

# Panoro Energy

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ANNUAL STATEMENT OF RESERVES  
APRIL 2014

## DISCLAIMER

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The information provided in this report reflects reservoir assessments, which in general must be recognized as subjective processes of estimating hydrocarbon volumes that cannot be measured in an exact way.

It should also be recognized that results of future drilling, testing, production and new technology applications may justify revisions that could be material.

Certain assumptions on the future beyond Panoro's control have been made. These include assumptions made regarding market variations affecting both product prices and investment levels. As a result, actual developments may deviate materially from what is stated in this report.

# ANNUAL STATEMENT OF RESERVES 2013

## INTRODUCTION

Panoro's classification of reserves and resources complies with the guidelines established by the Oslo Stock Exchange and are based on the definitions set by the Petroleum Resources Management System (PRMS-2007), sponsored by the Society of Petroleum Engineers/ World Petroleum Council/ American Association of Petroleum Geologists/ Society of Petroleum Evaluation Engineers (SPE/WPC/ AAPG/SPEE) as issued in March 2007.

Reserves are the volume of hydrocarbons that are expected to be produced from known accumulations:

- In production
- Under development
- With development committed

Reserves are also classified according to the associated risks and probability that the reserves will be actually produced.

**1P** – Proven reserves represent volumes that will be recovered with 90% probability

**2P** – Proven + Probable represent volumes that will be recovered with 50% probability

**3P** – Proven + Probable + Possible volumes that will be recovered with 10% probability.

Contingent Resources are the volumes of hydrocarbons expected to be produced from known accumulations:

- In planning phase
- Where development is likely
- Where development is unlikely with present basic assumptions
- Under evaluation

Contingent Resources are reported as 1C, 2C, and 3C, reflecting similar probabilities as reserves.

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a result, actual developments may deviate materially from what is stated in this report.

## PANORO ASSETS PORTFOLIO

As of year-end 2013, Panoro was producing reserves from the Manati gas field in Brazil. In addition Panoro has six assets with contingent resources. A summary description of each asset with status as of year-end 2013 is included below. In addition we refer to the company web-site for background information on each asset. Unless otherwise specified, all reserves figures quoted in this report are net to Panoro's interest.

### **Dussafu: offshore Gabon, operator Harvest Natural Resources, Panoro 33.33%**

Dussafu is a large exploration block with several small oil fields, the most recent being the Ruche and Tortue discoveries.

The 2C Contingent Resources reported by the operator are 49 MMbbl oil in the Ruche, Tortue, Moubenga and Walt Whitman fields. This figure does not include the GMC-1X gas field which has 2C resources of 142 bcf gas and 5 MMbbl oil.

The recent GCA certified (3rd party) potentially recoverable 2C contingent Resources are 33.4 MMbbl, based on a commercial evaluation of a development scenario, which is being considered as the basis for the declaration of commerciality. This evaluation yields 2C potentially recoverable resources net to Panoro of 11.0 MMbbls of oil. These 2C Contingent Resources are Panoro's Working Interest fraction of the Gross Field Resources; they do not represent Panoro's actual Net Entitlement under the terms of the PSC that governs the asset, which would likely be lower.

Studies to evaluate Dussafu development options continue. The conceptual plan is to aggregate the established accumulations with shared infrastructure. The JV is moving towards a Declaration of Commerciality and submission of a Field Development Plan for Dussafu in 2014.

### **Aje: offshore Nigeria, operator Yinka Folawiyo Petroleum (YFP), Panoro 12.1913%**

The Aje discovery, close to the border with Benin, is predominantly a gas discovery with significant condensate but also contains a separate oil leg.

As of year-end a Field Development Plan (FDP) was pending to be submitted to the Department of Petroleum Resources during the first quarter of 2014. The FDP focusses on a two-well development of the Cenomanian oil reservoir with mid-case reserves of 32.4 MMbbls. Panoro's entitlement of this is equal to 4.4MMbbls. Aje

volumes for the complete field as reported by TRACS in December 2013 are included as contingent resources with a best estimate – 2C of 26.6 MMBOE net to Panoro's share.

#### **Manati: gas field offshore Brazil, operator Petrobras, Panoro 10%**

The original development plan for Manati called for seven producing wells, but based on initial production experience and reservoir understanding, the Operator concluded that six wells could potentially suffice to drain the reservoirs. The consortium consequently has decided to postpone the decision to drill the seventh well.

With the exception of a scheduled maintenance shut-down for three week period in April, production remained at high levels throughout 2013.

Total production for the field during the year 2013 was 218.287 MMm<sup>3</sup> gas and 3,510 m<sup>3</sup> of condensate, which is 1.395 MMBOE when stated in equivalent units, compared to 1.436 MMBOE in 2012.

As of year-end 2013 the Manati field had cumulative gas production (100%) of 13.24 Bm<sup>3</sup>. Compression is now planned to be operational beginning in mid-2015.

The Manati reserves report for year end 2013 reflects a reserves adjustment made by GCA during 2013, based on updated Manati reservoir pressure data and the resulting update to the simulation model, as reported by the operator. As a result of this adjustment, the ultimate 1P recovery was increased by 0.9 MMBOE, while 2P ultimate recovery was reduced slightly.

As of the publication date of this report, this asset has now been sold, along with interest in the Camarão Norte field.

#### **Camarão Norte: offshore Brazil, operator Petrobras, Panoro 10%**

Camarão/Camarão Norte is a discovery extending into the area previously designated as the BCAM-40 (Manati) block. It straddles the block boundary with the neighboring block to the south (BM-CAL-4, 100% owned and operated by a third party). Camarão Norte was declared commercial in July 2009. Five wells have been drilled on the structure (four in block BM-CAL-4), proving the presence of both oil and gas.

A Unitization process will be required and volumes are included as Contingent Resources, best estimate - 2C - of 0.9 MMBOE. This includes both oil and gas volumes considered inside the BCAM-40 ring fence with a 50-50 resource estimate scenario between the blocks. As of the publication date of this report, this asset has now been sold, along with interest in the Manati field.

#### **BS-3: offshore Brazil, operator Petrobras, Panoro 50-65%**

The BS-3 area offshore in the southern part of the Santos basin holds two Panoro assets: the Cavalo Marinho, and Estrela-do-Mar oil fields. The Coral field was relinquished during 2013. Generally, in all the BS3 fields, hydrocarbons are present in up to

four separate, vertically stacked carbonate reservoir zones (B1-B4), where commercial production so far has been associated with the lower three. The uppermost zone (referred to as B1), holds significant hydrocarbon volumes in place but has low permeability and has not been proven to be commercially producible with conventional technology.

Planning for development of these fields has been complicated by the ANP requirements for testing of the low permeability B1 zone and by the requirement for a gas solution. The consortia have worked together to attempt to resolve these complicating issues for several years, but have not been able to configure a commercial solution to develop the fields.

As of year-end, Panoro was involved in a farmout process for the BS-3 assets, and this process had attracted some interest from several qualified companies. The farmout process was ongoing as of the end of the year 2013, with confidentiality agreements having been signed, and data rooms had been either held or scheduled, however no company demonstrated interest in entering into serious negotiations. As of the date of publication of this reserves report, faced with increasing pressure from the ANP, all partners have agreed to relinquish the BS-3 blocks. It is expected that this relinquishment will proceed without any major obstacles.

#### **MANAGEMENT DISCUSSION AND ANALYSIS**

Panoro uses the services of Gaffney, Cline & Associates (GCA) for 3rd party verifications of its reserves.

All evaluations are based on standard industry practice and methodology for production decline analysis and reservoir modeling based on geological and geophysical analysis. The following discussions are a comparison of the volumes reported in previous reports, along with a discussion of the consequences for the year-end 2013 ASR:

- **Dussafu:** The block has made significant progress towards a future development sanction. The joint venture has now agreed that the discoveries can result in a commercial development and discussions are ongoing with the Direction Generale des Hydrocarbures in Gabon to pass through the Declaration of Commerciality milestone defined under the Production Sharing Contract. There is now increased confidence that a Field Development plan will be approved by the Government in the future and these Contingent Resources will be reclassified as Reserves.
- **Aje:** The block has undergone some partnership changes which have resulted in significant re-alignment of the Joint Venture group. With the Cenomanian Oil Development plan now submitted to the Department of Petroleum Resources in Nigeria for approval, tangible progress toward a field development has been made. These factors, improve the likelihood of a future re-classification of the Resource Volumes as Reserves.
- **Manati:** Reserves are carried forward from a slight upward revision performed by Gaffney Cline during 2013, after the publication of the Year End 2012 reserve report. The 2013 Gaffney Cline revision was based on the Operator's revised

technical assessment, using updated production data and newly acquired reservoir pressure data. As of the publication date of this report, this asset has now been sold, along with interest in the Camarão Norte field.

- **BS3:** Estrela do Mar and Cavalo Marinho Contingent Resources are unchanged, as Panoro is continued during 2013 to seek solutions through interaction with all major stakeholders, as well as pursuing a farmout. The major issues that affected development of the fields are: 1) Gas export solution, and 2) Plan to assess the B1 zone through a pilot program, with the aim being eventual development. As of the date of publication of this reserves report, faced with increasing pressure from the ANP, all partners have agreed to relinquish the BS-3 blocks. It is expected that this relinquishment will proceed without any major obstacles.

#### **ASSET ACQUISITIONS/DISPOSALS DURING 2013:**

The BM-S-63, BM-S-71, and BM-S-72 blocks and the Coral field were relinquished in 2013. Additionally the MKB asset was sold during 2013.

#### **ASSUMPTIONS:**

The commerciality and economic tests for the December 31, 2013 Manati reserves volumes were based on condensate and gas sales prices as shown in the following table. Gas price is fixed in Reais according to the sales contract, allowing annual escalation with the domestic market inflation. GCA estimates that the balance between that escalation and the exchange ratio to the US dollar would give a net escalation close to 3% per year. Condensate price was based on GCA's future scenario for Brent crude oil price with a US\$ 2.07/Bbl location discount and a US\$0.07/Bbl quality premium.

Both gas and condensate prices have been grossed up for taxes, which are 21.25% for gas (PIS, PASEP, COFINS and ICMS taxes) and 9.25% for condensate (PIS, COFINS).

Year	Condensate US\$/Bbl	Gas US\$/MMBtu
2014	111.28	8.76
2015	106.69	9.02
2016	104.19	9.29
2017	107.67	9.57
2018	109.76	9.86
Thereafter	+2% per year	+3% per year

Converting gas volumes to oil-equivalents is done using a conversion factor of 6.29 bbl/m<sup>3</sup>.

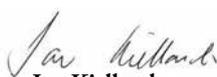
#### **2013 – 2P DEVELOPMENT (MMBOE)**

2P Reserves Development	(MMBOE)
Balance (previous ASR –December 31, 2012)	12.1
Production 2012	(1.4)
Acquisitions/disposals since previous ASR	(0.76)
Revisions of previous estimates	0.14
<b>Balance (revised ASR) as of December 31, 2013</b>	<b>10.0</b>

Panoro's total 1P-reserves at end of 2013 amount to 9.26 MMBOE. This reflects adjusting for 2013 production, a reduction to account for the sale of the MKB asset, and an interim 2013 adjustment for the Manati field, conducted by Gaffney Cline & Associates, to reflect updated pressure data and revisions to the 3D simulation model as performed by the operator.

Panoro's 2P- reserves after similar adjustment is 10.0 MMBOE. Panoro's Contingent Resource base includes discoveries of varying degrees of maturity towards development decisions. By end of 2013, Panoro's assets contain a total 2C volume of 65.5 MMBOE.

Oslo, April 21, 2014

  
**Jan Kielland**  
 CEO

# ANNEX RESERVES STATEMENT AS OF 31.12.2013

## ANNUAL STATEMENT OF RESERVES

Developed Assets										
As of Dec. 31, 2013	1P/P90					2P/P50				
Panoro Energy	Liquids MMbbl	Gas Bcm	Total MMBOE	Interest%	Net MMBOE	Liquids MMbbl	Gas Bcm	Total MMBOE	Interest%	Net MMBOE
Manati field	1.53	14.5	92.6	10%	9.26	1.65	15.7	100.3	10%	10.0
<b>Total</b>	<b>1.53</b>	<b>14.5</b>	<b>92.6</b>	-	<b>9.26</b>	<b>1.65</b>	<b>15.7</b>	<b>100.3</b>	-	<b>10.0</b>

Under Development Assets										
As of Dec. 31, 2013	1P/P90					2P/P50				
Panoro Energy	Liquids MMbbl	Gas Bcm	Total MMBOE	Interest%	Net MMBOE	Liquids MMbbl	Gas Bcm	Total MMBOE	Interest%	Net MMBOE
<b>Total</b>										

Non-Development Assets										
As of Dec. 31, 2013	1P/P90					2P/P50				
Panoro Energy	Liquids MMbbl	Gas Bcm	Total MMBOE	Interest%	Net MMBOE	Liquids MMbbl	Gas Bcm	Total MMBOE	Interest%	Net MMBOE
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	-	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	-	<b>0</b>

Totals										
<b>Total assets</b>	<b>1.53</b>	<b>14.5</b>	<b>92.6</b>	-	<b>9.26</b>	<b>1.65</b>	<b>15.7</b>	<b>100.3</b>	-	<b>10.0</b>

### Reserves Development:

2P Reserves Development	(MMBOE)
Balance (previous ASR –December 31, 2012)	12.1
Production 2012	(1.4)
Acquisitions/disposals since previous ASR	(0.76)
Extensions and discoveries since previous ASR	0.0
New developments since previous ASR	0.0
Revisions of previous estimates	0.14
<b>Balance (revised ASR) as of December 31, 2013</b>	<b>10.0</b>

### Contingent Resources summary:

Asset	2C MMBOE (as of YE2013)	2C MMBOE (as of this report)
Aje	26.6	26.6
Dussafu *	11.0	11.0
Cavalo Marinho	11.0	-
Estrela do Mar	15.6	-
Caravela Sul	0.4	-
Camarao Norte	0.9	-
<b>Totals</b>	<b>65.5</b>	<b>37.6</b>

\* Dussafu working interest share.

## COMPANY ADDRESSES

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