2015 Financial Survey: Nuclear Energy

U.S. Department of Energy, Office of Nuclear Energy
September 10, 2015
Washington, D.C.

Presented by Bruce Lacy
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Lacy Consulting Group, LLC
2015 Financial Survey: Nuclear Energy

- 42 participants and in-person interviews representing mainstream U.S. power and utility finance – bankers, investors, rating agencies, analysts
- Survey topics in addition to Nuclear Power, include the EPA Clean Power Plan, the evolving electric grid, natural gas, and renewables

3rd year of DOE/ONE sponsorship
Summary

Wall Street is not monolithic

• Natural Gas rules
• Vogtle and Summer are sending mixed signals for the future of U.S. nuclear
• 2015 attitudes toward SMRs show a positive turn
• Wall Street generally supports government development support for most technologies, but long term commercial viability is the test
Natural Gas

Q – What is your view on the short and long term average price of natural gas?

Q – Regarding price volatility and possible supply availability problems due to pipeline constraints.

View on the short and long term average price of Natural Gas

Price volatility and possible supply availability problems due to pipeline constraints

Very important national concern

Very important regional concern

-2 = Strongly Disagree, -1 = Disagree, 0 = Neutral/No Opinion, 1 = Agree, 2 = Strongly Agree
Prospects for Nuclear Power in the U.S.

Q – What is your view on the prospects for Nuclear Power in the U.S.?
Small Modular Reactors

Q – Do you believe the costs of SMRs can be contained such that those costs do not overwhelm the potential advantages associated with their smaller size and greater flexibility?

![Bar chart with percentage of respondents' opinions regarding whether SMR costs can be contained to not overwhelm advantages of small size. The chart shows the average of all responses from 2010-2015. The chart includes bars for 'No', 'No Opinion', and 'Yes' categories, with different years indicated by different colors.](chart.png)
Q – What additional confidence does US Government support for SMRs give you in terms of improving their future deployment potential?
Role of Government in Supporting Specific Technologies

Q – Please indicate your level of agreement with each combination of “Should” or “Will” for each indicated Congressional action.

<table>
<thead>
<tr>
<th>Congressional Action</th>
<th>Level of Agreement</th>
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<tbody>
<tr>
<td>Congress should phase out or not renew the PTC for Wind</td>
<td>-2</td>
</tr>
<tr>
<td>Congress should phase out or not renew the ITC for Solar</td>
<td>-1</td>
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<tr>
<td>Congress should establish a PTC or ITC for Batteries/Electrical Storage</td>
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Q – What is your expectation for the long term (10-20 years) allocation by type of generation to replace existing U.S. base load generation assets, e.g. coal and nuclear assets, as coal plants are shut down and nuclear plant licenses expire?
Long Term Replacement Capacity for the U.S. Trend over three years

- Natural Gas clearly dominates
- Solar is the top second tier technology, combined with batteries becomes even stronger
- Nuclear is the number two second tier technology
- Wind is bottom of second tier
- Coal appears to have little or no future

![Bar chart showing capacity to replace long term (10-20 years) for coal and nuclear retirements, by %: Average of all responses.](chart.png)

*Categories added in 2015*
Challenges/Recommendations

• Challenges for U.S. DOE/ONE
  • AP1000 site #3
  • Commercial deployment, including manufacturing, of NuScale product
  • SMRs recognized as attractive as Natural Gas and Roof Top Solar

• Recommendations for DOE/ONE & Wall Street
  • Continue monitoring Wall Street attitudes
  • Revise DOE SMR support question to include large and advanced reactors
  • Consider tailored outreach/relationship building with Wall Street
Thank You

Discussion

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