The E&C Landscape
2011 and Beyond

Rice Global E&C Forum Roundtable
January 14, 2011
• Rice Global Forum Perspective
• A Look Back
• A Look Ahead – the Macro View
• Markets
  – Oil
  – Natural Gas
  – Petrochemicals
  – Power
  – Infrastructure
  – Other
Rice Forum Members
- ABB*
- Aker Solutions
- AMEC Paragon
- Bechtel
- Black & Veatch
- Business Management Consultants*
- CB&I
- CDI Engineering Solutions
- ENGlobal
- Fluor
- Foster Wheeler
- HiCad America*
- Honeywell Process Solutions*
- IHI
- IRC Risk and Safety*
- Jacobs Engineering
- JGC
- KBR
- Kiewit Energy*
- MVS Consulting*
- Shaw Energy & Chemicals
- Subsurface Technology*
- Technip
- Tecna Engineering*
- Toyo USA
- URS
- Willbros USA

Business Breakdown of Rice Global Forum Members**

- Indus/Petro 60%
- Power 15%
- Transp 10%
- Telecom 1%
- Haz Waste 4%
- MFG 2%
- WTR/SWR Waste 3%
- Gen Bldg 5%

* Not included in business breakdown
** Based on 2009 ENR reported revenues
A Look Back
A Look Back

Includes reported results for public Rice Global Forum members
A Look Ahead
A Look Ahead – The Macro View

Positive Factors affecting the economy
- Extension of Bush tax cuts
- Monetary policy easing
  - Short term rates near zero
- Lower value of the dollar
  - Improved exports
- Pent up consumer demand
- Pent up business demand
  - Technology upgrades

Negative Factors affecting the economy
- Anemic job growth
  - Many jobs are temporary
- Rising oil & commodity prices
- Increasing mortgage rates dampen housing market
- Banks still reluctant to lend
- Weak trading partners
  - Reduced exports
- The Deficit and the Debt

“The rate of growth should be better than in 2010… but not by much.”

Source: MarketWatch Chief Economist Irwin Kellner
Total Capital Spending Plans

Energy & Utility Companies*

* 351 Companies under UBS Coverage, December 2010
Oil
Despite wild swings over the last three years, EIA predicts a steady rise in oil prices to $130+ by 2035. However, their confidence band is very wide.
Oil and Gas Capex slide deleted due to subscription restrictions with Global Data
Natural Gas
US Gas Outlook

- **Shale Gas production to overcome production declines**
  - Tight gas holds its own after 2015
  - No growth in coal bed methane

- **Shale production squeezes net imports to zero**

- **Total demand grows only ~3Tcf through 2035**

- **Average wellhead price under $5 / mcf through 2020**

- **Natural gas share of total energy consumption drops**
  - 25% in 2009, 24% in 2035

- **No major shift from coal to gas is forecasted**
  - Renewables dominate growth through 2020, gas thereafter

Source: EIA Annual Energy Outlook 2011
US Gas Outlook

- Natural Gas Plant liquids to grow 50% by 2035, ~1 MM bpd
- Electric power capacity additions dominated by natural gas
- Gas price forecasts have dropped due to shale gas success

Source: EIA Annual Energy Outlook 2011
• 78% of demand growth through 2035 occurs in the developing world
• Production growth dominated by conventional supplies, led by ME
  – Increase dominated by Qatar and Iran
  – Most ME countries increase gas production through 2035
• Unconventional supplies significant in US, Canada, China by 2035
  – US: 74% of domestic supply
  – Canada: 63%
  – China: 56%
• European unconventional supplies negligible through 2020

Source: EIA International Energy Outlook 2010
Petrochemicals slides deleted due to subscription restrictions with Global Data
Power
A Look Ahead – Electric Power

World Electric Power Generation by Fuel Type

- Generation, trillions Kwh
- Source: EIA

- 2.3%/yr

- 2007: 17.5 trillions Kwh
- 2015: 22.5 trillions Kwh
- 2020: 27.5 trillions Kwh
- 2025: 32.5 trillions Kwh
- 2030: 37.5 trillions Kwh
- 2035: 42.5 trillions Kwh

- Liquids
- Coal
- Natural Gas
- Renewables
- Nuclear

Source: EIA
Coal fired electric power will grow only in the developing world.

Source: EIA
• Clean Air Act Amendment of 2010 brought new requirements for emissions control on utilities.
  – SO2 emissions must decrease by 80% by 2018
  – NOX emissions must decrease by 53% by 2015
  – Hg emissions must decrease by 90% by 2015
• March 2010: EPA would wait for 2013 to regulate carbon emissions from 50,000 to 75,000 tons per year
  – Initial phase of rules begin in 2011 for > 75,000 tons
• Projected units w/o scrubbers: 42%, 318,000 MW
• Utilities considering shutdown versus retrofit:
  – Progress Energy to shut down all North Carolina coal plants by 2017 that did not have sulfur dioxide scrubbers: 11 units, 1,500MW, 1/3 of NC coal capacity
  – Portland General Electric to shut down its Boardman plant twenty years ahead of schedule
  – TVA is pushing toward moving 1,000 MW away from coal and to nuclear and gas by 2015, or about 59 units
• EIA does not forecast a significant reduction in coal fired generation
No significant shift in fuel mix over the forecast period

Source: EIA
A Look Ahead – Nuclear Power

~$1 trillion in capacity additions

Installed Capacity gigawatts

<table>
<thead>
<tr>
<th>Region</th>
<th>2007</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Europe</td>
<td>131</td>
<td>144</td>
</tr>
<tr>
<td>North America</td>
<td>115</td>
<td>136</td>
</tr>
<tr>
<td>OECD Asia</td>
<td>67</td>
<td>94</td>
</tr>
<tr>
<td>China</td>
<td>9</td>
<td>75</td>
</tr>
<tr>
<td>Russia</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td>India</td>
<td>27</td>
<td>48</td>
</tr>
<tr>
<td>Rest of world</td>
<td>30</td>
<td>68</td>
</tr>
</tbody>
</table>

Source: EIA
Wind power forecasted to grow steadily, and move offshore reaching ~5% of total generation by 2030.

Source: Global Wind Energy Council
The developed world, and Europe in particular, will dominate wind power installation

Source: Global Wind Energy Council
Infrastructure
• US spending in a slow downward trend as a % of GDP
  – Total spending 2003 – 2007 was in decline
  – This was the focus of much of the stimulus talk
    • ~$4 billion in 2009, $49 billion 2010-2011

Source: Congressional Budget Office
Other Markets
Thank you!
• Biofuels Digest
• Business Monitor International
• Capital IQ
• Congressional Budget Office
• Energy Information Administration
• Engineering News Record
• Global Data Energy etrack
• Global Data Petrochemical etrack
• Global Wind Energy Council
• MarketWatch
• Oil & Gas Journal
• UBS Investment Research