Songo Songo West Prospect
A significant resource opportunity

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Outline

- Songo Songo Field development summary
- Songo Songo West (SS West) Prospect
  - Structure
  - Geologic model
  - Charge model
  - Recoverable resource estimation
- Conceptual development scenario
- Drilling objectives
- Acknowledgements
Songo Songo Field development summary

- First developed and largest commercial producing gas field in Tanzania and East Africa
- End 2007 audited 2P gross, life of field reserves 810 Bcf.
- Maximum gas processing capacity 90MMscfd. Six wells on main field capable of delivering in excess of 200 MMscfd.
- The field currently supplies in excess of 50% of electricity generation in Tanzania.
- 24 industrial sites in the Dar es Salaam region currently supplied.
- Developing CNG market.
- Songo Songo West prospect is a low risk, high potential resource, which could underwrite the expansion of the utilisation of gas.
SS West prospect is located approximately 2.5km west of the producing Songo Songo field:

- It is a geologically similar structure to Songo Songo field.
- It is anticipated to have the same reservoir as Songo Songo field.
- Located entirely within the Songo Songo licensed acreage (Discovery Blocks).

The discovery of gas by Aminex in the Kiliwani North field with a GWC ~30m deeper than Songo Songo proves there is significant upside to the resource potential of SS West.
SS West - Structure

- Elongate, N-S trending tilted fault block - extensional horst structure.
- Two structural culminations within the overall prospect.
- Low case (P90) resource model suggests that the two culminations will be joined by a common GWC, that is above the Songo Songo GWC.
- Mid case (P50) resource model GWC is based on the Cenomanian spill to the west.
- Spill for the main Neocomian reservoir is to the west and defines high case (P10) resource model.
SS West - Geologic model

- **Lower Cretaceous reservoir(s):**
  - Neocomian to Albian primary potential.
  - Cenomanian secondary potential, but distribution poorly understood.

- **Reservoir development predicted to be similar to Songo Songo field:**
  - Middle & upper shoreface to beach / foreshore environments.

- **Neocomian reservoir >1,200m thick in the 4 Songo wells that have drilled to the Upper Jurassic shales:**
  - High net to gross.
  - Good reservoir quality.
Primary source rocks for the region include the Permo-Triassic Karoo shales (gas prone) and Jurassic and Lower Cretaceous shales (oil & gas prone).

Vertical migration directly from sources beneath the Songo Songo regional high most likely gas migration route. Lateral migration from the east also possible.
SS West – Recoverable resource estimates

- Audited resources, September 2008.

<table>
<thead>
<tr>
<th>SSW Recoverable resource Bcf</th>
<th>P90</th>
<th>P50</th>
<th>Mean</th>
<th>P10</th>
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<tr>
<td>Neoc</td>
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<td>Total</td>
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- Geological chance of success is 52% (1:2) for the Neocomian & 35% (1:3) for the Cenomanian.

- Resources are dominated by the good quality Neocomian reservoir.

- Orca Management resource estimate:

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<td>Neoc</td>
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<tr>
<td>Total</td>
<td>255</td>
<td>546</td>
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<td>892</td>
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</table>
SS West – Conceptual development scenario

- Drill southern location first.
  - If successful, integrate with existing Songo Songo field facilities for a long term well test.

- Appraise structure in the north.
  - Prove aerial extent of reservoir and closure.
  - Improve reserve evaluation.

- Development via:
  - Two unmanned, wellhead platforms.
  - A new gathering manifold just upstream of the current SSI gas processing facilities
  - A new offshore pipeline from Songo Songo Island to shore.
  - Processing of gas onshore.
  - Transportation to Dar es Salaam via a new onshore pipeline.
  - Further trunk lines to more distant markets & connection to low pressure ring main from the Dar es Salaam end of the pipeline.
SS West - Drilling Objectives

- Songo Songo West is located in Jack-up territory: water depths 18 - 35m.
- Tanzania is a remote location in which to conduct drilling operations.
- Current global financial crisis means rigs are less utilised and day-rates are declining.
- Rig availability will be a key focus for well planning.
- Actively engage with other operators in East Africa to understand their intent to drill in shallow water and encourage a jack-up rig share:
  - Reduce mob. and de-mob costs.
  - Reduce shared service costs.
Acknowledgements

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- Tanzania Ministry of Energy and Minerals (MEM)
- Tanzania Electricity Supply Company (TANESCO)
- Tanzania Energy, Water and Utilities Regulatory Authority (EWURA)

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