Energy Renaissance

OUTLOOK

2013

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EXECUTIVE SUMMARY

As part of our Outlook 2013, we are highlighting several themes that are impacting the U.S. and global economy: The U.S. Energy Renaissance; Global Infrastructure; and Feed The World. These themes have major investment implications and should play a key role in future market returns.

The U.S. Energy Renaissance is a very positive development for the U.S. economy and provides many reasons for optimism on the future of the United States and North America.

Some of the positives are directly measurable in GDP calculations – the trade deficit is benefitting by about 1.0% of GDP because of lower energy imports. Other positives are harder to quantify in terms of GDP impact, but are just as important – consumers and businesses are saving around 1.0% of GDP in lower energy costs. For an economy that’s only been growing at 2.0% since the great recession, these are very important developments.

The energy renaissance has also created 1.7 million jobs so far through direct, indirect and induced effects. Not bad considering we have only created a little over 5 million jobs in total since the end of the great recession.

We hope you find our Energy Renaissance Outlook 2013 informative and enjoyable and that you will agree that the U.S. does indeed have a bright future.
U.S. ENERGY RENAISSANCE IS FUELED BY SHALE OIL AND GAS
NORTH AMERICAN SHALE IS DISPLAYING TREMENDOUS POTENTIAL

The dramatic increase in production of shale gas and tight oil amounts to the most important energy innovation of the 21st century

- Last August, the U.S. Energy Information Administration (EIA) announced that "proved reserves of U.S. oil and natural gas in 2010 rose by the highest amounts ever recorded" since EIA began publishing proved reserves estimates in 1977.
  - The record 2.9 billion barrel increase in crude oil proved reserves for 2010 (to 25.2 billion barrels) is fully 50 percent higher than the increase from 2008 to 2009, which was itself a record.

- Shale gas has risen from 2% of production a decade ago to 37% of supply today.
- U.S. oil output, instead of continuing its long decline, has increased dramatically – by about 38% since 2008.
  - This is equivalent to the entire output of Nigeria, the seventh largest producing country in OPEC.
- So far, this unconventional revolution is supporting 1.7 million jobs – direct, indirect, and induced. Estimates show a rise to 3 million jobs by the end of the decade.
- Nearly $62 billion in additional federal, state and local tax receipts in 2012, and more than $2.5 trillion in cumulative added tax revenues between 2012 and 2035.
- U.S. carbon dioxide (CO2) emissions from energy consumption are down 13% since 2007 and at their lowest levels since 1992.
  - The major factor is the rapid replacement of coal with natural gas in electricity generation.

The surge in unconventional oil & gas production has implications well beyond the United States
NORTH AMERICAN SHALE IS DISPLAYING TREMENDOUS POTENTIAL

Domestic natural gas production grows faster than consumption and the U.S. becomes a net exporter of natural gas around 2020

U.S. dry gas trillion cubic feet

<table>
<thead>
<tr>
<th>Year</th>
<th>History</th>
<th>2011</th>
<th>Projections</th>
</tr>
</thead>
<tbody>
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<td>1990</td>
<td>10</td>
<td>15</td>
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</tr>
<tr>
<td>2010</td>
<td>30</td>
<td>35</td>
<td>40</td>
</tr>
</tbody>
</table>

Source: EIA, Annual Energy Outlook 2013 Early Release

U.S. tight oil production leads a growth in domestic production of 2.6 million barrels per day between 2008 and 2019

U.S. crude oil production million barrels per day

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>1990</td>
<td>5</td>
<td>6</td>
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</tr>
<tr>
<td>2000</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>2010</td>
<td>7</td>
<td>8</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: EIA, Annual Energy Outlook 2013 Early Release
Geologists have long known about huge natural gas deposits trapped in shale rock formations, but it is only over the past decade that energy companies have combined two established technologies—horizontal drilling and hydraulic fracturing—to successfully unlock this resource.

- Government estimates show 1.95 trillion barrels of oil-equivalent (includes crude oil and natural gas) reside in North America.
  - More than a century’s worth of supply with prolific new resources coming online.
  - Many experts believe resource base is significantly larger than previously thought.
- EIA made clear what accounts for the record growth in reserve estimates: “The expanding application of horizontal drilling and hydraulic fracturing in shale and other ‘tight’ (very low permeability) formations, the same technologies that spurred substantial gains in natural gas proved reserves in recent years, played a key role.”
- Today’s estimates show that most U.S. tight reservoirs still leave more than 80% of the oil in the ground.
  - Shifting this to even a 60% to 70% recovery would vastly improve the economics of the U.S. oil and gas business.
  - The industry is far from done with technological advances.
According to the U.S. Energy Information Administration (EIA), energy from U.S. domestic sources will increase from 79% of consumption today to 87% by 2020. The majority of the other 13% will be supplied by Canada & Mexico.

International Energy Agency (IEA) recently reported that U.S. oil production is projected to surpass Saudi Arabia’s by 2019.

- Growth results largely from a significant increase in onshore crude oil production, particularly from shale.
- Onshore production from shale oil, will account for 51% of total output in the lower 48 states by 2040, up from 33% in 2011.
Trade deficit major beneficiary of Energy Renaissance.

- The increase in domestic oil production over the past five years will reduce our oil-import bill this year by about $75 billion or 0.5% of GDP (oil imports peaked in 2005 at 60% of oil consumption and are about 40% today).

- The growth of shale gas will save the U.S. from spending $100 billion (0.6% of GDP) a year on imported liquefied natural gas (LNG), which was the likely prospect five years ago.

- For comparison, our trade deficit was $540 billion (3.4% of GDP) in 2012, less than the 2011 deficit of $560 billion (3.7% of GDP).

U.S. energy production will trim the petro-power of energy producing countries such as Russia, Iran, and Venezuela.

- U.S. is better positioned to respond to global supply disruptions.

- The Strategic Petroleum Reserve, which stores oil in salt caverns, currently has 80 days of import cover. But if U.S. imports fell to 6 million barrels a day from 8.7 million barrels a day now, the S.P.R. would have 116 days of cover.
The U.S. has one of the lowest natural gas prices in the world —by a significant margin.

- The big winners are U.S. consumers, domestic energy intensive industries, energy producers, and electric utilities.

- Lower natural gas and electricity prices are resulting in projected annual average consumer savings of $926 per household between 2012 and 2015.
  - (Source: IHS. Average natural gas price of $4.79/MM Btu (constant 2010 USD) assumed from 2011 through 2015.

- Lower utility costs have saved U.S. companies and consumers an average of $566 million a day ($206.6 billion per year) for the last year.
  - Source: B of A ML Study

- Natural gas poised to take share from oil for home heating
  - Resulting homeowners savings of $1,000 - $1,500 per year.

- $11.6 billion in annual cost savings to U.S. manufacturers through 2025 due to additional natural gas production
  - Source: PwC Study.

*Electricity prices are set to increase with the highest prices persisting in the European Union & Japan, well above those in China & the United States*
IHS estimates that more than 1.7 million new American jobs have been created so far, a number that could rise to as much as 3 million by 2020.

- Job impacts are being felt across the United States, including in states with no shale gas or tight oil activity.
  - New York State, with a ban presently in effect on shale gas development, nevertheless has benefitted with 44,000 jobs. Illinois, debating how to go forward, already registers 39,000 jobs.
  - North Dakota, with the Bakken Shale, has nation’s lowest unemployment rate at 3.2%.

- Oil and gas average wage rate is 52% more than national average ($35 vs $23 per hour).
  - Bigger impact on economy from these jobs (larger employment multiplier)

- Pennsylvania Marcellus Shale development alone generated $11.2 billion in the regional equivalent of gross domestic product, contributed $1.1 billion in state and local tax revenues, and supported nearly 140,000 jobs.
  - Source: Chevron

**Rapid Jobs Growth Projected in the Unconventional Oil & Gas Sector in the United States**

Source: IHS

These projections include direct, indirect and induced impacts
Manufacturing Major Beneficiary

- Global chemical companies have announced $95 billion in N.A. building or plant expansions.
  - so far...
- Numerous industries (steel, aluminum, glass) are gaining a major global competitive advantage with low cost inputs.
  - Natural gas and electricity are major input costs for industry.
- “Competitive stimulus” has attracted European, Latin American, and Asian energy-intensive investment.
- U.S. producers encouraged to “onshore”.
- Recent NERA study shows additional economic benefits for exporting natural gas.
- U.S., long an energy importer, is now exporting $68 million per day of finished petroleum products such as diesel fuel and $32.3 million worth of coal.

Natural gas consumption is quite dispersed with electric power, industrial, and transportation use driving future demand growth

![Chart showing U.S. dry gas consumption and projections](chart.png)

Source: EIA, Annual Energy Outlook 2013 Early Release

INVESTMENT STRATEGY GROUP
The U.S. has recorded the largest reduction in greenhouse gas emissions of anywhere in the world.

- According to EIA: “The decline in coal-related emissions is due mainly to utilities using less coal for electricity generation as they burned more low-priced natural gas.”
- This is an extraordinary feat considering: The U.S. economy is 60% larger than it was two decades ago, and our primary energy consumption is roughly 14% higher.
- While increased energy efficiency is helping, the shale revolution is proving positive for the environment as well.

Second Figure: Source: U.S. Energy Information Administration, Annual Energy Outlooks 2009 – 2013
Note: Solid portions of each series show history as of each publication; dotted portions show projections. ARRA2009 denotes the American Recovery and Reinvestment Act of 2009.
# Stocks That Are Participating in the Energy Renaissance

## Energy - 11.0% of S&P 500 Index

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Ticker</th>
<th>Forward P/E</th>
<th>Earnings Growth</th>
<th>Dividend Yield</th>
<th>Credit Rating</th>
<th>Notes</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXXON MOBIL CORP</td>
<td>XOM</td>
<td>11.07</td>
<td>3.08</td>
<td>2.45</td>
<td>AAA</td>
<td>World's largest publicly-owned integrated oil company. Low risk energy play.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>CHEVRON CORP</td>
<td>CVX</td>
<td>9.51</td>
<td>4.76</td>
<td>2.98</td>
<td>AA</td>
<td>Global integrated oil company that's executing well.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>CONOCOPHILLIPS</td>
<td>COP</td>
<td>10.16</td>
<td>5.48</td>
<td>4.57</td>
<td>A</td>
<td>One of the largest independent E&amp;P companies in the world.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>EOG RESOURCES INC</td>
<td>EOG</td>
<td>20.99</td>
<td>11.86</td>
<td>0.56</td>
<td>A-</td>
<td>Large independent E&amp;P company with Bakken Shale oil growth exposure.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>EQT CORP</td>
<td>EQT</td>
<td>32.74</td>
<td>30.00</td>
<td>1.40</td>
<td>BBB</td>
<td>Marcellus Shale pure-play with great long-term prospects.</td>
<td>S&amp;P</td>
</tr>
<tr>
<td>RANGE RESOURCES CORP</td>
<td>RRC</td>
<td>58.44</td>
<td>10.00</td>
<td>0.21</td>
<td>BB</td>
<td>Major Marcellus Shale play and potential super-major take-over target.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>HALLIBURTON CO</td>
<td>HAL</td>
<td>13.24</td>
<td>16.33</td>
<td>0.90</td>
<td>A</td>
<td>Largest provider of hydraulic fracturing services worldwide.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>SCHLUMBERGER LTD</td>
<td>SLB</td>
<td>16.15</td>
<td>17.00</td>
<td>1.44</td>
<td>A+</td>
<td>Bellwether of oil services group, and hence, premium valuation.</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>ENTERPRISE PRODUCTS PARTNERS</td>
<td>EPD</td>
<td>21.24</td>
<td>7.50</td>
<td>4.46</td>
<td>BBB+</td>
<td>Large, well capitalized MLP operating in virtually all shale basins.</td>
<td>J / S&amp;P / CS</td>
</tr>
<tr>
<td>ACCESS MIDSTREAM PARTNERS LP</td>
<td>ACMP</td>
<td>24.74</td>
<td>12.00</td>
<td>4.29</td>
<td>BB-</td>
<td>Quality MLP focuses on gas gathering/processing with favorable long term contracts.</td>
<td>CS / J</td>
</tr>
<tr>
<td>VANGUARD ENERGY ETF</td>
<td>VDE</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Cap-weighted basket of 169 companies across entire energy sector.</td>
<td>-</td>
</tr>
<tr>
<td>SPDR S&amp;P OIL &amp; GAS EXP &amp; PR</td>
<td>XOP</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Equal-weighted basket of 71 E&amp;P companies.</td>
<td>-</td>
</tr>
<tr>
<td>ISHARES DJ US OIL EQUIP &amp; SV</td>
<td>IEZ</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Cap-weighted basket of 47 oil &amp; gas equipment and services companies.</td>
<td>-</td>
</tr>
</tbody>
</table>

## Industrials - 10.1% of S&P 500 Index

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Ticker</th>
<th>Forward P/E</th>
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<th>Notes</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEGION CORP</td>
<td>AEGN</td>
<td>14.28</td>
<td>18.33</td>
<td>-</td>
<td>-</td>
<td>J</td>
</tr>
<tr>
<td>CATERPILLAR INC</td>
<td>CAT</td>
<td>11.07</td>
<td>9.75</td>
<td>2.25</td>
<td>A</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>EMERSON ELECTRIC CO</td>
<td>EMR</td>
<td>14.94</td>
<td>10.17</td>
<td>2.90</td>
<td>A</td>
<td>J / S&amp;P / CS</td>
</tr>
<tr>
<td>GENERAL ELECTRIC CO</td>
<td>GE</td>
<td>13.83</td>
<td>9.75</td>
<td>3.02</td>
<td>AA+</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>CHICAGO BRIDGE &amp; IRON CO NV</td>
<td>CBI</td>
<td>14.03</td>
<td>16.17</td>
<td>0.37</td>
<td>-</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>KBR INC</td>
<td>KBR</td>
<td>11.06</td>
<td>12.00</td>
<td>-</td>
<td>-</td>
<td>CS</td>
</tr>
<tr>
<td>UNION PACIFIC CORP</td>
<td>UNP</td>
<td>14.72</td>
<td>12.65</td>
<td>1.80</td>
<td>A-</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>INDUSTRIAL SELECT SECT SPDR</td>
<td>XLI</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>CS</td>
</tr>
<tr>
<td>ISHARES DJ US TRANSPORT AVG</td>
<td>IYT</td>
<td>-</td>
<td>-</td>
<td>-</td>
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</tr>
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</table>

## Materials - 3.6% of S&P 500 Index

<table>
<thead>
<tr>
<th>Company Name</th>
<th>Ticker</th>
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<th>Earnings Growth</th>
<th>Dividend Yield</th>
<th>Notes</th>
<th>Coverage</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOW CHEMICAL CO/THE</td>
<td>DOW</td>
<td>13.53</td>
<td>6.50</td>
<td>3.79</td>
<td>BBB</td>
<td>S&amp;P / CS</td>
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<tr>
<td>DU PONT (E.I.) DE NEMOURS</td>
<td>DD</td>
<td>12.30</td>
<td>6.26</td>
<td>3.52</td>
<td>A</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>LYONDELLBASELL INDU-CL A</td>
<td>LYT</td>
<td>10.00</td>
<td>9.50</td>
<td>6.98</td>
<td>BBB-</td>
<td>S&amp;P / CS</td>
</tr>
<tr>
<td>NUCOR CORP</td>
<td>NUE</td>
<td>18.17</td>
<td>7.33</td>
<td>3.26</td>
<td>A</td>
<td>S&amp;P / CS</td>
</tr>
</tbody>
</table>
Definitions:

**Forward P/E** - Current stock price divided by EPS consensus estimate for the next four quarters.

**Earnings Growth Estimate** - Mean broker estimate of the compounded annual growth rate of the operating EPS over the company’s next full business cycle (typically 3-5 years).

**Dividend Yield** - Trailing 12 month dividend per share divided by share price.

**Credit Rating** - Rating assigned by Standard & Poor's to the long-term obligations of the issuer if repaid in the local currency of the issuer.
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Dividend information is as of 3/1/2013. “P/E Forward” refers to the stock price as of 3/1/2013 divided by the earnings per share consensus estimate for the next four quarters. “Growth Rate %” is an estimate of the compounded annual growth rate of the operating earnings per share over the company’s next full business cycle (typically 3 to 5 years). “Dividend Yield” refers to the trailing 12 month dividend per share divided by share price.

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