Saudi Aramco’s Downstream Strategies

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Saudi Aramco’s downstream investments

- Saudi Aramco plans significant expansions in domestic and overseas downstream capacities.

### Main refining projects

<table>
<thead>
<tr>
<th>Location</th>
<th>Added capacity</th>
<th>Partner</th>
<th>Status</th>
<th>Start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fujian, China</td>
<td>+160 kb/d</td>
<td>ExxonMobil, Sinopec</td>
<td>Under construction</td>
<td>2008-09</td>
</tr>
<tr>
<td>Seosan, ROK</td>
<td>+480 kb/d</td>
<td>S-Oil</td>
<td>BOD approved</td>
<td>2010</td>
</tr>
<tr>
<td>Yanbu, KSA</td>
<td>+400 kb/d</td>
<td>ConocoPhillips</td>
<td>MOU signed</td>
<td>2011</td>
</tr>
<tr>
<td>Jubail, KSA</td>
<td>+400 kb/d</td>
<td>Total</td>
<td>MOU signed</td>
<td>2011</td>
</tr>
<tr>
<td>Port Arthur, US</td>
<td>+325 kb/d</td>
<td>Shell</td>
<td>Planned</td>
<td>2010</td>
</tr>
<tr>
<td>Qingdao, China</td>
<td>+200 kb/d</td>
<td>Sinopec, Local gov’t</td>
<td>Planned</td>
<td>2012</td>
</tr>
</tbody>
</table>

### Refining / petrochemical integration projects

<table>
<thead>
<tr>
<th>Location</th>
<th>Plants</th>
<th>Partner</th>
<th>Status</th>
<th>Start-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rabigh, KSA</td>
<td>Ethane cracker, HOFCC</td>
<td>Sumitomo</td>
<td>Under construction</td>
<td>2008</td>
</tr>
<tr>
<td>Ras Tanura, KSA</td>
<td>Ethane cracker, Aromatics</td>
<td>Dow</td>
<td>MOU signed</td>
<td>2012</td>
</tr>
</tbody>
</table>
Why invest in downstream?: Quantity reason

- Upstream capacity expansion creates additional marketing needs of crude oil.
  - Saudi Aramco has to find outlets to take the added barrels.
  - Such additional outlets should have a growing markets nearby and/or has to overcome a NIMBY issue.

Saudi Arabia’s crude oil for export (Estimate)

Note: All figures are presenter’s estimate based on publicly available information.
Why invest in downstream?: Quality reason

- The average quality of Saudi Arabian oil will become lighter until 2009; but will become heavier afterward.
  - How to sell unpopular heavier and sourer grades is a big challenge for Saudi Aramco.
  - Saudi Aramco needs to secure refining capacities that can process heavier grades in order to avoid deep discounts to such grades.

Shares of each grade’s production capacity (Estimate)

Note: All figures are presenter’s estimate based on publicly available information.

(ASL: Arab Super Light, AXL: Arab Extra Light, AL: Arab Light, AM: Arab Medium, AH: Arab Heavy)
Implications

► Saudi Aramco as a “downstream major”
  ■ Its influence over the world oil market increases as it becomes a significant product supplier beyond a crude oil supplier.

► Economics of new downstream investments
  ■ Profitability is subject to cost inflation and light-heavy price spread; but may be enhanced if combined with a petrochemical project.

► Impacts on the world product market
  ■ A large portion of products of new refineries in Saudi Arabia will be exported to Europe because of their high middle distillate yield.
  ■ The targeted market of new Asian refineries is China; but the Korean project may export products to US west coast, too.

► Solutions to an increase in heavier grade production
  ■ A packaged solution for heavy oil resources is a potential item for future collaboration with Saudi Aramco.