Prospects in the United States: Energy Opportunities and Challenges

National Waterways Conference
Washington DC
March 26, 2014

Christopher Guith
Vice President - Policy
Institute for 21st Century Energy
U.S. Chamber of Commerce
We Possess Tremendous Domestic Energy Resources

- Technically Recoverable Resources
### Employment Contribution due to the Unconventional Activity Value Chain: Base Case*

<table>
<thead>
<tr>
<th>Activity</th>
<th>2012</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upstream Energy Activity</td>
<td>1,748,604</td>
<td>2,985,168</td>
<td>3,498,678</td>
</tr>
<tr>
<td>Midstream and Downstream Energy Activity</td>
<td>323,648</td>
<td>73,530</td>
<td>56,989</td>
</tr>
<tr>
<td>Energy-Related Chemicals Activity</td>
<td>53,252</td>
<td>277,356</td>
<td>318,748</td>
</tr>
<tr>
<td><strong>Total Activity</strong></td>
<td>2,125,504</td>
<td>3,336,055</td>
<td>3,874,415</td>
</tr>
</tbody>
</table>

**NOTES:** Numbers may not sum due to rounding.

*The unconventional activity value chain represents the sum of unconventional oil and natural gas value chains and energy-related chemicals.

Source: IHS Economics
# America’s New Energy Future

## Contribution to US Lower 48 Government Revenue due to the Unconventional Activity Value Chain: Base Case*

<table>
<thead>
<tr>
<th>Contribution by Type***</th>
<th>2012</th>
<th>2020</th>
<th>2025</th>
<th>2012-2025**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Taxes</td>
<td>35,598</td>
<td>57,702</td>
<td>64,030</td>
<td>750,696</td>
</tr>
<tr>
<td>Federal Royalty Payments</td>
<td>1,964</td>
<td>3,204</td>
<td>2,994</td>
<td>39,664</td>
</tr>
<tr>
<td>Federal Bonus Payments</td>
<td>148</td>
<td>150</td>
<td>138</td>
<td>2,139</td>
</tr>
<tr>
<td>State and Local Taxes</td>
<td>36,732</td>
<td>64,484</td>
<td>71,233</td>
<td>822,137</td>
</tr>
<tr>
<td><strong>Total Government Revenue</strong></td>
<td><strong>74,443</strong></td>
<td><strong>125,540</strong></td>
<td><strong>138,395</strong></td>
<td><strong>1,614,636</strong></td>
</tr>
<tr>
<td>Lease Payments to Private Landowners</td>
<td>504</td>
<td>915</td>
<td>1,103</td>
<td>11,696</td>
</tr>
</tbody>
</table>

Source: IHS Economics

*Values are in 2012 dollars.

**Total contributions for the years 2012 and 2025 are calculated based on the projected contributions for each year.

***Values may include contributions from various government levels and types.
America’s New Energy Future

Change in Disposable Income per Household due to the Unconventional Activity Value Chain: Base Case*

<table>
<thead>
<tr>
<th>Year</th>
<th>2012 $</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,000</td>
</tr>
<tr>
<td>2015</td>
<td>2,000</td>
</tr>
<tr>
<td>2020</td>
<td>3,000</td>
</tr>
<tr>
<td>2025</td>
<td>4,000</td>
</tr>
</tbody>
</table>

Note: *The unconventional activity value chain represents the sum of unconventional oil and natural gas value chains and energy-related chemicals.

Source: IHS Model of the US Economy
Oil & Gas is THE Job Driver

+38.6%

-2.6%
Figure 85. Natural gas consumption by sector, 1990-2040 (trillion cubic feet)
Gas Pipeline Construction Hits Overdrive

Market Responsive Infrastructure Additions
Major Gas Pipeline Projects Certificated (MMcf/d)
January 2000 to February 2011

115.00 BCF/D Total
16,178 Miles
152 projects
212 certificates

Source: Federal Energy Regulatory Commission

Rail, Truck, & Barge Shipments Double

Energy Information Administration, 7/12/13
Moving Crude From the Middle of Nowhere

Ample Takeaway Capacity in North Dakota
EPA's Rulemakings on the Runway

2011
- Primary Lead Smelting NESHP Final rule 11/11
- Secondary Lead Smelters NESHP Final rule 12/11
- Secondary Aluminum Production NESHP NPMR 12/11
- Nuclear Operations Radiation Protection Standard NPMR 12/11

2012
- Air Quality Regulations
- Fuel Regulations
- GHG Regulations
- Air Toxics Regulations
- Pesticides
- Toxic Substances
- Waste
- Water
- Other

FL Numeric Nutrient Criteria - Estuaries and Coastal Waters NPMR 11/11; Final rule 8/12
- NSPS & EG for GSWI - Reconsideration NPMR 12/11
- Petroleum Refineries - Heat Exchangers NESHP/NSPS Final rule 11/11
- Tier 3 Vehicle/Fuel Standards NPMR 2/12
- Nanoscale Materials TSCA Reporting Rule NPMR 3/12
- Operating Uranium Mill Tailings NESHP NPMR 3/12
- Cement MACT Amendments NPMR 2/2012
- Coal Ash Rule NPMR 12/12
- Lead Paint Standards for Public and Commercial Buildings NPMR 6/12
- Organic Hazardous Waste NPMR 6/12
- 1-Hour SO2 NAQS Implementation NPMR 3/12
- Pulp and Paper NESHP NPMR 1/12
- Water Quality Standards Regulatory Clearances NPMR 3/12
- CAFB Reporting Rule Final rule 6/12
- NSPS Review for Residential Wood Heaters NPMR 1/12
- GHG NSPS for EGU NPMR 12/11
- Part 63 Malfunction Amendments NPMR 4/12
- Certification of Pesticide Applicators NPMR 10/12
- Agricultural Worker Protection Standard Revisions NPMR 3/12
- Nickel and Zinc Reuse NPMR 3/12
- WPAL Toxic Substance Rule NPMR 12/12
- ACRS 8200 Revision Final rule 6/12

2013
- Lead Rule NPMR 11/11
- Zn/Pb Rules NPMR 12/12
- Marine Acidification Standards NPMR 1/13
- TSCA Regulations on Long-Chain Perfluorinated Chemicals NPMR 3/13
- Pueblo Sludge Rules Final rule 12/13
- Chicago River Sludge Rules Final rule 12/13
- NPDWR Total Coliform Rule Final rule 11/13
- Mercury Cell Chlor-Alkali MACT Final rule 9/12
- Chromium Electroplating/Steel Pickling NESHP NPMR 9/12
- Mercury TSCA Section 6(a) Guidance NPMR 10/12
- NPDWRs for Perchlorate Chemicals NPMR 3/13
- Coal Ash Final rule 6/13

2014
- Shale Gas Extraction Pretreatment Standards NPMR 10/14
- Pre-Proposal Stage
- PM2.5 Implementation Rule Revision
- Pre-Proposal Stage
- Lead NAAQS NPMR 12/13
- Brick and Structural Clay and Clay Ceramics NESHP Pre-proposal stage
Coal & Gas Prices

Annual Henry Hub and Spot Coal Prices

$US per MMBtu

Source: IHS Energy
Expected Coal Plant Closures

- >50 GW prematurely retired by 2020
- 15%-20% of entire coal fleet
- ~10% of all US generation
Heavy Concentration on Retirements

Reported Coal-fired generator retirements, 2012 - 2016

1 megawatts

800
“Green Tape” Stifling Energy Projects

Energy sector suffers from a lengthy, unpredictable, and needlessly complex regulatory maze

BANANA - “build absolutely nothing anywhere near anything” mentality

PROJECT / NO PROJECT
- Nearly 400 energy projects have been delayed or scuttled
- Over 40% renewable energy projects
- $560 Billion 250,000 Direct Jobs

SOLUTIONS
- Review of NEPA
- Federal Preemptive Siting Authority for interstate transmission

Want “Green Jobs”? Cut the “Green Tape”