The Long-Term Strategic Review of the Strategic Petroleum Reserve: An Overview

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Presentation Overview

I. Background: Strategic Petroleum Reserve (SPR) crude oil sales

II. Topics addressed in the report

III. Conclusions

   I. Report takeaways

   II. Program implications
Background: SPR Crude Oil Sales

• Bipartisan Budget Act of 2015 (11/2015):
  – Mandates the sale of 58 million barrels between 2018 and 2025 as a federal government revenue offset
  – Authorizes the sale of up to $2 Billion worth of crude oil for SPR modernization between 2017 and 2020
  – Calls for a Long-Term Strategic Review (LTSR) of the SPR

• Fixing America’s Surface Transportation (FAST) Act (12/2015):
  – Mandates the sale of 66 million barrels between 2023 and 2025 to finance transportation infrastructure
  – SPR inventory cannot be drawn below 530 million barrels

• 21st Century Cures Act (12/2016)
  – Mandates the sale of 25 million barrels between 2017 and 2019
  – Inventory floor lowered to 480 million barrels
# SPR Crude Oil Sales - Volumes By Year

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>Section 403 Bipartisan Budget Act (MMbbl)</th>
<th>Section 32204 FAST Act (MMbbl)</th>
<th>Section 5010 21st Century Cures Act (MMbbl)</th>
<th>Section 404 Bipartisan Budget Act (MMbbl)</th>
<th>Annual Volume to be Sold (MMbbl)</th>
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</thead>
<tbody>
<tr>
<td>2017</td>
<td></td>
<td>10</td>
<td>6.4</td>
<td>16.4</td>
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<tr>
<td>2018</td>
<td>5</td>
<td>9</td>
<td>TBD</td>
<td>14 + TBD</td>
<td>14 + TBD</td>
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<tr>
<td>2019</td>
<td>5</td>
<td>6</td>
<td>TBD</td>
<td>11 + TBD</td>
<td>11 + TBD</td>
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<tr>
<td>2020</td>
<td>5</td>
<td></td>
<td>TBD</td>
<td>5 + TBD</td>
<td>5 + TBD</td>
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<tr>
<td>2021</td>
<td>5</td>
<td></td>
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<td>2022</td>
<td>8</td>
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<td>2023</td>
<td>10</td>
<td>16</td>
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<td>2024</td>
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<td>2025</td>
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<tr>
<td><strong>Total, Mandatory Sales</strong></td>
<td><strong>58</strong></td>
<td><strong>66</strong></td>
<td><strong>25</strong></td>
<td></td>
<td><strong>149</strong></td>
</tr>
<tr>
<td><strong>Total, All Sales</strong></td>
<td><strong>58</strong></td>
<td><strong>66</strong></td>
<td><strong>25</strong></td>
<td><strong>6.4 + TBD</strong></td>
<td><strong>155.4 + TBD</strong></td>
</tr>
</tbody>
</table>

*Total, Mandatory Sales* and *Total, All Sales* indicate the cumulative sum of sales volumes across the fiscal years.
Topics Addressed in the Long-Term Strategic Review (LTSR)

I. SPR Infrastructure
II. SPR Distribution
III. Costs and Benefits of SPR Options
IV. SPR Modernization
V. Legal Authorities
VI. Conclusions
1. The SPR’s aging surface infrastructure will begin to fundamentally compromise the Reserve’s capabilities. Investing in a second Life Extension project is essential to ensure the long-term integrity of SPR assets and the ability of the program to carry out its mission.
Surface Infrastructure and Life Extension II

• Much of the SPR’s surface infrastructure has surpassed its design life
• DOE will sell approximately $800 million worth of crude oil to fund a second life extension program
• Project includes systems upgrades and equipment replacement
• Preliminary project timeline is 2015 – 2022
2. Expanding North American oil production and the resulting shifts in U.S. midstream infrastructure have in some cases reduced the SPR’s ability to add incremental barrels of oil to the market in the event of an oil supply crisis. The addition of dedicated marine terminals will significantly enhance the Reserve’s effective distribution capability.
Oil Distribution and Marine Terminal Enhancements

- Scenario-based analysis of SPR capabilities
- Three key concepts:
  - Drawdown rate
  - Physical distribution capability
  - Effective distribution capability
- To address distribution constraints, DOE will sell approximately $1.2 billion worth of oil to construct marine terminals
3. The SPR is projected to provide substantial benefits to the national economy over the next 25 years and inventory reductions beyond the upcoming crude oil sales will compromise its ability to do so. Determining whether such further reductions are appropriate would require a fuller analysis of costs and benefits.
Economic Benefits Framework

• Basic Framework
  – Oil market risk profile based on expert elicitation
  – Probabalistic simulation modeling of the expected economic benefits of the SPR from 2016-2040
  – Allows for the comparison of various SPR sizes and capabilities

• Key Takeaways
  – The benefits of marine enhancements outweigh the costs
  – Reducing the inventory below 530 million barrels would reduce the SPR’s benefits by limiting the President’s authority
  – The benefits of a larger SPR inventory level off above 600 million barrels because most potential disruptions could be addressed with a smaller inventory
4. The SPR’s *continually shrinking storage capacity* will be able to accommodate the inventory levels mandated by the upcoming crude oil sales, but significant inventory additions would require the development of new storage.
Cavern Creep and Storage

• SPR caverns shrink by a total of about 2 million barrels every year due to
  – Natural creep
  – Induced creep

• Without the upcoming sales, this problem would become acute

• After the sales, rebuilding the SPR’s inventory to more than 600 million barrels would require adding storage
5. Operational requirements dictate that the SPR maintain its current \textit{four-site configuration}.
Four Sites will be Critical Going Forward

- Oil sales and life extension will necessitate the redundancy provided by four sites
- Closing a site would offer relatively minor cost savings
LTSR Conclusions

6. **Amending limited, discrete sections of EPCA would result in improvements and efficiencies to management and operating authorities governing the SPR and NEHHOR.**
For the full report visit: 
http://www.energy.gov/fe