advocacy Training
• Local Community Engagement
• Workforce Training & Development
• Public Forum Participation
• Safety - Public, Customer and Employee
• Communications
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