MOZAMBIQUE FIFTH LICENSING ROUND

TECHNICAL DATA

Please send / deliver your application to:

(See Guidance Notes)

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MOZAMBIQUE FIFTH LICENSING ROUND

TECHNICAL DATA

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1 INTRODUCTION

The Government of the Republic of Mozambique, through the Ministry of Mineral Resources and the Institute of National Petroleum (INP) invites Oil & Gas Companies for the onshore competitive bidding round to explore for hydrocarbons in the offshore Rovuma, offshore Zambezi and Anoche, and onshore Pande-Temane and Palmeira areas.

In the Fifth Licensing Round, companies may apply for an Exploration and Production Concession Contract (EPCC).

This document provides more detail about the technical data available to license in support of applications.

DATA LICENSE AGREEMENT

- All INP released data is available to license subject to signature of a standard Master Licensing Agreement (MLA) with INP. The MLA can be downloaded from www.inp-mz.com or requested from the contacts listed in section 4.
- Data is also available to license from a number of multi-client service companies, as detailed in section 3.2.
- The cost of the Technical Data licensed can be offset against the exploration expenditure obligations of the EPCC.
- The technical database (that an applicant company has) forms a key part of the evaluation criteria.

DATA ROOM

The INP technical database is available to view in a Data Room.

INP is hosting a Data Room at its offices in Maputo and ERCL is hosting a data room in UK (details included in section 3 of this document).

The INP website (http://www.inp-mz.com) includes general information about the Fifth Licensing Round and the availability of technical data.

If you have any further queries, clarification or additional information please see contact information at http://www.inp-mz.com, email info@inp-mz.com or contact the representatives listed in section 4.
2 AREAS IN MOZAMBIQUE FIFTH LICENSE ROUND

INP has grouped the blocks in to fifteen (15) separate defined blocks as follows:

- Rovuma offshore (R5-A, R5-B and R5-C),
- Angoche offshore (A5-A and A5-B)
- Zambezi offshore (Z5-A to Z5-F)
- Pande - Temane area (PT5-A, PT5-B and PT5-C)
- Palmeira area (P5-A)

Areas on offer in the Fifth Licensing Round are shown overleaf. In total, some 74,700 sq kms of acreage is being made available for licensing throughout the territory of Mozambique.

Areas that adjoin each other maybe linked and combined in to a single application.

Applicants can only apply for the whole of the defined area and present a work program that evaluates all the blocks. Minimum work programmes have been defined for the various blocks.

Further details on the blocks on offer in the Fifth Licensing Round are provided on the following website - http://www.inp-mz.com/.
MOZAMBIQUE FIFTH LICENSING ROUND
Areas on Offer
3 TECHNICAL DATA

INP, with assistance from ERCL, has compiled a comprehensive technical database, using all the released technical data, and these data are available for licensing by companies applying in the Mozambique Fifth License Round.

The available data are described in detail in this section 3 and further information can be downloaded from www.inp-mz.com and www.ercl.com/multi-client/mozambique.

There are also a number of other datasets including regional seismic, gravity, magnetic and geological data available to license from other parties. These data and sources are referenced in section 3.2.

The available technical data demonstrate the Exploration History of Mozambique and are available to license to assist companies evaluate the Petroleum Potential and Prospectivity of the Mozambique Basins both onshore and offshore.

Mozambique Basins Technical Data;

All available onshore technical data can be licensed directly from INP and other third party entities.

Master License Agreement

All INP data is licensed subject to signature of a standard Master Licensing Agreement (MLA) with INP.

The MLA can be downloaded from www.inp-mz.com or requested from the contacts listed in section 4.

Note:

- The cost of licensing the technical data can be offset against the exploration expenditure obligations of the EPCC.
- The technical database (an applicant company has) forms a key part of the evaluation criteria.
3.1 **INP GEOTECHNICAL DATA**

The INP technical database has been prepared from all the available from within it archives and includes:

- INP – Technical Reports
- INP – Well Data
- INP – Seismic Data
- INP – Gravity & Magnetic Data
- INP-ERCL – Mozambique Digital Atlas (MOZDA)

The available technical data reflect the exploration activities that have been undertaken in Mozambique. A Price List is available from INP/ERCL on request. ERCL has used the released technical data to prepare a regional review of the Zambezi Delta and also in the preparation of the Mozambique Digital Atlas (MOZDA) as described below in section 3.1.7.

The data are available to license from INP to assist companies evaluate the Petroleum Potential and Prospectivity of the Mozambique Basins both onshore and offshore.

3.1.1 **TECHNICAL REPORTS**

For the Mozambique Fifth Round INP has identified a number of key regional technical reports that have been prepared by various companies. These key regional reports are listed below:

- The Petroleum Geology and Hydrocarbon Prospectivity of Mozambique, ENH/ECL, 2000
- The Hydrocarbon Potential of Mozambique, Alconsult International Ltd, 1996
- The Source Rock Potential of Mozambique, Robertson Research, 1986
- Offshore Mozambique Sedimentary Basins, ENH, 1994
- Petroleum Potential in the Southern Mozambique Basin, CANOP, 1997
- Surface Geochemical Exploration, Offshore Zambezi, Petronas - TDI Brookes, 2007
- An Evaluation of Prospectivity – PSA Offshore Zambezi, BP, 1999 (full report available with licensing of the BP98 2D survey)
- Interpretation Report, TEA Mozambique Channel, Elf 2000 (available as a package including c. 1,500 kms of 2D seismic data)
- Evaluation of the remaining Hydrocarbon Potential, Limpopo Block, Sasol, 1997
- Assessment of Hydrocarbon Potential, Cretaceous Plays, SW Offshore, Shell 1990
GIS versions of the technical reports have been prepared and are available in ArcMap, ArcReader and QGIS format. A common structure has been used to create the GIS versions of the reports, such that the reports can be merged into a single GIS project.

For companies that have already licensed the above reports, the GIS version is available to license for a fee detailed on the Price List.

Under its agreement with INP, ERCL has recently completed a technical review of the offshore Zambezi Delta, and this study is also available:

- Review of the Petroleum Geology & Prospectivity of the Zambezi Delta, 2014

The regional reports provide a definitive technical reference for hydrocarbon exploration in Mozambique.

### 3.1.2 WELL DATA

Data for over 100 wells have been released by INP. INP has created a digital well data base of this data which is summarized in a spreadsheet which can be downloaded from [www.inp-mz.com](http://www.inp-mz.com).

For the Fifth Round, INP has defined some 22 key regional wells, as tabulated below.

#### Key Offshore Wells – South Mozambique

<table>
<thead>
<tr>
<th>Well name</th>
<th>Year drilled</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nemo-1X</td>
<td>1969</td>
<td>Gulf Oil</td>
</tr>
<tr>
<td>Njika-1</td>
<td>2008</td>
<td>Sasol Petroleum</td>
</tr>
<tr>
<td>Njika-2</td>
<td>2009</td>
<td>Sasol Petroleum</td>
</tr>
<tr>
<td>Sangussi Marin-1</td>
<td>1971</td>
<td>Aquitaine</td>
</tr>
<tr>
<td>Sengala-1</td>
<td>2000</td>
<td>Sasol Petroleum</td>
</tr>
<tr>
<td>Sengo Marin-1</td>
<td>1971</td>
<td>Aquitaine</td>
</tr>
<tr>
<td>Sofala-1</td>
<td>1970</td>
<td>Gulf Oil</td>
</tr>
<tr>
<td>Sofala-2</td>
<td>2000</td>
<td>Sasol Petroleum</td>
</tr>
<tr>
<td>Zambezi-1</td>
<td>1970</td>
<td>Hunt Petroleum</td>
</tr>
<tr>
<td>Zambezi-3</td>
<td>1971</td>
<td>Hunt Petroleum</td>
</tr>
<tr>
<td>Z-DE-1</td>
<td>2007</td>
<td>Petronas Carigali</td>
</tr>
</tbody>
</table>

#### Key Offshore Wells – Rovuma

<table>
<thead>
<tr>
<th>Well name</th>
<th>Year drilled</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buzio-1</td>
<td>2013</td>
<td>Statoil</td>
</tr>
<tr>
<td>Cachalote-1</td>
<td>2013</td>
<td>Statoil</td>
</tr>
</tbody>
</table>
Key Onshore Wells

<table>
<thead>
<tr>
<th>Well name</th>
<th>Year drilled</th>
<th>Operator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chite-1</td>
<td>2010</td>
<td>DNO Mozambique</td>
</tr>
<tr>
<td>Corone-1</td>
<td>2004</td>
<td>DNO ASA</td>
</tr>
<tr>
<td>Inhaminga High-1</td>
<td>2011</td>
<td>DNO ASA</td>
</tr>
<tr>
<td>Micaune-1</td>
<td>1966</td>
<td>Gulf</td>
</tr>
<tr>
<td>Mocimboa-1</td>
<td>1986</td>
<td>Esso/Shell</td>
</tr>
<tr>
<td>Nhamura-1</td>
<td>1971</td>
<td>Aquitaine</td>
</tr>
<tr>
<td>Rio Nhanguazi-1</td>
<td>1971</td>
<td>Aquitaine</td>
</tr>
<tr>
<td>Sangussi-1</td>
<td>2008</td>
<td>DNO ASA</td>
</tr>
<tr>
<td>Savane-1</td>
<td>2004</td>
<td>DNO ASA</td>
</tr>
</tbody>
</table>

For the key wells tabulated above oil companies can license either a basic well package (including standard well information such as digital LAS files, well summary, well logs, time depth information and formation tops) of a full well package (to include additional well reports as available on well by well basis).

Added value products available in addition include:

- New well summary sheets
- New well composites
- Qc’d LAS/LIS
- Input log headers details from FWRs
- Well CAD Projects
- Petrophysical reports for key wells
- Pre-loaded IP (software) project
- Petrophysical Interpretation reports and CPIs

Well License Fee Costs

- For the historic wells, individual well folders are available on a single well basis. Packages for the purchase of multiple wells are available (as detailed on the Price List).

- For the more recent key wells there is a price for a basic well package and an uplift for the full well package. The ERCL petrophysical results are available for an additional uplift.

Note:

The well database is being regularly updated to include further information that is currently being retrieved from INP archives.
3.1.3 SEISMIC DATA

The INP released seismic data includes 2D surveys of various vintages and a 3D survey acquired by Sasol (Block 16 & 19 3D Survey, 2007). The released 2D surveys available to license from INP includes the following surveys:

<table>
<thead>
<tr>
<th>Offshore Surveys</th>
<th>Onshore Surveys</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Survey Name</strong></td>
<td><strong>Year</strong></td>
</tr>
<tr>
<td>AMM10_98</td>
<td>1998</td>
</tr>
<tr>
<td>AMS-98</td>
<td>1998</td>
</tr>
<tr>
<td>SPS 2008 (in part)</td>
<td>2008</td>
</tr>
<tr>
<td>Block 16/19-3D (in part)</td>
<td>2007</td>
</tr>
<tr>
<td>BP-98</td>
<td>1999</td>
</tr>
<tr>
<td>ENH-84</td>
<td>1984</td>
</tr>
<tr>
<td>ENH-85</td>
<td>1985</td>
</tr>
<tr>
<td>GMC-81</td>
<td>1982</td>
</tr>
<tr>
<td>GMR-81</td>
<td>1981</td>
</tr>
<tr>
<td>ION-GTX</td>
<td>1984</td>
</tr>
<tr>
<td>JNOC</td>
<td>1984</td>
</tr>
<tr>
<td>LRP-98</td>
<td>1998</td>
</tr>
<tr>
<td>MOZ-00</td>
<td>2000</td>
</tr>
<tr>
<td>MOZ-08</td>
<td>2008</td>
</tr>
<tr>
<td>MP 2008 Sofala (in part)</td>
<td>2008</td>
</tr>
<tr>
<td>NH0709 (in part)</td>
<td>2007/09</td>
</tr>
<tr>
<td>NTMOZ</td>
<td>1987</td>
</tr>
<tr>
<td>SM81</td>
<td>1981</td>
</tr>
<tr>
<td>STE1D</td>
<td></td>
</tr>
<tr>
<td>STK (in part)</td>
<td>2010</td>
</tr>
<tr>
<td>SZD-03</td>
<td>2003</td>
</tr>
</tbody>
</table>

Seismic data is also available to license from third parties, as described in section 3.2 and detailed in the Appendices.

A Price List for the available seismic data is available from INP/ERCL on request. As described in section 3.1.6, INP has prepared an ArcReader GIS project that provides details of all released INP well and seismic data.

For some surveys, only part of the survey is currently available to license (data in areas covered by current exploration contracts remains confidential to the operator). For some surveys there are multiple data types and processing vintages available to license from INP. For the released seismic surveys, details of acquisition and processing / reprocessing parameters and line listings are available for review in the Data Room in excel format. In addition, a two page summary for each survey, outlining the data deliverables for each survey is available on request.
On behalf of INP, ERCL has made considerable efforts to provide a high degree of QC to the SEGY data deliverables. Thus INP will deliver to Licensee high quality (HQ) SEGY files will full header information for the majority of the released seismic data.

The HQ released seismic SEGY data includes:

- Navigation details
- Acquisitions details
- Processing details
- Amplitude Balancing
- Reference to input data files

Well synthetic ties and new time depth charts for a number of key wells are also available as part of the Mozambique Digital Atlas (MOZDA) as described below in section 3.1.7.

**INP Regional Composite Lines**

INP has worked with ERCL in the preparation of a series of over 50 regional composite seismic profiles (totaling over 16,500 line kms of seismic data) to provide a regional framework for Mozambique. The profiles link different vintages of seismic data, and a number provide onshore – offshore sections.

The Composite Lines are available to license as part of the Mozambique Digital Atlas (MOZDA) as described below in section 3.1.7.

### 3.1.4 WORKSTATION PROJECTS

Providing that the seismic data has been licensed, INP will issue the final SEGY data directly to the Licensee, and ERCL can provide the seismic data in the following workstation formats:

- Kingdom
- Petrel
- GeoGraphix
- DUG Insight

### 3.1.5 GRAVITY AND MAGNETIC DATA

INP can provide Gravity and Magnetic data packages over the whole of onshore and offshore Mozambique areas. Regional Gravity and Magnetics data are included in the Mozambique Digital Atlas (MOZDA) product, see section 3.1.7.

Licensing fees are dependent on data sets selected.

The figure overleaf illustrates the various gravity and magnetics datasets available.
MOZAMBIQUE FIFTH LICENSING ROUND
Illustration of Gravity and Magnetics Database and Mozambique Magnetic Grid

3.1.6 RELEASED DATA GIS PROJECT

INP has prepared an ArcReader GIS project that provides details of all released INP well and seismic data. This is available on request and is provided at no cost and is available to be downloaded from www.inp-mz.com.

This project is updated on a regular basis and is available on request at no cost to companies to assist in preparation of license applications.
MOZAMBIQUE FIFTH LICENSING ROUND
Example from ArcReader Released Data Project
3.1.7 MOZDA PROJECT (See Appendix 1)

The Mozambique Digital Atlas (MOZDA) is an interpretive product undertaken by ERCL staff in collaboration with INP. MOZDA aims to provide a regional geological framework for Mozambique.

MOZDA is based on the released INP technical database, and the underpinning data is available to license separately.

MOZDA includes:

- Well data (including headers and formation tops for key wells)
- Well to seismic ties
- A regional seismic stratigraphic framework based on the interpretation of a number of key regional composite lines
- An interpretation of key regional horizons
- Potential field (gravity and magnetics) data

INP has worked with ERCL in the selection of a series of over 50 regional composite seismic profiles (totalling over 16,500 line kms of seismic data) to provide a regional framework for Mozambique. The profiles link different vintages of seismic data, and a number provide onshore – offshore sections. The regional composite seismic
profiles vary from 50 to 734 kms in length and a SEGY file for each composite profile has been generated. In addition to final stack/migrations, 3D Amplitude Summation processing has been applied to the lines, and is available to license.

Regional wells included within MOZDA have been tied to the regional composite seismic profiles. Well montages, well summary sheets, formation tops and time depth data are included, with additional well correlation panels. (Note that the underpinning well data are available for licensing separately).

The following regional horizons have been picked on the composite profiles and mapped across the main basins, using additional INP seismic data where necessary:

- seabed,
- top Pliocene,
- mid Miocene,
- base Tertiary,
- top Lower Domo Shale,
- lower Cretaceous (Aptian) unconformity,
- basement

MOZDA is available to license via the INP Master License Agreement. The first release for MOZDA is expected to be end October 2014, with a further update by end December 2014. It is envisaged that MOZDA will evolve, and companies will be offered the opportunity to subscribe to an online portal to access developments to the study through 2015 and beyond.

In the 2014 releases, which will be issued on USB with components provided in industry standard format (ArcGIS / ArcMap / maps in grid files etc), there will be two options:

- “MOZDA Light” – excludes seismic SEGY data
- “MOZDA Full” – includes SEGY data for INP composite profiles selected by licensee

Companies will be able to select which regional composite lines they wish to license in full (for access to the SEGY files), with lines priced individually and discounts available subject to volume licensed.

The contents listing for the 2014 release is included in Appendix 1.
3.2 NON EXCLUSIVE TECHNICAL DATA

3.2.1 Schlumberger – See Appendix 2 for more details

Schlumberger has over 110,000 km of exclusive 2D seismic data available for licensing, including more than 36,000 km of new broadband seismic data acquired in 2013 and 2014 using the ObliQ® sliding-notch broadband acquisition and imaging technique. In preparation for the 5th License Round, Schlumberger has also reprocessed approximately 15,800 km of the existing surveys.

Added to recent reprocessed seismic data in the region, the new high-quality seismic data is available to assist in reducing exploration risk for the upcoming licensing rounds. The clarity and scope of the new survey, complementing the reprocessed data, enables exploration companies to, identify and map geological structures and potential traps for a better understanding and evaluation of the basin’s potential.

Further details of seismic data available to license from Schlumberger are provided in Appendix 2.

For additional information please contact:
  Guillaume Mouscadet: +44 7881840899
  Sandra Lane +447717346651
  Email: eafmc@slb.com
  www.slb.com/multiclient

3.2.2 ION – See Appendix 2 for more details

In support of the Government of Mozambique’s 5th Licensing Round, ION is pleased to offer, as part of its East Africa Geological Study, six lines of long offset, long record, pre-stack depth migrated SPAN data within the open acreage being promoted by INP. Some 2,477 kms of SPAN data have been acquired in Mozambique.

The East Africa BasinSPAN™ project consists of 20,000 km of SPAN data recently complemented by a further 8,000 km of new data in the Comoros, providing extensive regional coverage in the margin to evaluate this license opportunity. SPAN Data is characterized by regional lines of long offset (10 kms) and long record (18 seconds) data. Pre stack time and pre stack depth migration, angle stacks and gathers, plus gravity and magnetic data are available.

Further details are provided in Appendix 3. For additional information please contact:
  Dave Baker, Manager Africa Governmental Affairs, ION-Geoventures
  Phone +44 1784 497 630
  Email dave.baker@iongeo.com
3.2.3 BGP

BGP was awarded rights to undertake a multi-client onshore 2D seismic survey of some 3,100 line kms in Area C (tender T4, onshore Zambezi and southern Mozambique Basin). At the current time, these data have not been acquired.

For additional information please contact:

Qiang Zhu, Chief Economist of BGP International, zhuqiang@bgp.com.cn
Jicheng Shi, General Manager of BGP East Africa, shijicheng@bgp.com.cn or
Simon Bowen, Project Development Manager - AME, Simon.Bowen@tgs.com

3.2.4 ARKeX

ARKeX Ltd was awarded a number of multi-client tenders for the acquisition of airborne gravity and magnetics data by INP in 2011. These awards included rights to acquire data onshore northern Mozambique (GM1, around Lago Niassa), onshore southern Mozambique (GM2) and offshore around the Beira High. At the current time, these surveys have not been acquired.

For additional information please contact Anne-Marie Liszczyk, Sales Geophysicist EAME, anne-marie.liszczyk@arkex.com.

3.2.5 CORELAB REGIONAL STUDY

Under an agreement with INP, Core Laboratories is planning to undertake a Regional Reservoir and Seal study of the basins of Mozambique. This study will provide a detailed evaluation of reservoir, source and seal rocks within a correlative stratigraphic and structural framework, from c. 40 wells across the coastal region of Mozambique.

Further details are provided in Appendix 4 and are available from:

Firoze Din, Vice President, Integrated Reservoir Solutions

Phone      +44(0)1737 859660
Email      firoze.din@corelab.com
3.3 DATA ROOM
Data rooms are available to allow companies to view the INP released database in the offices of INP (Mozambique) and ERCL (UK). The data available to view in the data rooms includes:

- INP Digital Library
  - Technical Reports
  - Well Folders
- Hardcopy of Key Technical Reports (supplied as pdf in data packages) and GIS versions.
- Regional Seismic Composites
- Mozambique Digital Atlas (MOZDA)
- Kingdom Workstation Project – all released data
  - INP seismic data
  - INP well data

Entry to the data room will require signature of the “data room rules” (available on request from data room coordinators). This requires that the name, title and company of each visitor viewing the Information be disclosed in writing at the time the appointments are made, and any changes thereto should be notified in writing before entry to the respective Data Room. A small charge for attending the Data Room at INP / ERCL offices is made. The purpose of the Data Room is to give oil companies the opportunity to review the data before committing to purchase of data packages.

Companies may take away information on the available INP technical database in the form of screen captures (usually released by the data room coordinator as an Acrobat format presentation), restricted to internal use within their company, to enable them to review the data quality at their home offices.

Once the data package has been purchased the Master Licensing Agreement (MLA) and relevant Supplement Agreement governs the use and copying of the data.

**MOZAMBIQUE DATA ROOM**
INP Maputo – Mozambique (9.00 a.m. and 5.00 p.m.) Monday to Friday.
Coordinator – Inocencia Maculuve

Appointments should be made via email to info@inp-mz.com

**UK DATA ROOM**
ERCL – Henley-on-Thames (9.00 a.m. and 5.00 p.m.) Monday to Friday.
Coordinator – Richard Heath

Appointments should be made via email to richard.heath@ercl.com
4 FURTHER INFORMATION

For further information about the Mozambique 5th Licensing Round please email info@inp-mz.com or visit www.inp-mz.com

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Oxon, RG9 1AT
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www.ercl.com
5 APPENDICES

5.1 Appendix 1 Contents for MOZDA 2014 Release

MOZDA is a joint project between INP and ERCL.

The first release will be 31st October 2014 and this release will focus on the digital deliverables which will be in ESRI ArcGIS software. A second release will be issued at end December 2014.

The first release text volume release (contents as listed below) will contain a short introduction and description of methodology along with the text from the last major integrated regional study (by ENH/ECL in 2000). Additionally a newly completed synthesis by ERCL of the regional geology of the offshore Zambezi delta area will be provided in Chapter 5, and the 2014 ERCL Zambezi report will be incorporated in full within the MOZDA release.

In Chapters 6 to 8, there will be a number of new figures which have been created to aid data management as well as to summarise available well and seismic data from the legacy database. The main deliverables include over 50 newly created regional profiles, and key well and regional well summary sheets which will be provided as hard copy as well as being linked to the GIS project deliverable. A number of well correlations and well synthetics will be included, again linked to the GIS. Summary sheets will be provided for all released seismic surveys, detailing both acquisition and processing parameters as well as figures illustrating their location.

Appendices contain published volumes which summarise projects completed through the Geological Survey of Finland and the World Bank.

Future text volume deliveries will update the remaining onshore and offshore basins of Mozambique (for example the Angoche and Rovuma Basins) with the results of recent exploration activities (update to section 3).

Following the end December 2014 update, in which we plan to include results of 2D gravity/seismic modelling for some key regional profiles, the aim is to release annual updates thereafter.
MOZDA CONTENTS (Release 1)

1. Introduction

2. Overview of MOZDA
   2.1 Summary of INP Technical Database
   2.2 Methodology Used
   2.3 MOZDA Outputs and Data Format
   2.4 Planned Future MOZDA Releases

3. Summary of Oil & Gas Exploration in Mozambique
   3.1 Exploration History
   3.2 Gas Field Developments
   3.3 Petroleum Exploration Database
   3.4 Previous Licensing Rounds
   3.5 Current Approach to Licensing


6. Regional Composite Profiles. A3 size copies of un-interpreted seismic (final stack / migration and 3D Amplitude Summation) and interpreted geoseismic profiles covering both onshore and offshore Mozambique. These will have a legend but text describing the regional geology. Electronic copies in Acrobat format.

7. Well summary sheets for all released wells in Mozambique. There is an ongoing program to update all these into a standard format. At present you will get a mixture of styles.

8. Seismic Survey details. These standalone sheets describe the acquisition, processing and where applicable re-processing parameters for all released surveys

9. Appendices-Published Reports
   Appendix 2: Explanation of the Geological Map of Mozambique 1:1,000,000. Direcçao Nacional De Geologoca, Mozambique. 2011
5.2 Appendix 2 Details of Schlumberger-WesternGeco Multiclient Seismic

Schlumberger has over 110,000 km of exclusive 2D seismic data available for licensing, including more than 36,000 km of new broadband seismic data acquired in 2013 and 2014 using the ObliQ* sliding-notch broadband acquisition and imaging technique. In preparation for the 5th License Round, Schlumberger has also reprocessed approximately 15,800 km of the existing surveys.

Added to recent reprocessed seismic data in the region, the new high-quality seismic data is available to assist in reducing exploration risk for the upcoming licensing rounds. The clarity and scope of the new survey, complementing the reprocessed data, enables exploration companies to identify and map geological structures and potential traps for a better understanding and evaluation of the basin’s potential.

Data available exclusively from Schlumberger Multiclient
Recently acquisition highlights

36,000 km of Seismic Offshore Mozambique, covering the areas offered in the 5th Licensing Round: Rovuma, Angoche, and Zambezi Delta:

- ObliQ acquisition and imaging technique
- Long-offset 10-km streamer
- Anisotropic Kirchhoff prestack time migration (PSTM)
- Gravity and magnetics

Advanced reprocessing highlights

The reprocessing focuses on the Zambezi Delta area and consists of approximately 15,800 km of the MBWG surveys acquired in 1998, 1999, and 2000. The ongoing reprocessing also includes a 9,200 km subset of the BP-98, SM-81, and GMC81 surveys

- Anisotropic Kirchhoff prestack time migration (PSTM)
- Dense SCVA Velocity Analysis.
- Pre and Post Stack Gathers
- Angle Gathers

Schlumberger has a comprehensive coverage of seismic data in each of the 5th licensing round blocks.

Rovuma Area

In the Rovuma blocks, we have over 800 km of recently acquired broadband data available, complemented by the unique regional ‘Zig-Zag’ 2000 survey lines recently reprocessed.
Angoche Area

Over the Angoche blocks, we have approximately 1,200 km of seismic data available, including lines from the 2013 broadband survey, the regional ‘Zig-Zag’ 2000 survey and the GMR81.

Zambezi Delta Area

Over the Zambezi Delta blocks, we have over 10,000 km of seismic data available.

In this area, we have the newly acquired broadband survey, the recent reprocessed surveys (MBWG 1998, 1999, 2000) and over the shallow water, we have the BP-98 GMC-81 and SM-81 surveys.
5.3 Appendix 3 Details of ION Multiclient Seismic

Mozambique 5th Licensing Round

In support of the Government of Mozambique's 5th Licensing Round, ION is pleased to offer, as part of its East Africa Geological Study, six lines of long offset, long-record, pre-stack depth migrated SPAN data within the open areas being promoted by the National Petroleum Institute (INP), the State Concessionaire.

The East Africa BasinSPAN™ project consists of 20,000 km of SPAN data recently complemented by a further 8,000 km of new data in the Concess, providing extensive regional coverage in the margin to evaluate this license opportunity.

For more information please contact:
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Tel: +44 7824 010 719
Dave.Baker@iapemo.com
BasinSPAN@iapemo.com
iapemo.com

ION

→ Changed to innovate. Driven to solve™
5.4 Appendix 4 Details of CoreLab Study

Core Laboratories is pleased to announce a significant new addition to our series of rock based geological studies in East Africa, which will provide new dataset generation and detailed evaluation of reservoir, source and seal rocks from a suite of wells across the coastal region of Mozambique.

The National Institute of Petroleum (INP) have provided access to the cuttings, sidewall cores, electric logs and technical geological well reports from these selected exploration wells. A total of c.50 wells have been released for inclusion in this new study.

The primary objective of the project is to undertake a full evaluation of reservoir quality of all major reservoir intervals penetrated in the study wells, integrated with an evaluation of associated seal rock lithologies, set in a correlative stratigraphic framework.

The key components of the study are as follows:

- Reservoir Description and Rock Property Evaluation of all major reservoirs;
- Rock Typing of uncored sections;
- Seal Atlas of major seal lithologies;
- Regional Correlative Stratigraphy
- Regional Paleogeography
- Digital Database of laboratory and well data
- ODM database
- GIS Shape files
- HTML browser of the study dataset and report.

Specific objectives include:

- Establish the stratigraphic framework within the wells and provide correlation to previous published schemes;
- Provide detailed reservoir description in order to establish the depositional and tectonic setting of the reservoirs and to provide detailed evaluation of reservoir quality. This will allow evaluation of the sedimentological, tectonic and diagenetic controls on reservoir quality and seal effectiveness;
- Provide analytical data on the sealing capacity of seals and potential seal rocks in order to facilitate improved seal rock quality and prospect risk assessment. The dataset will provide critical parameters for determining seal capacity of oil and gas seal rocks in their depositional context.
CORE LABORATORIES
MOZAMBIQUE REGIONAL
RESERVOIRS & SEALS

A non-exclusive study presented by
INSTITUTO NACIONAL DE PETRÓLEO
and
CORE LABORATORIES SALES N.V.

- Reservoir & Core Description
- Petrophysics
- Rock Property Evaluation
- Rock Typing
- Seal Analysis
- Biostratigraphy
- Regional Paleogeography
- Cyclostratigraphy
- ODM Database
- GIS Shape Files
- Digital Geological & Petrophysical Database
- HTML browser of the study dataset and report

Project Website Available Now

www.corelab.com