PNG Oil Operations

AGENDA:
¬ PNG Production:
  ¬ 2007 update
  ¬ 2008 focus areas
  ¬ Life of field
¬ Operating Environment:
  ¬ Rig update and strategy
  ¬ Cost environment
¬ Oil and Gas Interface Issues
¬ PNG Oil Exploration
¬ Corporate Summary
PNG Production
Overall:

- **Underlying field performance is strong in all fields and reservoir management activities have been encouraging**
- **Kutubu:**
  - Decline has largely been mitigated by UDT7 and reservoir management activities. Performance of UDT7 remains encouraging
- **Moran:**
  - Impacted by NW Moran shut-in for 6 months and the poorer performance of M6 post-workover. Issues resolved in 2H and 2007 forecast to exceed 2006 by 5%
- **SE Mananda:**
  - Steady as a result of the improved field management
- **Gobe Main:**
  - Adversely affected by the gas compression shutdown during 4Q’06. Programme to convert to Upper Iagifu production is proceeding well
- **SE Gobe:**
  - Adversely affected by the gas compression shutdown. The Wedge area (SEG11) continuing to perform well
- **Hides:**
  - 1Q production affected by Porgera JV turbine maintenance
  - Operations resumed during 2Q and demand is currently exceeding forecast
2008 Focus Areas

- **Usano**: 4-6 development wells, optimised with Arakubi outcome
- **SE Gobe**: Possibly 1 development well
- **Moran**: 3 development wells and selected workovers
- **Kutubu**: 2 development wells and selected workovers
- **Agogo**: Possibly 1 development well
**2008 Plan**

- A continuous drilling campaign at Usano
- Kutubu wells in 2H with 2nd rig
- 5-8 workovers anticipated in 2H 2008
- Develop focussed waterflood plan
- Further optimise gas injection
- Usano and Kutubu wells provide competitive returns on investment
Usano Development

- An under-developed field with significant infill potential
- UDT 7 performing well and above expectation
- 4 – 6 wells likely in 2008
- First two wells confirmed at UDTG and UDT C, remaining programme to be optimised based on Arakubi outcome
2008 Plan

- Drill new infill wells:
  - Downdip producer MZ in the NW
  - Crestal gas injector MR in B block
  - Downdip producer M10 sidetrack
- Optimise well rates and balance off take with injection
- Control well GOR with rate control, by changing zones and swing well management
- The three Moran wells provide competitive returns on investment
2008 Plan

- Continued emphasis on maintaining current production rates through 2008
- Consolidate Iagifu A production from up to 4 zone changes:
  - GM4ST3, GM2ST1, GM1ST2, G2X (Hedinia)
- Water handling and gas compression optimisation
- Implement options to return GM7 to production
2008 Plan

- Implement options to bring SEG 1ST1 on line, and access Iagifu B in SEG 8
- Maintain water injection support to SEG Wedge
- Water handling and gas compression optimisation
- Possible infill/appraisal well subject to technical work (not included in forecast)
  - Iagifu B target in SEG 1 Block area
  - Iagifu A/B Target in G7X block area
2008 Plan

- Continue to revise geological & reservoir models to improve understanding of field and make better performance predictions
- Continue to improve uptime efficiency
- Use well production data to improve understanding of field structure and drainage volumes
PNG Gross Production

Oil Production (bopd)

Natural decline

P10
P50
P90
Life of Field

- Life of field analysis being conducted:
  - Reviewing track record
  - Full resource potential of fields
  - Cost effective ways to optimise reserves and production.
- Work in progress at the moment but positive initial results:
  - 60 mmstb+ unrisked potential from 40 activities
  - Risked P50 contingent resources of 17 mmstb estimated

Source: RISC
We have consistently underestimated production 3 to 5 years out:

- Focus on the benefit from next year’s activity
- Risking less mature opportunities
- Probabilistic forecasting tool will assist in improved forecasting of production in the near term

**PNG Oil Production Budget Forecast vs Actual 2002-2007**

Source: RISC
PNG Operating Environment
PNG Rig Update

- **Rig 101:**
  - Refurbishment, commissioning and crewing successfully completed
  - Currently drilling Korobosea
  - Future plans include Cobra, Wasuma and possibly Barikewa or Gobe

- **Rig 3:**
  - Commissioning complete and rig being mobilised to site
  - Drilling contractor secured and resourcing on track
  - Target early December 07 spud for Usano campaign – sites and flowlines ready

- **Rig 226:**
  - Drilling Arakubi sidetrack then to NW Paua by road
  - Then to Moran for development wells

- **Rig 4:**
  - Delivery 3Q08. Costs maintained

- New Rigs provide upgraded capability and dual sub-structure and mast to improve drilling efficiency and minimise moving time between wells

- Strategy review considering the optimum rig numbers, balancing future development, exploration and appraisal requirements for oil and gas and the optimum cost structure
Cost Management

Cost pressures:
- Impact of A$ appreciation
- Inflationary pressures:
  - Commodities
  - Transportation costs
  - Equipment and contractor costs
  - Drilling consumables

Mitigation measures:
- Ongoing tight cost control
- High grading of opex projects
- Overhead challenge
- Special projects:
  - Aviation efficiency
  - Supply chain optimisation

Target:
- Small increase in 2H07 due to planned MEJs, strong dollar, targeting no real increase in per barrel costs in 2008
Oil and Gas Interface
Oil and Gas Interface

- Oil fields provide significant P1 and P2, low development cost gas resource to the LNG project
- Gas development provides benefits to the oilfields:
  - Operating cost sharing
  - Reserves bookings and amortisation improvements
  - Possible tax rate improvements subject to negotiation with the State
  - Incremental pipeline tariffs
  - Incremental condensate
  - Abandonment cost deferral
- Current thinking:
  - Oil Search remains Operator of the oil fields
  - Oil fields have gas delivery obligations but retain flexibility to optimise oil
  - Gas offtake has positive impact on oil production and appears rate insensitive
PNG Exploration
PNG Exploration 2008

- Oil - Remaining 2007 & 2008 programme testing ~25-30 mmbbl net risked reserves
- Gas - exploration/appraisal to add reserves to support commercialisation projects – testing ~30mmboe net risked reserves
- PNG 2007 exploration budget US$120m net
- Planned 2008 exploration budget up to ~US$80m net subject to budget reviews
- Continued seismic for gas and oil exploration/appraisal, in Highlands, Forelands and Offshore
- Active programme to optimise interests in existing licences and new venture opportunities
**PDL 2 - Arakubi**

- Located 2km from infrastructure, connected by road
- Arakubi 1A proved the presence of excellent Toro and Iagifu reservoirs
- Structure is folded tighter than initially mapped. Mean reserves now ~15 mmstb
- Up dip side track underway

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<th>WI %</th>
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<td>Oil Search</td>
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*ExxonMobil did not participate in initial Arakubi well*

- Reserves: 15 mmstb
- COS: 50%

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**Map Notes:**
- ARAKUBI
- PDL2
- Reserves: 15 mmstb
- COS: 50%
PDL 2 - Arakubi

Schematic section – well currently at top reservoir in sidetrack

South

- Possible steep thrust
- Possible extension of Usano East block
- Backlimb of Usano Main Block – c. 40 deg dips
- Possible deepening of sidetrack?

North

- Arakubi 1A sidetrack
- Arakubi 1A
- Fault penetrated @3184mMD

UEBT Thrust Fault?
Highly prospective structure adjacent to Moran
Digimu target with Toro secondary
Large upside
Partially constrained by Paua 1X well (1996)
Important test of ‘next trend’
New seismic acquired in 2005
Site construction complete
Oil Search operating on behalf of Esso
To be drilled Q4 2007 after Arakubi

Reserves: 40-120mmstb (depends on column height and number of reservoirs)
COS: 24%
**PPL 190 – Cobra**

- **Near field exploration opportunity**
- **Seismically defined structure adjacent to SE Gobe**
- **Test of Footwall play with potential to open up a significant new fairway**
- **Iagifu sandstone is primary objective**
- **Well site under construction**
- **To spud late 2007 after Korobosea**

**PPL 190** | **WI %**
---|---
Oil Search | 62.6
Murray Petroleum | 26.5
Cue PNG Ltd | 10.9

**Reserves:** 30-40mmsstb  
**COS:** 17%
PPL 219 – Wasuma

- Reserves: 30-40mmstb
- COS: 20%

- Near field exploration opportunity
- Seismically defined structure to north of Gobe
- One of the last un-drilled ‘simple’ Hanging wall structure within the main Foldbelt trend
- Iagifu sandstone is primary objective
- Well site construction scheduled to start late 2007
- To spud Q1 2008 after Cobra

<table>
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<td>Merlin Petroleum</td>
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Prospect updip from Mananda 3 and 4

Site construction to commence Q1 2008

Drilling late 2008/early 2009

Reserves: 30-70mmstb (depends on fluid phase and number of reservoirs)

COS: 20%

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Two core areas;

Foreland
- Korobosea (0.5 tcf @ 19% COS, OSH @ 90%)
- Kimu (0.85 tcf)
  OSH @ 60.7%
- Barikewa (0.72 tcf)
  OSH @ 42.5%
- Farm-in opportunities

Offshore
- Pandora (1.5 tcf)
  OSH @ 5%
- Near field exploration opportunities
  - Flinders
  - PPL 234
  - APPL 293
Oil exploration
- 25-30mmstb net risked reserves being tested
- Net well cost ~US$60m
- Arakubi, NW Paua, Cobra, Wasuma

Gas - Co-ordinated programme to add reserves to support commercialisation projects
- Exploration
  - 1 well - Korobosea
  - Net well cost US$22m
  - Possible Flinders offshore well late 2008
- Appraisal
  - 1 gas appraisal well - Barikewa
  - Net well cost US$8m
Continued seismic for gas and oil exploration/appraisal
  - Highlands 50km firm, up to 100km depending on well results
  - Offshore
    - Up to 1,000km infill for PPL 234
    - Up to 5,000km regional grid for APPL 293
    - Possible 3D over Pandora

Ongoing review of farm-in opportunities onshore and offshore

Total 2008 PNG exploration budget up to US$80m net (subject to budget)