Cambodia Case Study
Update on Resource Assessment Activities

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Resource Assessment Methodology

- Constructing Common Risk Segment Map
  Charge Map: Near Base Miocene, enlarge to 1:100,000.

Reservoir Distribution Map: basin-wide distribution,

Mature SR
Moderate SR
Immature SR
Resource Assessment Methodology

- **Constructing Common Risk Segment Map**

  **Reservoir Quality Map**: Based on Woodside porosity map Seq. IV

  ![Reservoir Quality Map]

  - Good Porosity
  - Moderate to good Porosity

- **Constructing Common Risk Segment Map**

  **Structural Distribution Map**: Woodside Map, 1:100 000, near top seq. IV

  ![Structural Distribution Map]

  - Good to moderate Str.
  - Moderate to low Str.
  - Low or no Str.
**Resource Assessment Methodology**

- **Constructing Common Risk Segment Map**
  - Seal Map: no H to surface, fault seal, good regional seal.

- **Constructing the composite Map**
  - Structural Distribution and Reservoir Quality maps
Resource Assessment Methodology

- **Constructing the composite Map**
  Structural Distribution, charge and Reservoir Quality maps

- **Size distribution of Prospects**

  **Largest Prospect:**
  digitizing and calculating the gross rock volume from 3 horizons = 307 km²-m

  **Smallest Prospect:**
  Woodside report considers 2.5 bcf as its smallest size which roughly equivalent to 23 km²-m gross rock volume.
Resource Assessment Methodology

- **Size distribution of Prospects**
  Plotting on log probability paper

  - P05, 307 km²-m
  - P50, 60 km²-m
  - P95, 23 km²-m

- **Number of Prospects**

  Using this prospect map, the number of prospects were determined by counting the number of faults in the map. Each fault represents one prospect.
Resource Assessment Methodology

**Number of Prospects**

- **Risking**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green</strong></td>
<td>The probability that the attribute is present and effective in the area is high (1.0-0.6, low risk)</td>
</tr>
<tr>
<td><strong>Yellow</strong></td>
<td>The probability that the attribute is present and effective in the area is moderate (0.6-0.4)</td>
</tr>
<tr>
<td><strong>Red</strong></td>
<td>The probability that the attribute is present and effective in the area is low (0.4-0.0, high risk)</td>
</tr>
</tbody>
</table>

Area: 16.0862 km²

- High level of knowledge in the green area
- Use to calculate the area-number factor $n$ where
  
  $n = \frac{10}{24}$ or $n = 0.24$ pros./km²

Total number of prospects:

- Area = 24 km²
- 10 Prospects
Resource Assessment Methodology

**Number of Prospects**
Using the formula Number of P&L = n * area * probability

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Maximum</th>
<th>Mean</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green (prob. 1-0.6)</td>
<td>0.42<em>319</em>1 = 134</td>
<td>0.42<em>319</em>0.8 = 107</td>
<td>0.42<em>319</em>0.6 = 80</td>
</tr>
<tr>
<td>Yellow (prob. 0.6-0.4)</td>
<td>0.42<em>2094</em>0.6 = 528</td>
<td>0.42<em>2094</em>0.5 = 440</td>
<td>0.42<em>2094</em>0.4 = 432</td>
</tr>
<tr>
<td>Total</td>
<td>662</td>
<td>547</td>
<td>432</td>
</tr>
</tbody>
</table>

Resource Estimates

**Play Analysis in GeoX**
Distribution used:

Mean = 3.9 TCF

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min.</th>
<th>Mode</th>
<th>Max.</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRV (Km2-m)</td>
<td>23</td>
<td>60</td>
<td>307</td>
<td>Based on digitizing</td>
</tr>
<tr>
<td>NTG (decimal)</td>
<td>0.1</td>
<td>0.25</td>
<td>0.41</td>
<td>Based on well data</td>
</tr>
<tr>
<td>Porosity (decimal)</td>
<td>0.08</td>
<td>0.15</td>
<td>0.26</td>
<td>Based on well data</td>
</tr>
<tr>
<td>Trap fill (decimal)</td>
<td>1</td>
<td></td>
<td></td>
<td>Estimated</td>
</tr>
<tr>
<td>Sh (decimal)</td>
<td>0.45</td>
<td>0.55</td>
<td>0.65</td>
<td>Based on regional data</td>
</tr>
<tr>
<td>No. Prospects</td>
<td>432</td>
<td>547</td>
<td>662</td>
<td>From calculation</td>
</tr>
<tr>
<td>Rec. rate gas (decimal)</td>
<td>0.5</td>
<td>0.62</td>
<td>0.74</td>
<td>Based on regional data</td>
</tr>
</tbody>
</table>