# **REPUBLIC OF SOUTH SUDAN**

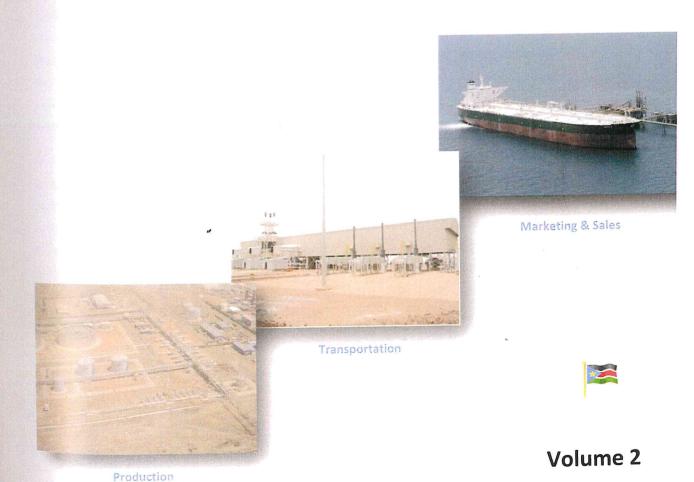
# MINISTRY OF PETROLEUM AND MINING



# **Crude Oil Marketing Report**

April, 2013 - May 2014

**Fourteen Months Results** 



# Published by

# The Ministry of Petroleum and Mining Republic of South Sudan

June 2014

# MINISTRY OF PETROLEUM AND MINING April 2013 to May 31, 2014

Honorable Stephen Dhieu Dau Ayik is the Minister of Petroleum and Mining for the Government of the Republic of South Sudan. He has guided the petroleum activities of the Ministry since August 2011. Before his current appointment, and as a result of government institutional reorganization, he held the position of Minister of Petroleum, Mining and Industry and prior to that of Minister of Petroleum and Mining. Previous to his federal government appointment he held the position of State Minister of Finance, Trade and Economic Planning in Upper Nile State and Minister of Commerce and Industry in the Government of Southern Sudan.

Minister Dhieu Dau has been called upon to successfully address important challenges to the South Sudan petroleum sector. In January 2012 the oil fields in South Sudan were forced to shut down due to a crude oil transportation tariff and transit fees dispute with the Government of the Republic of Sudan. The Minister's active participation in the Addis Ababa talks throughout 2012 led to the signing of the September 2012 co-operation agreements. This paved the way to restart the oil operations although six more months of challenging negotiation were to follow before production finally restarted.

Under the leadership of Minister Dhieu Dau, 2013 has been a successful year for the country's petroleum sector with the restart of crude oil production in April and the marketing of South Sudan's entitlement share. Output from all oil fields steadily increased during 2013peaking at more than 247 Mbbl/d in early December and total crude oil sales of USD 3.3 billion (only three billion and three hundred million US Dollars) at world price benchmarks have been realized up to May 31, 2014.

In mid-December the crisis in South Sudan severely impacted crude oil production reducing overall daily levels by 33% from peak production. Regional security issues in Unity State forced the Nile Blend oilfields in Blocks 1, 2, and 4 and Block 5A to shut down. The Ministry is currently assessing options to resume production from these fields. Production from the Upper Nile Dar Blend oil fields in Blocks 3 and 7 has also been impacted but has been able to continue uninterrupted at reduced levels into 2014.

### MESSAGE FROM THE MINISTER

Since South Sudan gained independence in July 2011, the Ministry of Petroleum and Mining has demonstrated exceptional capacities in managing the petroleum sector. We have been confronted with an oil shutdown and major regional conflict challenges. The hard work of the officials of the ministry combined with the strong commitment of our producing partners has resulted in providing 4.8 billion SSP to the Republic of South Sudan budget, from the restart of production in April 2013 up until the end of May 2014.



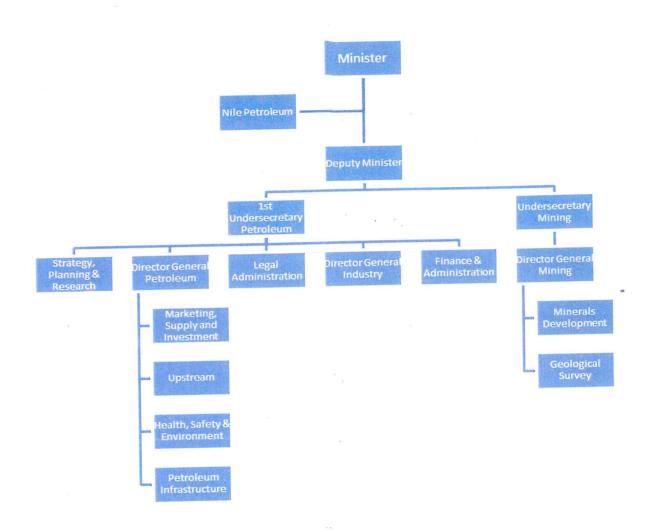
The unfortunate crisis in South Sudan has resulted in a significant reduction in our production. A number of oil production facilities have been damaged and are in need of repair, oil wells need remediation work and both the movement of goods and the workforce necessary for the production have been negatively impacted. The Ministry and I are in constant contact with our oil producing partners to identify production challenges and to address matters that will enable production to return to normal levels as quickly as possible.

We continue to be aware of our obligation of openness and accountibility to our citizens and we are proud to be able to provide this comprehensive marketing activity report to you. As I had stated in our first marketing report, "our wealth in this area is not limited. It is the solemn responsibility of each of us to be informed and to show good stewardship for that which we are entrusted".

I congratulate the entire Ministry in their efforts to bring a greater understanding of the management of the petroleum and mining industries and it is with great pride that I am fulfilling the mandate that I have received from our President, H.E. Salva Kiir Mayardit. In this our second publication, we hope you will agree that openness is not just a word, but that our government is demonstrating its meaning through deeds as well.

Honorable Stephen Dhieu Dau Ayik

Minister of Petroleum, Mining and Industry



## Part 5 – Future Activities

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# **ABBREVIATIONS**

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# MPM Crude Oil Marketing Report

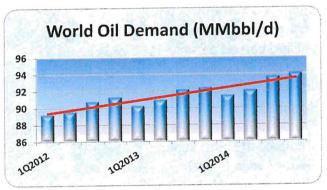
barrel bbl Bank of South Sudan BSS developed markets DM **US Energy Information Agency** EIA emerging markets EM **Exploration and Production Sharing Agreement EPSA** Government of Sudan GOS IEA International Energy Agency International Monetary Fund IMF thousand barrels Mbbl Mbbl/d thousand barrels per day million barrels MMbbl million barrels per day MMbbl/d Ministry of Finance and Economic Planning **MOFEP** Ministry of Petroleum and Mining MPM Organization for Economic Co-operation and Development **OECD** Organization of the Petroleum Exporting Countries **OPEC** RSS Republic of South Sudan South Sudan Pound SSP USD **United States Dollar** West Texas Intermediate WTI

# PART 1 – GLOBAL OIL ENVIRONMENT

April 2013 - May 31, 2014

#### 1.1 World Crude Oil Demand

The worldwide demand for crude oil remained reasonably firm in 2013. According to an Organization for the Petroleum Exporting Countries (OPEC) report, the estimate for world oil demand in 2013 was 90.01 million barrels per day (MMbbl/d), representing growth of 1.05 MMbbl/d over the previous year. Almost half of annual oil demand growth was seen coming from China and the Middle East. The International Energy Agency, in their forecast, is expecting global oil demand to increase by 1.3 MMbbl/d to reach on average 92.8 MMbbl/d in 2014 as shown below.



Source: International Energy Agency

Recent demand data show signs of deceleration in some key emerging market (EM) countries in early 2014 with solid demand continuing in developed market (DM) countries. The United States demand should be especially strong and there is expected to be some improvement in Europe offset by some weakness in China, Mexico and South Korea. The demand growth reflects an economic recovery, in developed markets (especially the US) and some volatility in emerging markets, compounded by a weakening foreign exchange, lifting the price of oil in local currencies. Countries such as South Africa, Japan and Argentina are facing a more than 15% + increase in the cost of oil in their local currency which may impact demand.

# 1.2 World Crude Oil Supply

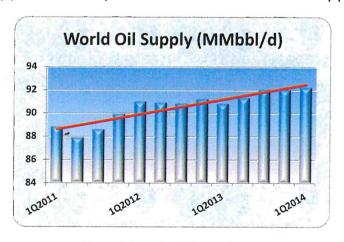
According to the International Energy Agency, global oil supplies have recently risen to about 92.6 MMbbl/d. On a yearly basis world output was up about 1.0

MMbbl/d. OPEC production declines during the period were offset by non-OPEC production growth.

Non OPEC Supply – Non-OPEC supply growth reached 1.8-2.0 MMbbl/d in July-November 2013, the highest level since September 2009, driven by consistent improvements of supply from the US and Canada as well as growth in the rest of non-OPEC for the first time since 2010. Non-OPEC 2013 supply growth experienced the strongest overall gain since 2002 and this trend is expected to continue into 2014. Outside of the US and Canada, non-OPEC supply is also showing strong signs of a comeback, with year over year growth of 200-500 thousand barrels per day (Mbbl/d) in July-November 2013, consistent with the trend before the 2011-12 dip.

Non-OPEC growth is expected to remain reliant on North American supply; however, there is a current prohibition on the export of excess US crude production. As a result US supply excesses are isolated from the international market which will, in principle, help to drive down the domestic price for crude oil and therefore the price for gasoline and other petroleum products. There is a push to remove the export prohibition that would allow the US to more proactively involve itself within the international petroleum pricing arena.

Outside of North America, the development of new projects in Brazil and signs of stabilization in mature basins such as the North Sea, the Gulf of Mexico and the Campos, support a more positive view on non-OPEC supply.



Source: International Energy Agency

OPEC Supply – OPEC production had come under pressure since 2Q2013 due to disruptions in Libya, Iraq, Iran and Nigeria and remained 1-1.5 MMbbl/d below the rate for 1Q 2012 to 2Q 2013 into early 2014. Production from Saudi Arabia has picked up in response, reaching a peak of 10.2 MMbbl/d in August. Since

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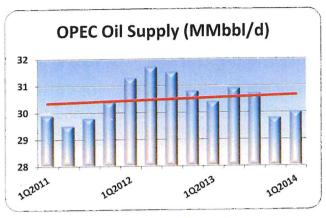
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then, Saudi production has come back down to 9.8 MMbbl/d, leaving more headroom to its estimated capacity of 10.5 MMbbl/d.



Source: International Energy Agency

In November 2013, the Organization for Economic Co-operation and Development (OECD) inventories fell more than their seasonal average, as a result of exceptionally low OPEC production. This was in contrast to the

previous two months, when inventories built against seasonal average, despite production disruptions in Libya and Iraq which took away 1.2 MMbbl/d of production from the market. This may illustrate the delicate balance between an underlying non-OPEC supply/demand balance in an oversupply state combined



with very low levels of OPEC production. As a result, inventories were low in absolute terms, but appear average in terms of inventory days. If Libya production partly returns to the market, there could be downside risk to spot oil prices in the near term.

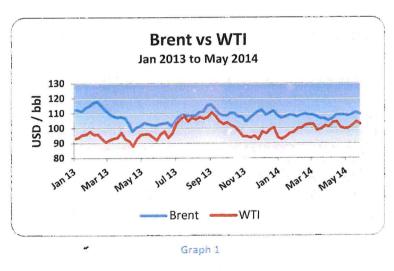
Russia and Iraq – In 2014, developed market crude oil supplies may be subject to further pressure as Russia, the world's largest crude oil producer, faces possible further sanctions as fallout from the Ukrainian crisis. The European Union relies on Russia for about one third of its crude oil needs according to the European Commission. Russia has recently entered into a 30 year crude supply arrangement with China through which it will pipeline much of its East and West Siberian crude production into China. When this goes into effect, probably in several years' time, it should serve as a replacement for Russia's European market. A significant realignment of crude markets will result.

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Increasing violence in Northern Iraq also poses potential major disruption to crude oil supplies in 2014. Iraq exports at least 2.5MMbbl/d and a loss of this magnitude, or any significant portion, with no source of readily replaceable supply and global spare capacity of only 2% could seriously impact crude markets going forward.

#### 1.3 Crude Oil Price Outlook

Brent and West Texas Intermediate (WTI) crude pricing held firm in 2013 as shown in Graph 1. Brent averaged about USD 108.56 and WTI averaged about USD 98.69 for the year. The WTI-Brent spread narrowed during the early part of 2013 from a high of about USD 20.00 in January due to improved transportation infrastructure to the Gulf Coast and US refineries running at higher rates. Supply drops from Libya and an escalation of the Syrian unrest caused the spread to increase in the latter part of 2013. Increasing US domestic production has again reduced the spread in 2014.



The effects of existing prohibitions on US crude exportation has the effect of insulating the US from international crude pricing. This, more than anything else, has created the expected gap between Brent and WTI crude pricing. The US has very recently allowed exports of "lightly processed" crude (as opposed to unrefined crude oil) in a move that could see oil exports from the US increase. Increases in supply outside of the US domestic market could contribute to softening of world oil prices.

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A recent Goldman Sachs report forecasts diminished EM demand prospects and normalization in the non-OPEC supply outlook. Combined with a potential recovery in Iranian and Libyan production, this would appear sufficient to create a bearish outlook for oil prices in 2014. The report states that the low level of global inventories, strong US demand growth and renewed political instability in Iraq, Ukraine and Venezuela currently give caution to revising downward the 2014 and 2015 end-of-year Brent forecasts of USD 105/bbl and USD 100/bbl respectively.

Goldman Sachs also says that there could be significant downside risks to these price forecasts during 2014 and notes the following three issues to watch for 2014:

a. Demand rotation — Demand is moving from being emerging market driven to developed market driven. US demand growth is beginning to lead global oil demand after years of EM demand leadership. Recent EM currency devaluations make many EM countries extremely exposed to higher oil prices. Consequently, all the adjustments to supply and demand shocks are coming from EM demand, as it was before the 2000s when the US dollar was far stronger.

b. Supply normalization — non-OPEC supply growth has normalized, allowing non-OPEC supply to shift from growth expectations of 0.3-0.6 MMbbl/d year over year to 1.2-1.4 MMbbl/d. At the same time, while key OPEC producers cope with significant disruptions, Iran and Libya are becoming more stabilized with Venezuela likely to pursue hard cash in exchange for oil. Escalating issues in Iraq could continue to place downward pressure on OPEC supply.

c. US saturation – the US expansion of shale oil production, on the order of 2 MMbbl/d over 2-3 years ago, has done very little to weaken the global oil balance due to crude oil export restrictions. Increasing domestic supply has caused a reduction in crude imports and a sharp decline in US prices, even gasoline, which in turn generated significant internal demand increases to absorb the trapped supplies.

As the adjustment process to the shale revolution proceeds, it is requiring the market to rethink long-held views around the economics of transportation. United States crude oil transport is constrained due to the lack of build out of pipeline infrastructure. Substitution through unit crude cargoes of oil via rail has hit upper limits due to route and route capacity limitations as well as the safety issues associated with existing tank cars utilized for the highly volatile Bakken crude.

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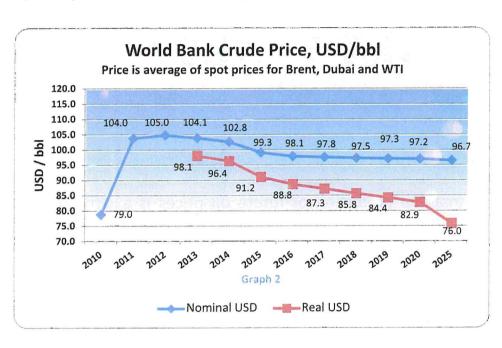
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The lack of excess refining capacity due to shortage of continued capacity development has also restricted US domestic gasoline and diesel production. Importation of product from international sources to make up for the shortfall has had the effect of negating somewhat any reductions in fuel prices due to this ongoing tie to international market pricing

In April 2014 The World Bank (WB) released its Commodity Forecast, which predicts that the world crude oil price will decrease from USD 104/bbl in 2013 to USD 97/bbl by 2020 as shown in Graph 2.

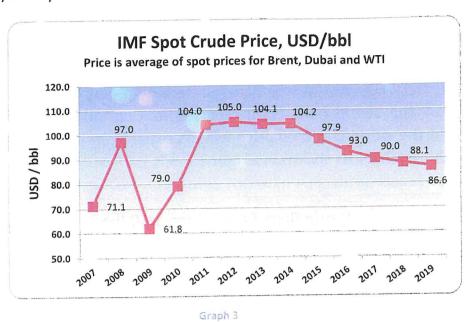


The US Energy Information Agency (EIA), in its June 10, 2014 paper on the Short Term Energy Outlook, predicts a 2014 price for WTI of USD98.67/bbl and a Brent price of USD107.82 per barrel.

EIA Report	2012	2013	2014	2015
WTI Crude	94.12	97.91	98.67	90.92
Brent Crude	111.65	108.64	107.82	101.92

Table 1

The International Monetary Fund (IMF), in its recent Commodity Price Forecast, predicts the spot average price for crude oil will drop to USD86.60/bbl by 2019.

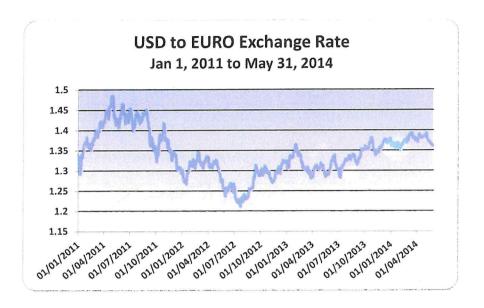


It is clear that the prediction of future oil prices is a difficult and complex exercise which is subject to many different political, geographical and operational variables. Nonetheless, the longer term price forecast by each of these three reputable organizations – the WB, the EIA and the IMF – suggest that crude oil prices are expected to fall.

# 1.4 Currency Exchange Rates

The United States dollar has appreciated considerably in 2013 against many world currencies. The USD — Euro exchange rate comparison from the beginning of 2011 through to the end of May 2014 is shown in Graph 4. The Euro has lost 4% to the USD during 2013 but has since regained some of those losses. Similarly, when compared to the USD the South African Rand has lost 20%, the Japanese Yen has lost 15% and the Argentina Peso has lost 39%. As previously noted the weakening foreign exchange in many countries has lifted significantly the price of oil in local currencies which in some instances may serve to curtail demand.

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Impact of the USD appreciation on selected currencies:

		Jan 1/13	May 31/14	% Change
ZAR	South Africa	0.11821	0.09448	-20%
JPY	Japan	0.01152	0.00982	-15%
ARS	Argentina	0.20338	0.12379	-39%

Table 2

Since the end of 2013, the USD to South Sudanese Pound (SSP) parallel exchange rate has fluctuated between a high of 5.10 SSP/USD and a low of about 3.90 SSP/USD as shown in Graph 5. All South Sudan oil sales are denominated in USD which offers some protection from the currency variation; however domestic payments could be impacted by the exchange rate differences as USD are converted to SSP.

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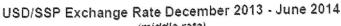
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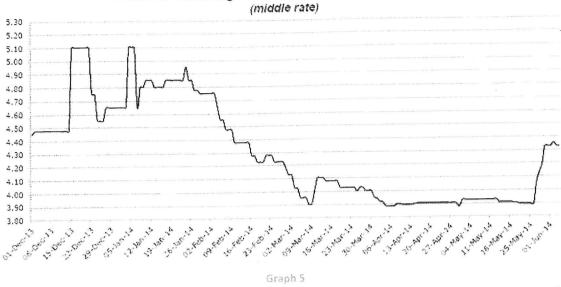
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## 1.5 Africa and the South Sudan Region

Africa – Total African crude oil production is estimated at about 10 MMbbl/d. The four largest producers – Nigeria, Algeria, Angola and Libya account for about 80% of African production. At peak production levels, South Sudan ranks ninth in Africa in total crude oil output.

South Sudan — Since the restart of production in April 2013, South Sudan has had average production of 187 Mbbl/d. Production peaked at 247Mbbl/d in early December 2013. Sales are made under a confidential bid tender program and prices received have been competitive and transparent and based on international market prices. Demand has been excellent for both types of South Sudanese crudes, particularly in Asian markets such as China and Japan as their refineries are capable of handling the highly acidic Dar Blend crude oil.

According to the *Oil & Gas Journal* (OGJ), Sudan and South Sudan had a combined 5 billion barrels of proved crude oil reserves as of January 1, 2013. According to BP's 2013 Statistical Review, approximately 3.5 billion barrels are in South Sudan and 1.5 billion barrels are in Sudan. The majority of reserves are located in the oil-rich Muglad and Melut basins, which extend into both countries.

Much work remains to be done in South Sudan to confirm the proven oil reserves, to improve and enhance production from the existing oil fields and to offer new areas for exploration to international investors.

# PART 2 – PETROLEUM UPSTREAM FRAMEWORK AND ANALYSIS

April 2013 to May 31, 2014

### 2.1 Republic of South Sudan - Petroleum Legislation and Regulations

#### 2.1.1. 2012 Petroleum Act Overview

- The Act has 21 chapters and 100 sections covering upstream ownership of petroleum is vested in the people and managed by the Republic of South Sudan for their benefit;
- The Ministry of Petroleum and Mining is responsible for the management of the petroleum sector;
- Emphasis is on maximum recovery within a framework:
  - providing for "prudent operations",
  - using best international practices,
  - ensuring safety, security and protection of the environment, and
  - requiring transparency, accountability and ethical behavior, on the part of licensees/contractors and Government;
- The EPSA contractual regime continues with certain key provisions of these agreements made part of the legislation;
- A licensing regime for reconnaissance activities, installers and operators of transportation systems (including pipelines) is provided for based on an open and transparent bidding process.

# **Highlights & Current Status**

- Safety and environment put primary responsibility on the contractor;
- The Act endorses the concept of "local content", using South Sudanese, if competent and available, to fill skilled and unskilled positions;
- The Act affirms Ministry of Petroleum and Mining responsibility for administration, implementation and enforcement;
- The Act provides for broad regulatory powers to legislative regime;
- The Act has been enacted and has been in force since July 2012.

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# 2.1.2. Petroleum Regulations

- Five Petroleum Regulations are now being developed: 1) occupational health and safety, 2) records & reporting, 3) drilling & production,4) management systems and health, safety and environment management plans, and 5) graticulation and licensing.
- There are 3-5 additional regulations expected to be written this summer.

Amendments to the Petroleum Act 2012 are currently being drafted to enable a regulatory regime for charging and collecting administrative penalties; the draft regulation putting the regime into effect is also being drafted simultaneously with the draft statutory provisions.

# 2.1.3. Petroleum Revenue Management Act

The Petroleum Revenue Management Act (PRMA) that has been proposed by the Government of the Republic of South Sudan establishes a formalized structure for the distribution of petroleum revenues to:

- immediate budgetary needs;
- savings including revenue stabilization and future generations, and;
- direct transfers to petroleum producing states and affected communities.

It establishes a high standard for reporting requirements for both the Government and oil companies, with the overarching principle of transparent and accountability management.

The Act was approved by South Sudan's two houses of parliament and is awaiting formal and final approval prior to being enacted into law.

# 2.2 Exploration & Production Sharing Agreements (EPSA) Overview

The map in Figure 1 outlines the areas of current petroleum activities in the Republic of South Sudan.

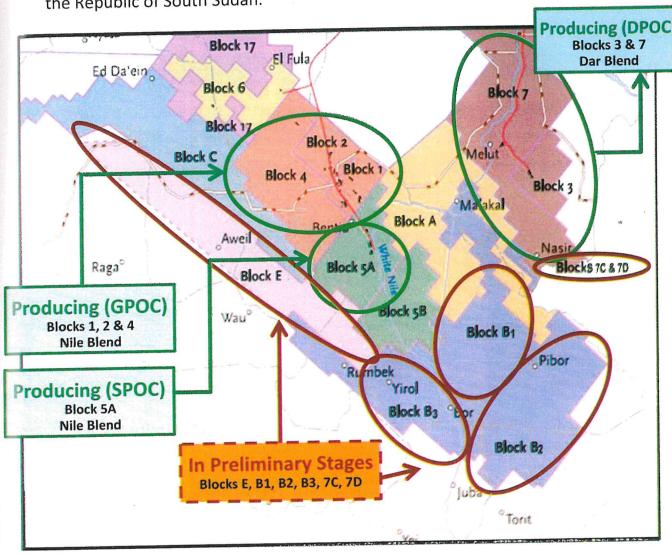


Figure 1

Currently the Republic of South Sudan has entered into or is negotiating six agreements with foreign investors for the exploitation of the country's petroleum reserves. Crude oil production is being realized under three of these agreements and the remaining three are still in the negotiation phase. These production and potential exploration areas include:

Blocks 1a and 1b – Greater Pioneer Operating Company (GPOC) – Unity State
Blocks 1a and 1b are located in Unity State and the Nile Blend crude oil is
produced from some 283 wells. Final oil processing is done at the Heglig
facilities in Sudan prior to flowing into the larger Nile Blend export stream via

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the GNPOC pipeline to the marine terminal in Port Sudan and onwards to markets. The producing wells are located in several different oil fields with varying qualities which are blended to average 34 API, 0.06% Sulfur. Highlights of the Blocks 1a and 1b EPSA are shown below:

Development Blocks 1b and 2b				
Operating Costs	Recovered in year inc	urred		
Capital Costs	Recovered over four	/ears		
Cost Oil Maximum	4	0%		
Excess Cost Oil	RSS	100%		
Profit Oil	60%			
Profit Oil Sharing	RSS	Contractor		
< 25,000 bbls / day	61.5%	38.5%		
> 25,000 bbls / day; < 50,000 bbls / day	71.0%	29.0%		
> 50,000 bbls / day	80.0%	20.0%		
Exploration Blocks 1a, 2a and 4				
Operating Costs	Recovered in year inco	urred		
Capital Costs	Recovered over four y	rears		
	4	5%		
Cost Oil Maximum	4			
Cost Oil Maximum Excess Cost Oil		100%		
	RSS	100% 5%		
Excess Cost Oil	RSS			
Excess Cost Oil Profit Oil Profit Oil Sharing	RSS 5.	5%		
Excess Cost Oil Profit Oil	RSS 5. RSS	5% Contractor		

# Block 5A - SUDD Petroleum Operating Company (SPOC) - Unity State

Block 5A is located in Unity State and has some 55 producing oil wells. Crude oil designated as Nile Blend flows to the Heglig facilities in Sudan for final processing prior to export through the GNPOC pipeline. Due to the heavier crude oil characteristics, Block 5A production is typically restricted to about 10% of the total GNPOC throughput in order to not significantly degrade the total oil volumes. Highlights of the Block 5A EPSA are shown below:

Block 5A		
Operating Expenses	Recovered in year in	curred
Exploration Expenses	20% per financial year	ar
Development Expenses	20% per financial yea	ar
Cost Oil Maximum	4	0%
Excess Cost Oil	Shared as	per Profit Oil
Profit Oil	6	0%
Profit Oil Sharing	RSS	Contractor
< 25,000 bbls / day	71.5%	28.5%
> 25,000 bbls / day; < 50,000 bbls / day	72.5%	27.5%
> 50,000 bbls / day; < 100,000 bbls/day	76.25%	23.75%
> 100,000 bbls / day	81.25%	18.75%

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Blocks 3 & 7 – Dar Petroleum Operating Company (DPOC) – Upper Nile State Blocks 3 & 7 are located in Upper Nile State and have some 618 oil wells producing the heavier and acidic Dar Blend crude. The crude oil is initially processed at the DPOC field processing facilities in Palouge prior to passing to the Al Jabalain central processing facilities across the border in Sudan for final processing and water removal. The oil then enters the Petrodar pipeline for transport to the Port Sudan marine terminal and onward to markets. The producing wells are located in several different oil fields with varying qualities which are blended to average 26 API, 0.1% Sulfur. Highlights of the Blocks 3 & 7 EPSA are shown below:

Dar Petroleum Operating Company (DPOC)				
Development Block 3D				
Operating Expenses	Recovered in year i	ncurred		
Exploration Expenditures	25% per financial ye	ear		
Development Expenditures	25% per financial ye	ear		
Cost Oil Maximum		50%		
Excess Cost Oil	Shared as	per Profit Oil		
Profit Oil		50%		
Profit Oil Sharing	RSS	Contractor		
< 10,000 bbls / day	64%	36%		
> 10,000 bbls / day; < 15,000 bbls / day	67%	33%		
> 15,000 bbls / day; < 20,000 bbls / day	77%	23%		
> 20,000 bbls / day	80%	20%		
Exploration Blocks 3E				
Operating Expenses	Recovered in year in	ncurred		
Exploration Expenditures	25% per financial ye	ar		
Development Expenditures	25% per financial year			
Cost Oil Maximum	45%			
Excess Cost Oil	Shared as I	per Profit Oil		
Profit Oil		5%		
Profit Oil Sharing	RSS Contract			
< 25,000 bbls / day	70%	30%		
> 25,000 bbls / day; < 50,000 bbls / day	73%	27%		
> 50,000 bbls / day; < 75,000 bbls / day	75%	25%		
> 75,000 bbls / day	80%	20%		
		2070		
Exploration Blocks 7E				
Operating Expenses	Recovered in year in	curred		
Exploration Expenditures	25% per financial yea			
Development Expenditures	25% per financial yea			
Cost Oil Maximum		5%		
Excess Cost Oil		per Profit Oil		
Profit Oil		5%		
Profit Oil Sharing	RSS	Contractor		
< 25,000 bbls / day	70%	30%		
> 25,000 bbls / day; < 50,000 bbls / day	72%	28%		
> 50,000 bbls / day; < 75,000 bbls / day	74%	26%		
> 75,000 bbls / day	80%	20%		

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#### Block B1- Total

There is no production from this block – re-negotiation for signing the Exploration and Production Sharing Agreement (EPSA) with the partners is underway.

#### Block B2 - Total

There is also no production from this block – re-negotiation for signing the EPSA with the partners is underway.

#### Block B3

This Block will be tendered as per the Petroleum Act 2012 for potential operators to compete in order to win ownership and exploitation.

#### Block E

There is also no production from this block – negotiations for signing EPSA with the partners are underway.

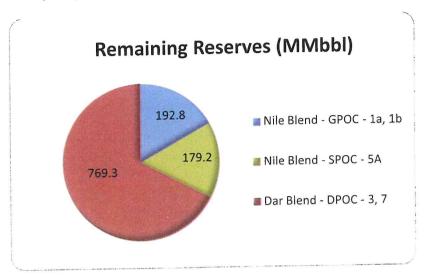
# 2.3 Crude Oil Reserves and Analysis

A recent comprehensive reserve assessment has not yet been completed. Some data is available in South Sudan but it is not sufficient to do a full assessment. The RSS has a large amount of historical available but it is still in storage in Khartoum pending its return to South Sudan in accordance with the terms of the 2012 cooperation agreements. Additional data acquisition will be required with the cooperation of the contracting companies. An independent company will then be engaged to certify and reconcile the reserve figures.

Currently the proven reserve totals are estimated at 1.141 billion barrels.

Graph 6 on the following page illustrates the Republic of South Sudan's estimated current reserves for the remaining life of the fields without replacements from improved / enhanced oil recovery or new exploration. The ratio of Dar Blend and Nile Blend quality crudes is a reflection of the declining rate of Nile production which was greater than Dar in years past. Reserve estimates have undergone significant change since our previous marketing report in 2012. As previously noted, our data deficiency has hindered the development of a more accurate estimate and the MPM Upstream department

will be working hard in consultations with the contracting companies and independent third party firms to improve the accuracy of the reserve estimate.



Graph 6

Crude Type	Contractor	Block	2014 Reserves (MMbbl)	2012 Reserves (MMbbl)	Net Change
Nile Blend Nile Blend Sub Total Dar Blend Total	GPOC SPOC DPOC	1a, 1b 5A 3, 7	192.80 179.15 <b>371.95</b> 769.30 <b>1,141.25</b>	582.30 180.97 <b>763.27</b> 948.36 <b>1,711.63</b>	(389.50) (1.82) (391.32) (179.06) (570.38)

Republic of South Sudan remaining reserves: 1.14billionbbl

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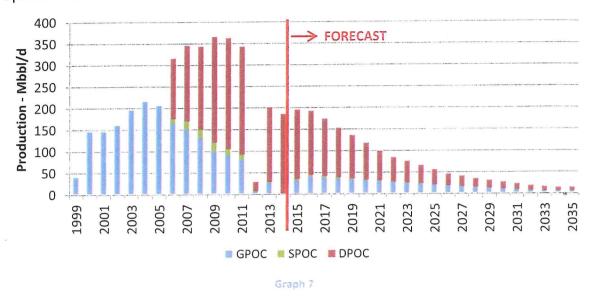
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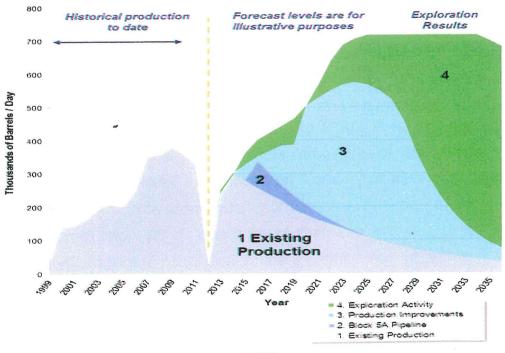
- Nile blend production from blocks 1a/1b and 5A in Unity State
- Dar blend production from blocks 3 and 7 in Upper Nile State
- 67% of the estimated remaining proven reserves are Dar Blend and 33% are Nile Blend

#### 2.4 Production Forecast and Recovery Factors

The graph below shows the projected decline rates for all three producing blocks through to 2035 without further reinvestment or new investments to replace reserves.



Future investments to optimize oil field operations, implement improved / enhanced oil recovery schemes and initiate new exploration has the potential to significantly increase the levels of production and extend the life of the fields. This is shown in Graph 8 although it should be noted that these forecast levels are for illustrative purposes.



#### **Production Forecast**

- Production is predicted to continue at reduced levels for the remainder of 2014 with no further production from the Unity State Nile Blend oil fields expected until 2015.
- Production declines are expected over the next 5 years without further reserve replacement or production enhancements. This is a normal production reserves decline pattern without additional investment.
- Current shut down of Unity State oil wells will not change the production profile as oil wells can probably restart without loss of accessible production.
- Most future production derives from the Dar Blend fields in Upper Nile.
- The production profile takes into account only the estimated production from the fields currently in production.
- Possible new discoveries and increased recovery rate from IOR / EOR projects may give higher future production.
- Additional participation in the fields, including new foreign investment, can materially improve the overall production forecast curve, as new investment will focus on production growth.

# 2.5 September 2012 Cooperation Agreements – South Sudan and Sudan

On September 27, 2012 the Government of South Sudan and the Government of Sudan entered into a number of agreements to cooperate across a range of areas of common interest and committed themselves to implementing these agreements including "The Agreement Concerning Oil and Related Economic Matters". Collectively these agreements are known as the 2012 Cooperation Agreements.

Oil Agreement Highlights – The principle highlights of The Agreement Concerning Oil and Related Economic Matters are:

- South Sudan would have access rights to the GNPOC (Nile Blend) and Petrodar (Dar Blend) processing and transportation facilities located on the territory of Sudan;
- South Sudan would provide their proportionate share of pipeline fill which would be redelivered to South Sudan at the expiry of the agreement;
- Agreement financial arrangements (United States Dollars per barrel) are:

United States Dollars	GNPOC (Nile Blend)	Petrodar (Dar Blend)
Processing Fee	1.60	1.60
Transportation Fee	8.40	6.50
Transit Fee	1.00	1.00
Fee Sub Total	11.00	9.10
Transitional Financial Assistance	15.00	15.00
Total Fees	26.00	24.10

Table 4

- All payments will be based on the net barrels lifted at the Port Sudan marine terminal;
- The maximum cumulative amount of the Transitional Financial Assistance payments is USD 3.028 billion;
- The agreement will remain in force for a period of three years and six months as of the date of the first oil liftings at the marine terminal and a bill of lading issued.

# **PART 3 – TRANSPARENCY**

### Now and For the Future

### 3.1 International Best Practices

On July 9, 2011 the Ministry of Petroleum and Mining, Republic of South Sudan assumed full and complete responsibility for petroleum and mining operations on its territory. Petroleum operations are managed on behalf of the people of South Sudan and the responsibilities and obligations of the MPM are enshrined in the Transitional Constitution and guided by the Petroleum Act 2012.

The MPM is dedicated to forming an institutional structure and establishing business relationships in an open and transparent manner. Transparency in Marketing is the cornerstone to growing a new international customer base mandated to conform to the highest ethical standards, as well as to ensure oil revenue cash flows are conducted through proper channels. Examples of Transparency in our Marketing Team practices:

### **Activity**

- Formal Sales Contracts
- Limited Direct Negotiations
- Tender Approach to Selling
- Guidelines for Awarding Cargoes
- Marketing Team Membership.
- Floating International Pricing
- Customer Prescreening Application
- Bids Reviewed by All Members
- All Revenues Directly to Finance
- Documented Meeting Minutes
- Ministerial Approval of Awards

#### **Benefit**

Detailed and Comprehensive

Only on Short Notice Avails

Allows for Open Bidding

All Bidders Follow Same Rules

Interdisciplinary Across Ministries

Established Industry Benchmark

Serves a Background Check

Sign off by Each Member

**MoFEP Approved Accounts** 

Recaps All Issues Discussed

Documented Official Approval

#### 3.2 Pre-established Award Criteria

Clearly established criteria to evaluate competing bids for RSS monthly crude oil sales has been developed and implemented by the Marketing Team. While

price is the single most important factor, there are a number of important additional factors considered as well to safeguard RSS interests, as shown below:

# Republic of South Sudan - Ministry of Petroleum & Mining Bid Evaluation Criteria

#### Pre-Approval

Marketing Team pre-agree list of companies allowed to participate in tender

#### Transparency

All Bids received within the Tender timeline are tabled for review by Team

#### Conformity

Bids received that do not conform to Tender conditions may be eliminated

#### Commitment

Intention is to commit all cargoes offered in Tender if acceptable conditions

#### **Selling Priority**

Awards should be announced in date order to avoid distressed sale later

#### **Price**

Pricing is a major (not only) factor in awarding cargoes to winning Bidders

#### Security

Financial security is a major (not only) factor in cargo awards

#### **Diversification**

Spreading exposure to multiple Bidders is a factor in awards

#### **Target Buyers**

Recognition of large end user factored in if relationship adds value to RSS

#### Negotiation

Follow up direct negotiation should be limited to clarifying bid submissions

#### **Payment**

Early payment options considered to meet government operational needs

# 3.3 Other Transparency Initiatives

In addition to marketing activities listed above related to the direct selling of crude oil, MPM is continuing to emphasize transparency in all of its business practices. For example, this is the second edition of the marketing report which provides comprehensive information to stakeholders, interested parties and the public on the crude oil marketing activities of the Ministry. The Petroleum Revenue Management Act is supported by the Ministry and when passed, will

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provide further guidance on crude oil revenue management as well as additional transparency under new reporting obligations. The implementation of the Extractive Industries Transparency Initiative (EITI) has also been strongly supported by the Ministry and, although progress to date has been limited due to the capacity constraints of the Ministry as well as the need to address other urgent priorities, MPM remains committed to its effective implementation.

The Ministry has also initiated the practice of providing periodic press releases which outline recent sales and production volumes, crude oil revenues, tariff and assistance fee payments to Sudan as well as other relevant marketing data. The Ministry has recently implemented and improved its website to enable much more information about Ministry activities to be disseminated to the public.

# **PART 4 – MARKETING PERFORMANCE**

April 2013-May 31, 2014

# 4.1 The Marketing Team

A preselected interdisciplinary group representing the Ministry of Petroleum and Mining, Ministry of Finance and Economic Planning, Ministry Of Justice, Bank of South Sudan and Nile Petroleum gather on a regular basis to review crude marketing issues, sales strategy, customer issues, and the award recommendations of oil sales contracts. Members of the marketing team are:

Macar Aciek Ader, Chairman 1<sup>st</sup>Undersecretary MPM

Cosmas Pitia Kujjo Director General, MPM

Paul Adong Bith Managing Director, Nilepet

Akur Ajuoi Magot Legal Advisor MPM

Kenyang Yai Yai Acting Director for Downstream

Loi Majak Mapour Ministry of Finance

Simon Kiman Lado Ministry of Finance

Moses Makur Deng Bank of South Sudan

Eptisam William Morjan Bank of South Sudan Gieth Abraham Dauson

MPM Member

Barnaba Tito MPM Member

Abraham Achol MPMMember

Akuei Ajou Akuei MPM Member

Nyawut Luth MPM Member

Kuol Majok Nilepet Member

Chiek Reech Kuol Nilepet Member

Glen Hutka

Advisor, MPM Member

Tom O'Connor

Advisor, MPM Member

This list can be expected to change and grow as reassignments within the various ministries occur and additional experienced marketers from the Republic of Sudan are recruited to strengthen the crude oil marketing function.

#### 4.2 Marketing and Transportation

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Crude marketing began in mid-July, 2011, immediately following our country's new independence, and successfully continued through mid-January, 2012. Production was shut down from January 2012 through to April 2013 in response to the confiscation of several RSS crude oil cargoes by Sudan as well as transportation and tariff disputes with the GoS. In April 2013 production was restarted through mutual agreement between South Sudan and Sudan and supported by the signing of the September 2012 Cooperation Agreements.

The following table summarizes the crude oil marketing activity in South Sudan for the reporting period of April 2013 to May 31, 2014:

April 2013 - May 31, 2014	Cargoes	Volume (MMbbl)	USD	SSP	Percent
Total Crude Oil Sales	46	33,108,724	3,307,062,667	9,921,188,001	100%
Less: Payments to Sudan			802,831,224	2,408,493,672	24%
Sales Allocated for Loan Repayment	15	8,864,733	887,466,968	2,662,400,904	27%
Nile Petroleum Sales	1	242,865	24,794,088	74,382,264	1%
Net Republic of South Sudan Sales	30	24,001,126	1,591,970,387	4,775,911,161	48%

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NOTE: The data shown in Table 5 includes updates to the press release issued by the Ministry of Petroleum and Mining on May 30, 2014. The information in the press release included certain forward information and estimates for May crude oil pricing which is only finalized at the beginning of June as well as adjustments for other factors that have been subsequently identified through the Ministry's month end reporting.

A total of 33.1 mb of crude oil valued at USD 3.3 billion (9.9 billion SSP) was sold during the reporting period. Net crude oil revenues received into the Republic of South Sudan, Ministry of Finance and Economic Planning bank accounts for the reporting period were USD 1.6 billion (4.8 billion SSP) from the sale of 24.0MMbbl of crude oil. Sales are net of transitional financial assistance and tariff payments to Sudan, sales allocated for loan repayments and Nilepet sales. All payments for oil loaded under the RSS name onto our customer ships up to the end of May 2014 have or will have been collected by the end of June 2014. According to our standard international sales contract,

payment is made by the buyer 30 days after the crude oil cargo has been loaded on board the vessel.

The sales volumes by month that were allocated to the RSS for the reporting period of April 2013 to May 2014 are shown in the first line of Table 6 and total 33.1 mb. Deductions are made for contractual loan repayment obligations and for sales volumes attributed to Nilepet's equity participation in the production agreements. Republic of South Sudan net sales were 24.0MMbbl.

#### Sales Volumes by Month - RSS Share (MMbbl)

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
RSS Total Sales	1.0	2.2	3.8	2.7	3.0	2.8	3.3	2.8	2.8	2.8	2.7	3.2	33.1
Loan Repayments				0.6	1.7	1.6	0.6	0.8	0.7	0.9	1.0	1.0	8.9
Nilepet Sales									0.2				0.2
RSS Net Sales	1.0	2.2	3.8	2.1	1.3	1.2	2.8	2.0	1.8	1.9	1.8	2.3	24.0
					Table 6								

The allocation of gross crude oil USD revenues received by month for the reporting period of April 2013 to May 2014 is shown in Table 7.

#### Crude Oil Revenue by Month (MMUSD)

	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Tota!
RSS Total Sales	98.3	214.6	383.4	265.1	299.3	263.6	335.7	285.4	280.8	279.3	271.6	330.0	3,307.1
Payments to Sudan	24.1	53.0	92.5	65.3	74.4	66.8	87.9	61.7	66.8	67.1	65.6	77.6	802.8
Loan Repayments				56.2	170.8	152.0	60.6	85.6	74.4	93.4	94.8	99.6	887.5
Nilepet Sales									24.8				24.8
RSS Net Sales	74.2	161.6	290.9	143.6	54.0	44.8	187.3	138.2	114.9	118.8	111.1	152.7	1,592.0
	Table 7												

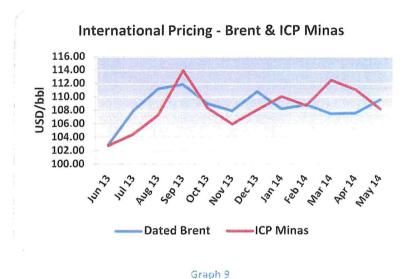
The MPM Marketing group continued to receive some administrative and reporting guidance from our Petroleum Advisors but MPM staff has now competently assumed full responsibility for the marketing of the country's crude oil. Also successful is the guidance and oversight of the cross-disciplinary Marketing Team consisting of MPM, MoFEP, BOSS, MOJ and Nilepet members who met regularly to review issues and evaluate and recommend the winning bidders.

### 4.3 Market Prices Achieved

World market prices remained in a tight range between USD 102 and USD 114 per barrel during the thirteen month period since the RSS production restart and the resumption of crude marketing. Global supply worries remain, as key

producing countries such as Nigeria, Iran, Iraq, Venezuela, Russia and Syria experienced disruptions in the supply chain due to political issues within each of their countries. The table and graph below illustrates the average monthly official international reference prices for Dated Brent that were incorporated into our Dar Blend contract price formulas and for ICP Minas in our Nile Blend contract price formulas, both averaging well over USD 105 per barrel.

International Formula Pricing Used in Contracts													
2013	Jun	Jul	Aug	Sep	Oct	Nov	Dec						
Dated Brent	102.91	107.95	111.25	111.89	109.04	107.97	110.81						
ICP Minas	102.75	104.44	107.30	113.93	108.35	105.96	108.06						
2014	Jan	Feb	Mar	Apr	May		Average						
Dated Brent	108.25	108.87	107.54	107.63	109.61		108.64						
ICP Minas	110.03	100 71	112.46	111.05	108.17		108.43						
ICF IVIIIIas	110.03	108.71	112.46	111.05	106.17		106.43						



### 4.4 Sales Price Differentials

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802.8 887.5 24.8

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The Marketing Team was able to achieve a steadily improved fixed quality differential in our bid tenders for both grades of the country's crude oil through increased competition by adding to the list of purchasers. In July, 2013, the Dar blend fixed deduct, from the reference price in Table 8 above, was about USD10/bbl and by May, 2014, it had been reduced to slightly more than USD7/bbl. Similarly, in August 2013 the Nile Blend deduct was about USD4/bbl and by January, 2014, the last month for Nile blend sales, it was at about USD2/bbl. Overall for the reporting period, the weighted average value

of the Dar Blend differential was -\$9.09 or -8.4% and the Nile Blend differential was -\$3.86 or -3.6%.

Weighted Aver	age Price Diffe	erential	
Aug	Sep	Oct	N

2013	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Dar Blend	(\$4.73)	(\$10.38)	(\$10.47)	(\$12.35)	(\$12.24)	(\$12.92)	(\$11.38)
Nile Blend	No Sales	No Sales	(4.00)	(10.78)	(3.36)	No Sales	(1.80)
2014	Jan	Feb	Mar	Apr	May		Average
<b>2014</b> Dar Blend	Jan (\$6.85)	<b>Feb</b> (\$7.54)	<b>Mar</b> (\$7.24)	<b>Apr</b> (\$7.89)	<b>May</b> (\$7.19)		<b>Average</b> (\$9.09)

#### Table 9

#### 4.5 Global Customer Base

The MPM Marketing Team continued to work to grow the customer base for our crude oil to increase competition and raise prices. 33 customers, including both end users and oil traders, were allowed to bid on our crudes following screening, with seven companies winning one or more cargoes over the marketing period as shown in Table 10.

RSS Customers and Cargoes Loaded							
2013	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Arcadia		1	2				
Chinaoil		1		2	2	1	
Glencore							2
Trafigura						1	
Unipec	1	1	3	2	2	2	
Vitol							2
Zhenhuaoil							1
Totals	1	3	5	4	4	4	5
270	Jan	Gal	Mar	Apr.	May		Total
Arcadia							3
Chinaoil		1		2			9
Glencore		1			2		5
Trafigura	1		1		1		4
Unipec	2	2	3	1			19
Vitol	1			1	1		5
Zhenhuaoil							1
Totals	4	4	4	4	4		46

Table 10

The following table illustrates the proportionate sales volumes and values, by crude oil type, that were made to each of the seven companies that purchased RSS crude oil:

Buyer Sales Distribution by Crude Type								
	Nile Blend			Dar Blend				
	Volume (bbls)	%	USD Value	%	Volume (bbis)	%	USD Value	%
Arcadia	629,825	24.4%	65,060,923	24.1%	1,570,641	5.1%	155,087,383	5.1%
Chinaoil	570,308	22.1%	58,827,270	21.8%	5,214,438	17.1%	515,237,816	17.0%
Glencore	0	0.0%	0	0.0%	3,808,245	12.5%	383,642,883	12.6%
Trafigura	0	0.0%	0	0.0%	3,985,816	13.1%	396,743,251	13.1%
Unipec	0	0.0%	0	0.0%	13,585,921	44.5%	1,349,360,429	44.4%
Vitol	814,372	31.5%	85,810,883	31.7%	2,358,939	7.7%	236,700,358	7.8% **
Zhenhuaoil*	570,219	22.1%	60,591,471	22.4%	0	0.0%	0	0.0%
Totals	2,584,724	100.0%	270,290,546	100.0%	30,524,000	100.0%	3,036,772,120	100.0%

Table 11

The table below highlights the proportion of total crude oil sales, by volume and by value, which were made to each of these seven companies:

Sales Distribution Total							
	Volume (bbls)	%	USD Value	%			
Arcadia	2,200,466	6.6%	220,148,306	6.7%			
Chinaoil	5,784,746	17.5%	574,065,086	17.3%			
Glencore	3,808,245	11.5%	383,642,883	11.6%			
Trafigura	3,985,816	12.0%	396,743,251	12.0%			
Unipec	13,585,921	41.0%	1,349,360,429	40.8%			
Vitol	3,173,311	9.6%	322,511,241	9.8%			
Zhenhuaoil	570,219	1.7%	60,591,471	1.8%			
Totals	33,108,724	100.0%	3,307,062,667	100.0%			

Table 12

#### 4.6 Customer Invitations

The following list of customers has been preapproved by the Marketing Team to be considered as potential buyers of RSS crude oil and can be included in the monthly cargo tender. It should be noted that with the assistance of the Bank of South Sudan a financial assessment of the required level of financial security has been established for each company, which appears on the right side column.

	Invitation List	Activity	<u>Type</u>	Security
1.	Addax Energy	No Activity	Trader	SBLC
2.	Arcadia	Award Winner	Trader/Refiner	SBLC
3.	Ascon Timpet	No Activity	Trader	SBLC
4.	Augusta Energy	No Activity	Trader	SBLC
5.	Chi'an Wei Ltd	Bidder	Trader	SBLC
6.	China Oil	Award Winner	Refiner	PU + CL
7.	CNOOC	No Activity	Refiner	Open
8.	Concord Energy	No Activity	Trader	SBLC
9.	Defense Solution	Bidder	End User	SBLC
10.	Glencore	Award Winner	Trader	SBLC
11.	Gulf Energy	No Activity	Trader	SBLC
12.	Gunvor	Bidder	Trader	SBLC
13.	LENKOR	No Activity	Trader	SBLC
14.	LOTCO	Request to Bid	Trader	SBLC
15.	Mitsubishi	Bidder	Refiner	SBLC
16.	Petronas	Bidder	Refiner/Equity	SBLC
17.	Rio Aguamia	Bidder	Trader	SBLC
18.	Royale Energy	Request to Bid	Trader	SBLC
19.	Safadi Group	Bidder	Trader	SBLC
20.	Sahara Energy	No Activity	Trader	SBLC
21.	Serha Oil	Bidder	Trader	SBLC
22.	Shell	No – Sanctions	Refiner	Open
23.	Shi Yun Limited	No Activity	Trader	SBLC
24.	SK Energy	No – Sanctions	Refiner	SBLC
25.	SOCCAR	Bidder	Refiner/Trader	SBLC
26.	Southex	No Activity	Trader	SBLC
27.	Topmar	Request to Bid	Trader	SBLC
28.	Total -	No Activity	Refiner	Open
29.	Toyota Tsusho	No Activity	Refiner/Manuf	Open
30.	Trafigura	Award Winner	Trader	SBLC
31.	Tri Ocean	No Activity	Trader/Equity	SBLC
32.	Unipec	Award Winner	Refiner	PU
33.	Vitol	Award Winner	Refiner/Trader	SBLC

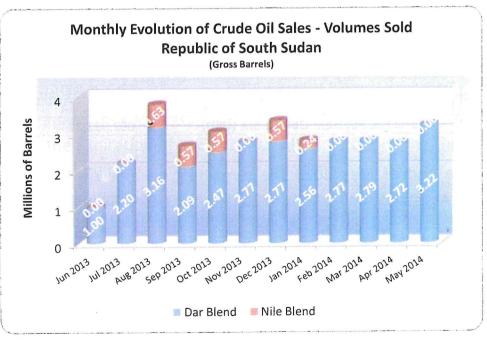
### 4.7 Marketing Report Card

The marketing effort for the period of April 2013 to May 2014 has clearly demonstrated the capability of the Ministry of Petroleum and Mining staff and the Marketing Team to successfully market the country's entitlement share of crude oil. The Ministry of Petroleum and Mining will continue to monetize our crude oil into the international marketplace at attractive price formulas, contract terms, and in a professional and transparent manner.

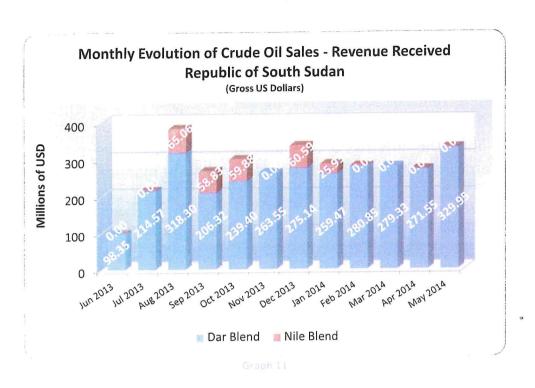
The Ministry will also continue to ensure that controls are in place to provide assurance that all oil revenues are documented and safely deposited into the Republic of South Sudan bank accounts maintained by the Ministry of Finance and Economic Planning. Since the restart of production, all crude oil revenues have been deposited into the government's bank account maintained at the Federal Reserve Bank in the United States. The world community has also finally recognized that the Sudan Sanctions Regulations no longer apply to South Sudan and all crude oil revenues are now being received in United States Dollars as opposed to the Euro payments that were being received in 2011. This has helped to minimize our currency exchange risk.

MPM will continue to develop its marketing expertise to help identify marketing opportunities and improve prices. The identification of new buyers and new markets, and the analysis of market behavior and crude oil prices are just some of the areas being considered for development.

The following graphs illustrate our performance during the reporting period.



Graph 10



## 4.8 Transitional Financial Assistance and Tariff Payments to Sudan

RSS Payment Obligations to Sudan – Since the restart of South Sudan crude oil production in April 2013 up to May 31, 2014, the Republic of Sudan has paid or is obligated to make the following payments to Sudan under the terms of The Agreement Concerning Oil and Related Economic Matters:

Description	Quantity / Value
Net Quantity (Barrels)	33,108,724
Transitional Financial Assistance (USD)	496,630,860
Processing, Transportation, Transit Fees (USD)	306,200,364
Total Fee Payment Obligations (USD)	802,831,224

As of the end of May 2013 the remaining balance on the Transitional Financial Assistance obligations to Sudan total USD 2.53 billion.

# 4.9 Outstanding Issues

# **Cross Border Operations**

Border demarcation has not yet been agreed upon between Sudan and South Sudan and the difficulty in determining the final point of cross

border delivery of material has impacted the logistics, expense and cost recovery related to RSS oil field operations.

#### **Future Cross Border Reservoirs**

The production operations can also potentially be impacted by the unresolved border issues. Foremost is the question of well ownership after the border is defined as there is the possibility that some producing wells in close proximity to the current border may subsequently revert to new ownership. This may raise questions regarding potential financial compensation as well as reservoir drainage.

#### Sudapet Issues

One of the outstanding issues yet to be resolved under the Cooperation agreement is the Sudapet/Nilepet case. The two countries continue to engage with views to reaching an amicably mutual solution.

#### Data in Khartoum

A significant amount of oil field data which is owned by South Sudan after independence remains in storage in Khartoum. The RSS is responsible for the data but has no suitable storage facility of its own. The data has been fully inventoried and is ready for relocation to South Sudan. Plans are currently in progress with one of the operating companies to construct temporary storage on the Ministry premises so that the data can be moved. The data is important to the RSS to assist with the development of a new reserve assessment and to support new exploration promotion programs.

#### **Financial Audits of Contractors**

An initial assessment of the Contractors' audit status has been completed by the firm Ernst and Young and a report has been issued to the Ministry. The financial and operational records for the periods subject to audit are located in Khartoum and the Contractors have offered to host the audits in that location. The next step will be to complete this detailed audit work prior to the expiration of audit rights. MPM is considering the selection of a competent audit firm to complete the work.

### 2012 Revenue Payments Withheld by Vitol and Unipec

In January 2012 Vitol and Unipec withheld portions of their payments due to the RSS for crude oil purchases. The Ministry has aggressively pursued the recovery of the withheld amounts and Vitol has subsequently paid the government in full.

Unipec continues to owe the government USD 8.8 million, and discussion to recover this balance, which is rightfully due to the people of South Sudan, is continuing.

# PART 5 - FUTURE ACTIVITIES

# May 2014 and Beyond

### 5.1 Re-Start Unity State Oil Production

The restart of production operations in Unity State is dependent on the security situation. The main oil processing facilities are secured but the oil fields cover a large geographic area and the risk remains high in outlying areas where many of the oil wells are located. Once security is stabilized the contractor can return to the area to assess damage and determine what remediation work needs to be done and the materials, supplies and manpower that will be required. Only after an assessment is completed can a time line for the return to production be reasonably determined.

# **5.2 Improved / Enhanced Oil Recovery Opportunities**

The oil production rates in the South Sudan oil fields are rapidly declining with increasing water cut. One of the options being considered by the Ministry of Petroleum and Mining and the Contractors is the implementation of Improved Oil Recovery (IOR) / Enhanced Oil Recovery (EOR) schemes. IOR / EOR projects have the potential to arrest the decline, significantly increase the amount of recoverable oil from the reservoir and prolong the life of the field.

There are various methods and technologies available for IOR / EOR projects that are being considered such as thermal, polymer flooding and gas injection, but they generally require significant investment and have a fairly long payout period. As a result, it will be necessary in some instances for the government to renegotiate license extensions on existing producing oil fields in order to ensure that the additional investments will be beneficial to the government and economically fair to the contractors.

# **5.3 Infrastructure Options**

# 5.3.1 Refinery Projects

The refineries proposed would work to refine crude oil from different oil fields in the RSS, and produce mainly diesel, kerosene, naphtha and residue (Heavy Fuel Oil). The locations of those

facilities were dictated by the fact that there is a need to reduce the burden of transportation to the consumption centers. In addition to the proximity of those locations to the oil fields it also supports the provision of quick solutions to the immediate fuel needs for different production activities such as transportation, agriculture and power generation.

# Thiangrial Refinery in Upper Nile State

- Design capacity is 20,000 BPD to be constructed in two modular phases, phase one 10,000BPD and another phase after two years of 10,000BPD.
- Main petroleum fractions/products: Diesel, kerosene, naphtha and HFO (Heavy Fuel Oil).
- Financer: Frontiers Resource Group, USA; Contractor Ventech Engineering, USA.
- Status: Construction work has been stopped due to the political crises in South Sudan and is expected to resume by the end of the 2014 rainy season.

# Bentiu Refinery, Unity State

- Design capacity: 7,000 BPD modular construction.
- Operational Capacity: 5000 BPD
- Additional expansion to the facility would be 25,000 BPD including complex facilities to cater for cracking the long residue in order to increase the yield of light products.
- Financer: Safinat Limited of Russia; Constructed by Safinat
- Status: The refinery construction was completed in January 2014 and pre-commissioned before it was stopped because of the crises in South Sudan.
- It should resume once the situation is cleared later in 2014.

# Akon Refinery, Warrap State

- The initial proposed capacity: 50,000 BPD but it is likely to be reduced.
- Financier: yet to be identified.

• Status: This year, 2014, some progress may be witnessed regarding this project.

### Pagak Refinery, Upper Nile State

- Proposed capacity: 50,000 BPD.
- Financier: Black Rhino, USA.
- Status: Feasibly study is being finalized by Foster Wheeler; by the end of 2014 financial close might be reached to kick- off the project.

### 5.3.2 Fuel Depot Projects

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A number of fuel Depots were proposed to be constructed in different locations in the country since 2012, but none of these have found its way to execution due to lack of funding. Now, with a new approach being adopted by the MPM, Nilepet is assuming responsibility for funding the fuel storage terminals, and it is expected that progress will be realized in the near future.

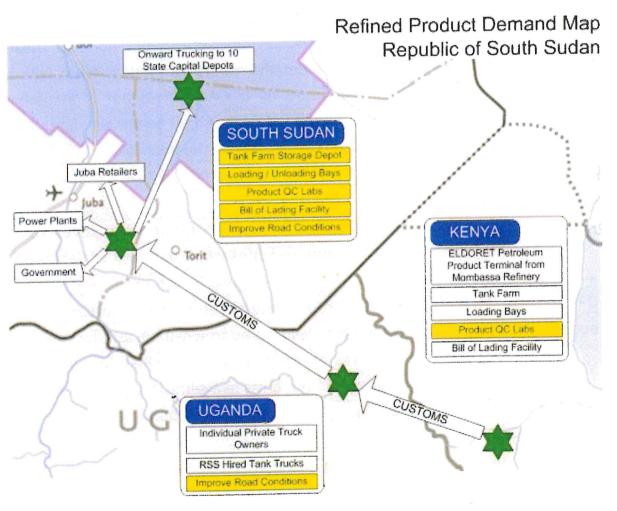
### 5.3.3 Pipeline Projects

- The first phase of the feasibility study for an alternative export pipeline was completed and presented to the RSS Cabinet in November, 2013.
- Two export pipeline routes have been studied and compared, in order to facilitate a decision as to which should be the best solution that serves the interests of the Republic of South Sudan; however due to the crisis as well, a decision has not yet been made. It is expected to be finalized soon.
- The inland alternative evacuation pipeline from the Tharjath oil fields – Unity state to Paloch – Upper Nile State has been started. The conceptual design is completed and we expect to proceed with the project in the coming weeks subject to security considerations.

### **5.4 Products Supply**

The Republic of South Sudan primarily consumes distillates in the form of diesel for truck fuel. Products are currently imported via Kenya. The supply of products for domestic consumption is being handled by Nilepet along with other private companies. The Ministry of Petroleum and Mining, South Sudan and the Government of Kenya have an agreement in place regarding the allocation of ullage. The MPM also provides the formal approval for companies to pick up and transport product from Kenya. Nilepet is responsible for product distribution within South Sudan.

Downstream depots and import routes are illustrated below.



# 5.5 Challenges and Opportunities Ahead

The Ministry of Petroleum and Mining Marketing Group has both challenges and opportunities ahead. We have highlighted in this report many of the

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successes and achievements since the restart of production in South Sudan. As we celebrate the third anniversary of our country's independence, we have clearly proven our ability to market our crude oil in a transparent manner and at attractive international prices. Marketing staff are located at the main MPM office in Juba and at the marine terminal in Port Sudan to oversee the tanker loadings of the government cargoes. With the guidance of the marketing team these staff members have assumed complete responsibility for the marketing of our country's crude oil.

The number of workstations and the amount of quality office space for employees has increased. Training has been improved through the offerings of the contractors and the crude oil buyers and advisor support is now limited to administrative oversight. The strengthened capacity of our staff, even as we continue to experience deficiencies in manpower and financial resources, is notable. A MPM website has been developed which will eventually house public marketing information and contacts.

The MPM continues to work through many of the internal organizational challenges to improve the performance of the people within the department. Some of our initiatives include:

- Continuous improvement in education and training for our MPM staff;
- Clearly defined roles & responsibilities for all levels within MPM;
- Developing an internet database platform for all employees to utilize daily;
- Improving internal and external communication of marketing information;
- Developing a seamless working relationship with other ministries.

Work has begun, but more hard work is needed to build upon our past experiences...but the marketing road ahead remains bright......!



## **Closing Remarks**

"This Marketing Report is the second issue by the Ministry of Petroleum and Mining, Republic of South Sudan. It provides an overview of world oil markets and fundamentals, price forecasts, oilfield reserves, and the MPM marketing performance. It offers an overview of our infrastructure plans such as refineries and storage depots and provides insight into our efforts to ensure transparency in all that we do.

The young people in our marketing group have demonstrated their understanding of the fundamentals of crude oil marketing and their enthusiasm for their work. But we cannot stop here. Crude oil marketing must continue to develop with buyer and market diversification and a better understanding of global economics and pricing analysis.

Our goal with this and subsequent editions of the MPM Marketing Report is to provide you with comprehensive information which clearly explains the monetization of our country's crude oil. Our emphasis is on transparency and full compliance with our legislative requirements for information disclosure. Our efforts will not end with this report — we will continue to look at ways to improve our marketing operations and add value. It is our hope that as we move forward we will more fully capture the new developments occurring within the Ministry on the path of reaching the goal of energy independence, and a greater prosperity for our people."

Sincerely,

Machar Aciek Ader,

1<sup>st</sup>Undersecretary MPM