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## MINISTRY OF PETROLEUM AND MINING

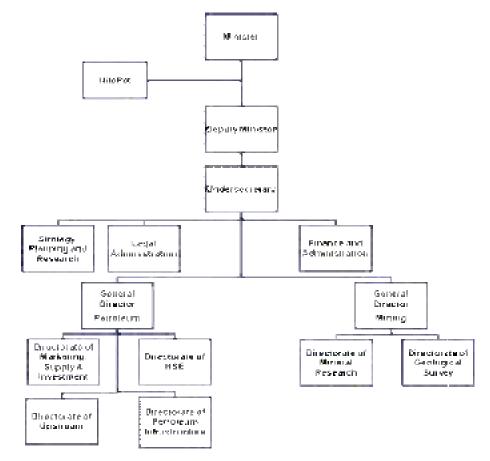
## July 9, 2011 to January 31, 2012

Honorable Stephen Dhieu Dau Ayik is the Minister of Petroleum and Mining for the Government of the Republic of South Sudan. Before his appointment as Minister of Petroleum and Mining, he held the position of State Minister of Finance, Trade and Economic Planning in Upper Nile State in the Government of Southern Sudan.

Minister Dhieu Dau comes into the leadership role at a crucial time in the history of the new republic in which his Ministry was immediately presented with significant challenges and opportunities to develop the energy sector for the country.

In his first months in office, the Minister quickly assessed the capabilities and organizational structure of his Ministry and requested restructuring of the Ministry to reflect the aspirations and vision of the new mandate. He is credited with oversight of the country's early oil sales revenues which totaled USD 3.3 billion before a decision was made to shut the oil wells for security reasons in the dispute with the Republic of Sudan.

The newly organized MPM is responsible for the Petroleum sector which includes Marketing, Supply, Investment, Health, Safety and Environment, Upstream and Infrastructure. The Mining sector includes Minerals Research and Geological Survey.



## **MESSAGE FROM THE MINISTER**

When South Sudan attained independence in July 2011, our people entrusted the Ministry of Petroleum and Mining with one of the most challenging and important tasks of the new government – to manage all aspects of our national petroleum wealth – from extraction and transport to sales and delivery. In this, the ministry has shown exceptional competency in taking over highly complex marketing and management of crude oil. Their efforts, up until production was disrupted by Sudan in December, have brought some 10 billion SSP into our budget. These are the funds that build our schools and clinics, support our security forces,



and allow us to realize the vision of building our new nation. Additionally, the ministry has taken on highly complex and sensitive task of exploring new means of export, including two possible pipelines. The smooth transition of petroleum management to a young and hardworking team is to be commended.

Now, as we prepare to move into the next phase of South Sudan's petroleum and mining industry, the ministry will face great challenges. Foremost among these is the obligation of openness and accountability to our citizens. The people who endured these many years during our struggle are entitled to know where our resources come from, how they are handled and where the revenues go. As we move to adopt international standards of transparency and accountability, such as those defined in the Petroleum Bill and the Extractive Industries Transparency Initiative, I encourage all members of our elected government to make deeper their understanding of how our petroleum industry works. 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 greater understanding of the management of the petroleum and mining industries. In this inaugural publication we should find encouragement that openness is not just a word, but that our government truly is coming together in a spirit of responsibility, diligence and cooperation.

Honorable Stephen Dhieu Dau Ayik Minister of Petroleum and Mining

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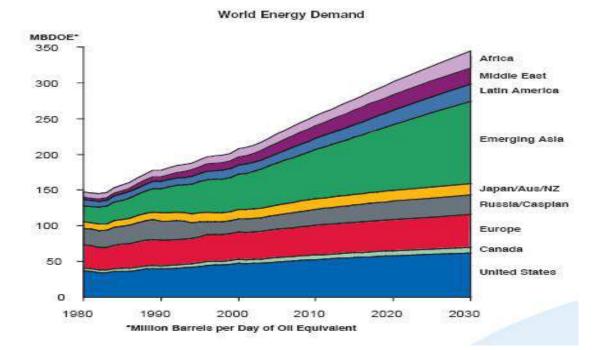
# PART 1 – GLOBAL OIL ENVIRONMENT July 9, 2011 – January 31, 2012

## 1.1 World Energy Supply & Demand

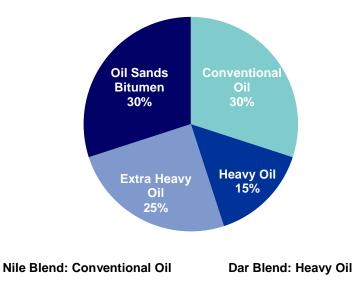
Demand for crude oil on a global basis continues to rise. Total oil consumption in 2011 was 89.1 MMBOD, forecast to rise to 89.9 MMBOD in 2012. The increase is a result of growth in world populations and consumption in developing and emerging countries to improve living standards. This rise is nearly 1 MMBOD.



Demand for energy is global. While steady demand for oil is expected to continue from North America and Europe, the greatest increases will be from the emerging Asian countries, notably China. Modest increases in consumption are expected for Africa, the Middle East and Latin America.



Exploration and production of oil becomes an increasing challenge for oil companies each year. As existing fields and reservoirs become depleted, new replacement reserves must be identified and developed. Accordingly, the mix of crude oils has shifted over the years from primarily conventional light and medium grades which are relatively easy to process in refineries, to a heavier mix of crudes which require more sophisticated upgrading equipment. This in turn also increases the cost of operations. Below is a view of the world's current oil reserve make up of conventional, heavy oil, extra heavy oil and bitumen quality oil sands.

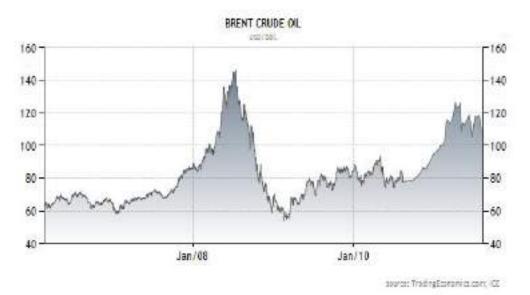


#### **Total World Oil Reserves**

South Sudan export quality crude oils are well-suited to attract buyers in the international markets. Nile Blend is considered conventional crude which is a medium, low sulfur, grade that can be easily processed by most major refiners around the world. Dar Blend is a heavy oil with several impurities which must be removed from the oil during the processing phase. One of these impurities is high acid content, making Dar Blend difficult for many refiners to store, and so it has a limited range of buyers. Nonetheless Dar Blend is low sulfur which offers an operational advantage of not requiring costly sulfur removal. Both of the RSS crudes are well-suited to attract buyers from around the world and they achieve international prices.

#### 1.2 Crude Oil Price Outlook

Crude oil prices have steadily increased over the past three years following the lows of \$40-50/BBL experienced in early 2009. Price levels above \$100/BBL have occurred throughout 2011 and are continuing now into 2012. Many forecasters believe prices at these high levels are not sustainable in the long run, as demand destruction inevitably occurs on discretionary consumption when the market perceives costs of petroleum related products beyond a normal range. Still, as the economies of China and India remain strong engines for growth, oil prices can be expected to remain at higher than historical averages. Fallback to \$90-100/BBL is expected among some analysts – still a high level. Below is a graph that shows the price of Dated Brent over the past several years:



South Sudan crude oil pricing for Dar Blend and Nile Blend received high international prices. Dar Blend is priced directly off of Dated Brent quotes and Nile Blend uses ICP Minas, a formula which equates to a price slightly above Dated Brent price levels.

### **1.3 The OPEC Factor**

The Organization of Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental organization, created at the Baghdad Conference on September 10–14, 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. The current group consists of the following twelve members:

Country	Joined OPEC	Location
Algeria	1969	Africa
Angola	2007	Africa
Ecuador	rejoined 2007	South America
Iran	1960	Middle East
Iraq	1960	Middle East
Kuwait	1960	Middle East
Libya	1962	Africa
Nigeria	1971	Africa
Qatar	1961	Middle East
Saudi Arabia	1960	Middle East
United Arab Emirates	1967	Middle East
Venezuela	1960	South America

#### **OPEC Member Countries**

OPEC's objectives are: 1) to co-ordinate and unify petroleum policies among member countries in order to secure fair and stable prices for petroleum producers; 2) to provide an efficient, economic and regular supply of petroleum to consuming nations; and 3) to offer a fair return on capital to those investing in the industry.

OPEC has created an oil price band mechanism to help strengthen and stabilize crude prices. The band had some modest successes in the first decade of implementation; however the combination of market forces, speculation and other factors transformed the situation in 2004, pushing up prices and increasing volatility in a well-supplied crude market. Oil was used increasingly as an asset class. Prices soared to record levels in mid-2008, before collapsing in the emerging global financial turmoil and economic recession. OPEC became prominent in supporting the oil sector, as part of global efforts to address the economic crisis. OPEC's production quotas and price targets continue to serve a role to stabilize energy markets, giving the world a forecast of expectation for price and output representing about a third of the world's total production.

# PETROLEUM UPSTREAM FRAMEWORK AND ANALYSIS July 9, 2011 to January 31, 2012

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

#### 2012 Petroleum Bill Overview

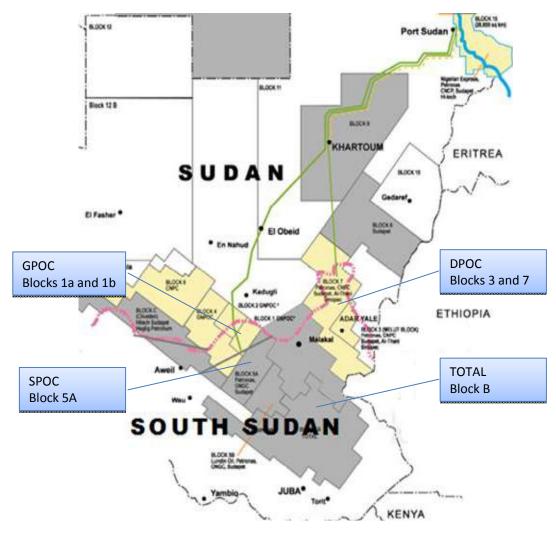
- The bill has 21 chapters and 100 sections covering upstream ownership of petroleum is vested in the people and managed by RSS for their benefit
- Emphasis is on maximum recovery within a framework
  - providing for "prudent operations",
  - using best international practices,
  - ensuring safety, security and protection of the environment, and
  - requiring transparency, accountability and ethical behaviour, 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
- Bill endorses the concept of "*local content*", using South Sudanese, if competent and available, to fill skilled and unskilled positions
- Bill affirms MPM responsible for admin, implementation & enforcement
- Bill provides for broad regulatory powers to legislative regime
- Bill has passed third reading in Parliament

#### Petroleum Regulations

- Four Petroleum Regulations are now being developed: 1) local content, 2) records & reporting, 3) drilling & production, and 4) management systems.
- There are 6-8 additional regulations expected to be written this summer.



## 2.2 Exploration & Production Licenses Overview

#### Blocks 1a and 1b – Greater Pioneer Operating Company (GPOC) – Unity

Crude oil flows into the larger Nile Blend export stream to market. Producing wells with varying qualities which are blended to average 34 API, 0.06% Sulfur.

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

Crude oil flows into the larger Nile Blend export stream to market. Producing wells with varying qualities which are blended into the Nile Blend stream.

#### Blocks 3 & 7 – Dar Petroleum Operating Company (DPOC) – Upper Nile

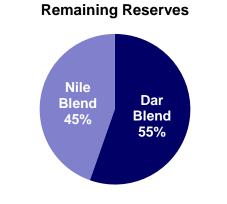
Crude oil flows in larger Dar Blend export stream to the market. Producing wells with varying qualities which are blended to average 26 API, 0.1% Sulfur.

#### Block B – Total

There is no production from this block – exploration phase only at this time.

## 2.3 Crude Oil Reserves and Analysis

The chart below shows the Republic of South Sudan current reserves for the remaining life without new exploration replacements. 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.



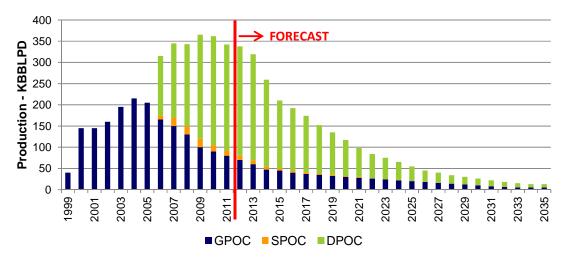
Crude Type	Company	Block	Reserves (mmbls)
Nile Blend	GPOC	1a, 1b	582.30
Nile Blend	SPOC	5A	180.97
Sub Total			763.27
Dar Blend	DPOC	3, 7	948.36
Total			1,711.63

Republic of South Sudan remaining reserves: 1.7 billion BBL

- Nile blend production from blocks 1a/1b and 5A in Unity
- Dar blend production from blocks 3 and 7 in Upper Nile
- 55% of the estimated remaining commercial reserves are Dar Blend in Upper Nile

## 2.4 Production Forecast and Recovery Factors

The graph below shows the decline rates for all three producing blocks through 2035 without further reinvestment and replenishment reserves.



#### **Production Forecast**

- Production declines are expected without reserve replacement over the next 5 years. This is a normal production reserves decline pattern without additional investment.
- Current shut down of wells will not change the production profile as oil wells can 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 foreign investment, can materially improve the overall production forecast curve, as new investment will focus on production growth.

# PART 3 – MARKETING PERFORMANCE July 9, 2011 – January 31, 2012

### 3.1 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 of oil sales contracts. Members of the marketing team are:

Macar Aciek Ader, Chairman	Undersecretary MPM
Simon Kiman Lado	Ministry of Finance
Mohamed Lino Benjamin	Director General, MPM
Isaac Yak Tutdel	Legal Advisor MPM
Simon Chol Martin	Director of Downstream MPM
Garweg Peter Gatkouth	Deputy Director Downstream MPM
Moses Makur Deng	Bank of South Sudan
Barnaba Tito	MPM Member
Grace Araba Gordon	Bank of South Sudan
Akuei Ajou Akuei	MPM Member
John Distaso	Trading Advisor, MPM
Glen Hutka	Marketing Advisor, MPM
Tiberious Ohide	MPM Member
Richard Efil Simplicio	Ministry of Finance
Jackson Wilson Bona	Ministry of Finance
Koul Majak	Nile Petroleum
Chiek Reech Kuol	MPM Member
Tom O'Connor	Petroleum Advisor, MPM

The list above can be expected to change and grow as reassignments within the various ministries occur and additional experienced marketers from the Republic of Sudan are relocated back to Juba.

#### 3.2 Marketing and Transportation

Crude marketing began in mid-July, 2011, immediately following our country's new independence, and successfully continued through mid-January, 2012.

Total crude oil revenues received into RSS bank accounts were USD 3.3 billion from the sale of 33.6 million barrels of crude oil. All payments for oil loaded under the RSS name onto our customer ships have been collected.

RSS Crude Oil Volumes Sold & Revenues Received										
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Total		
MM BBLS	3.1	5.5	6.7	6.2	5.3	4.3	2.5	33.6		
MM USD	305.7	528.7	674.9	618.0	560.4	425.7	224.2	3,337.6		

The MPM Marketing team received assistance from our Petroleum Advisors and several of our employees have now been well-trained and ready to market oil when operations resume. Also successful was the creation of a cross-disciplinary Marketing Team consisting of MPM, MoFEP, BOSS, MOJ and Nilepet members who met regularly to review issues and select the winning bidders each month.

#### 3.3 Market Prices Achieved

World market prices remained steady at high historical averages during the seven month period in which MPM marketed RSS crude. Global supply worries remain, as key producing countries such as Nigeria, Iran, Iraq and Syria continued to experience disruptions in supplies due to political issues within each of their countries. The table below shows the average monthly price for Dated Brent received in our Dar Brent contract price formulas and ICP Minas from our Nile Blend contract price formulas, both averaging well over USD 100 per barrel.

International Formula Pricing used in Contracts											
Basis	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Avg			
Dtd Brent	116.88	110.37	113.12	109.43	110.66	107.83	110.58	111.27			
ICP Minas	119.03	114.91	112.50	110.51	116.04	112.52	118.38	114.84			

The Marketing Team was able to achieve a steadily improved fixed quality differential in our bid tenders for both grades through increased competition by adding to the list of purchasers. In July, 2011, the Dar blend fixed deduct was \$16-18/BBL and by January, 2012, it was down to \$8-9/BBL. Similarly, in August 2011 the Nile Blend deduct was \$6/BBL and by December, 2011 it was a premium of \$1/BBL.

#### 3.4 Global Customer Base

The MPM Marketing Team worked hard to grow the customer base for our crude oil to increase competition and raise prices. Over 20 customers were allowed to bid on our crudes following screening, with 6 companies winning one or more cargoes over the marketing period as shown:

RSS Customers and Cargoes Loaded											
JulAugSepOctNovDecJanTotal											
China Oil	1	2	4	5	1	2		15			
Unipec	1	2	2	2	4	2	2	15			
Vitol	2	2	1		2		1	8			
Petronile			2			1	1	4			
Arcadia 1								1			
Tri-Ocean 1								1			
Totals	4	7	9	8	7	5	4	44			

The following table illustrates the proportionate sales volumes and values, by crude oil type, that were made to each of the 6 companies:

Buyer Sales Distribution by Crude Type											
	Ν	lile Blen	d	Dar Blend							
	Volume (bbls)	%	USD	%	Volume (bbls)	%	USD	%			
Chinaoil	3,611,410	63.6	391,240,274	62.6	8,242,767	29.6	804,951,129	29.4			
Unipec	1,140,318	20.0	130,315,055	20.9	8,748,598	31.4	859,721,347	31.4			
Vitol	0	0	0	0	7,200,291	25.8	713,104,457	26.0			
Petronile	0	0	0	0	3,103,951	11.1	305,974,580	11.2			
Arcadia	950,300	16.7	103,022,023	16.5	0	0	0	0			
Tri Ocean	0	0	0	0	600,326	2.2	58,369,697	2.1			
Totals	5,702,019	100.0	624,577,352	100.0	27,895,933	100.0	2,742,121,209	100.0			

Sales Distribution Total						
	Volume (bbls)	%	USD	%		
Chinaoil	11,854,168	35.3%	1,196,191,403	35.5%		
Unipec	9,888,916	29.4%	990,036,402	29.4%		
Vitol	7,200,291	21.4%	713,104,457	21.2%		
Petronile	3,103,951	9.2%	305,974,580	9.1%		
Arcadia	950,300	2.8%	103,022,023	3.1%		
Tri Ocean	600,326	1.8%	58,369,697	1.7%		
Totals	33,597,952	100.0%	3,366,698,562	100.0%		

The table below highlights the proportion of total crude oil sales that were made to each of these six companies:

#### 3.5 Outstanding Issues

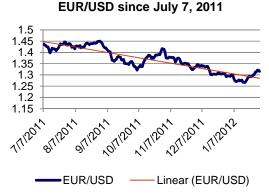
**Revenue deductions**: A total of USD 30 million of revenue is being retained by our customers which they deem to cover losses experienced due to ship delays, loading shortages, and refinery outages during January-February, 2012 as a result of ships being detained by Sudanese port authorities from the Government of Sudan.

**Underlift volumes**: There remains crude owed to RSS on the books from scheduled oil not loaded from December 2011 - February 2012. The exact volume is being reviewed with the operating companies, DPOC and GPOC.

**Service fees owed**: A total of USD 1.5 million is owed to the ship agent hired by MPM to perform port services and USD \$25,000 is owed to inspection companies for quantity and quality control (Q/Q) during loading.

#### 3.6 Sudan Sanctions Regulations (SSR)

The Sudan Sanctions Regulations (SSR) continued to impact South Sudan after independence despite the April 12, 2011 statement by the U.S. Department of Treasury's Office of Foreign Asset Control (OFAC) that the RSS would be exempt. South Sudan's commercial banking partners remained of the view that the SSR applied to our country's financial activities, resulting in our oil revenues being paid in Euro currency rather than in the preferred United States dollars. Sixty-five of the sixty-seven crude oil deposits from buyers were made in Euros and two were received in USD. The Euro / US Dollar exchange rate has ranged



from a high of 1.4385 in early August 2011 to a rate of 1.3152 at the end of January 2012, dropping to a low of 1.27180 in mid-January. Consequently the RSS has been exposed to foreign exchange fluctuations from the declining Euro exchange rate.

On December 8, 2011, the OFAC formally issued two general licenses that amended the SSR and which authorizes all activities previously prohibited involving the petroleum and petrochemical industries in the Republic of South Sudan and related financial transactions. The MPM and the Central Bank have taken steps to ensure that future crude oil payments will be made in USD.

#### 3.7 Customer Invitations

The following list of customers has been preapproved by the Marketing Team to be considered as potential buyers of RSS crude oil in the monthly cargo tender. Note that a financial assessment of the required level of financial security has been established for each company, which appears on the right side column.

<u>Invit</u>	tation List	Activity	Туре	<b>Security</b>
1.	China Oil	Award Winner	Refiner	PU + CL
2.	UNIPEC	Award Winner	Refiner	PU
3.	Arcadia	Award Winner	Trader/Refiner	SBLC
4.	Vitol	Award Winner	Refiner/Trader	SBLC
5.	Total	Dec Begin Bidding	Refiner	Open
6.	Trafagura	Bidder	Trader	SBLC
7.	Shell	No – Sanctions	Refiner	Open
8.	Petronile	Award Winner	JV Trader	SBLC
9.	SK Energy	No – Sanctions	Refiner SBLC	Open
10.	Mitsubishi	Bidder	Refiner SBLC	SBLC
11.	Tri Ocean	Award Winner	Trader/Equity	SBLC
12.	Socar	Bidder	Refiner/Trader	SBLC
13.	Southex	No Activity	Trader	SBLC
14.	Safadi Grp	Bidder	Trader	SBLC
15.	Toyota	No Activity	Refiner/Manuf	Open
16.	Petronas	Bidder	Refiner/Equity	SBLC
17.	HML	Bidder	Trader/Shipping	SBLC
18.	LENKOR	No Activity	Trader	SBLC
19.	GUNVOR	Bidder	Trader	SBLC
20.	CNOOC	New in Dec	Refiner	Open
21.	Royale Energy	Request to Bid	Trader	SBLC
22.	TOPMAR	Request to Bid	Trader	SBLC
23.	LOTCO	Request to Bid	Trader	SBLC
24.	RIO	Request to Bid	Trader	SBLC

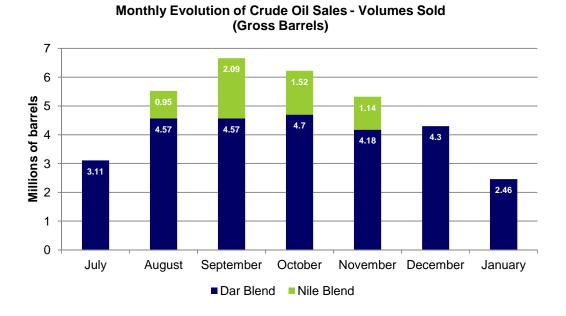
Notes:

**Shaded area**: newly added to tender list. Financials not reviewed by MoFEP. **Boxed area**: Pending MPM guidance &/or preliminary evaluation.

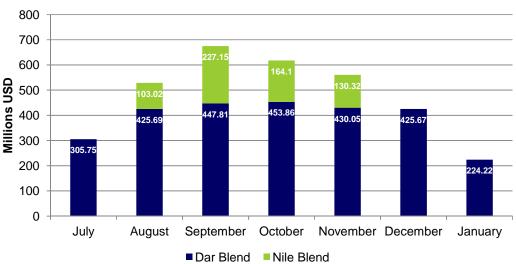
#### 3.8 Marketing Report Card

The marketing effort for the period of July 2011 to January 2012, by all measures, was a huge success for MPM to monetize our crude oil into the international marketplace at attractive price formulas, contract terms, and in a professional manner. All monies were deposited into RSS bank accounts to service budgeted projects and expenses.

MPM continues to actively seek alternative ways to export our oil during the period of impasse between RSS-GOS and stand ready and able, to perform all necessary marketing-related activities for sale into the international export markets when our oil resumes production.



#### **Volume & Revenue Graphs**



Monthly Evolution of Crude Oil Sales - Revenue Received (USD Net of Price Discount Only)

# PART 4 – TRANSPARENCY February 2012 and Beyond

#### 4.1 International Best Practices

As of July 9, 2011, the Republic of South Sudan is a new, democratic country with a multiparty system. This marks a milestone of historical significance after decades of fighting for freedom and independence.

Our newly formed country is dedicated to forming governmental structures and forging new 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 money 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 BOSS
- Documented Meeting Minutes

#### **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

In addition to marketing activities engaged in direct selling of oil listed above, MPM is continuing a practice of transparency to govern all business activities. For example, a newly formed Petroleum Infrastructure Development Team (PIDT) was officially sanctioned and commissioned by the MPM Minister on January 31, 2012. The core members of the team and their mandate have been identified and they meet on a regular basis to review issues.

## 4.2 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 on the following page.

	Republic of South Sudan - Ministry of Petroleum & Mining
	Bid Evaluation Criteria
	<b>-Approval</b> keting Team pre-agree list of companies allowed to participate in der
	<b>nsparency</b> Bids received within the Tender timeline are tabled for review by Team
	<b>nformity</b> s received that do not conform to Tender conditions may be eliminated
	<i>mmitment</i> ntion is to commit all cargoes offered in Tender if acceptable conditions
	<i>ling Priority</i> ards should be announced in date order to avoid distressed sale later
<b>Pric</b> Pric	<b>ce</b> ing is a major (not only) factor in awarding cargoes to winning Bidders
	c <b>urity</b> ancial security is a major (not only) factor in cargo awards
	<b>ersification</b> eading exposure to multiple Bidders is a factor in awards
	get Buyers cognition of large end user factored in if relationship adds value to RSS
	<b>gotiation</b> ow up direct negotiation should be limited to clarifying Bid submissions

## PART 5 – FUTURE ACTIVITIES February 2012 and Beyond

## 5.1 Re-Start Oil Production

South Sudan oil liftings ended mid-way through January 2012 and the operators removed RSS from the final programs. The operators explained that some of the RSS final January scheduled cargoes were cancelled as a result of either blockages from GOS or insufficient oil in tanks and in the pipeline. The entire February 2012, lifting schedules were committed to customers but later cancelled due to the subsequent shutdown of all oil wells in the country. These cancellations occurred prior to chartering ships for February.

The re-start date for RSS oil exports remains unclear at this time. However, negotiations with GOS continue and alternative means to export are being considered and will be the subject of our next publication.

### **5.2 Infrastructure Options**

A list of the infrastructure options under consideration by RSS are presented below. Pipelines, rail and trucking are intended to create revenue generation by exporting crude oil. Refinery projects under consideration are intended to provide security of supply for finished products and potentially lower the cost of finished products for local consumption.

- 1. Infrastructure projects under consideration are:
  - Pipeline from RSS oil fields to Lamu, Mombasa and/or Djibouti;
  - Refineries to meet domestic demand;
  - Power plants designed to burn crude or residue;
  - Trucking crude oil from fields to Djibouti;
  - Trucking and rail to Mombasa, and
  - New roads, airports, fiber optic cable and more.
- 2. In each case, significant work is needed to identify and prioritize:
  - RSS true needs;
  - Adequate technical solutions;
  - Financing approach in line with RSS major financial constraints;
  - Legal aspects to be dealt with;
  - List of operational matters that will need to be dealt with;
  - Security and safety considerations;
  - Environmental protection, and
  - Capacity requirements to pursue these projects in parallel.

3. Cost estimates have yet to be developed with precision, but for scoping purposes they can be estimated as follows:

Pipelines (1 or 2 pipelines)	Capital Cost	
<ul> <li>Pipeline from Upper Nile to Ethiopia/Djibouti</li> </ul>	3+ billion USD	
Pipeline from Upper Nile to Kenya/Lamu	4+ billion USD	
Pipeline from Unity to Kenya/Mombasa	3+ billion USD	
Refineries (1 or 2 refineries)		
<ul> <li>Refinery and related costs (Unity or others)</li> </ul>	200 million USD	
Other refineries (small or large scale)	500 million – 2 billion USD	
Power plants (using residual from the refineries)	To Be Determined	
Temporary Solutions		
Trucking oil to Djibouti	200 million USD	
Rail as an alternative to pipeline:	2 – 4 billion USD	
TOTAL	10+ billion USD	

## 5.3 Refinery Applications

The Republic of South Sudan is anxious to take advantage of our newly established independence by equipping our country with appropriately designed energy infrastructure to provide a source of finished product supply from our indigenous crude beneath our soil.

One unique approach toward this objective is to consider partnering with companies with experience building refineries and other technically advanced infrastructure in difficult or remote locations. RSS has unique needs for a relatively small refinery application and further benefits from minimizing the costs to import material and labor to perform work. Ventech Engineering, headquartered in Houston, USA shown below, is one company with a niche for building and delivering modular sized refinery applications fully assembled.

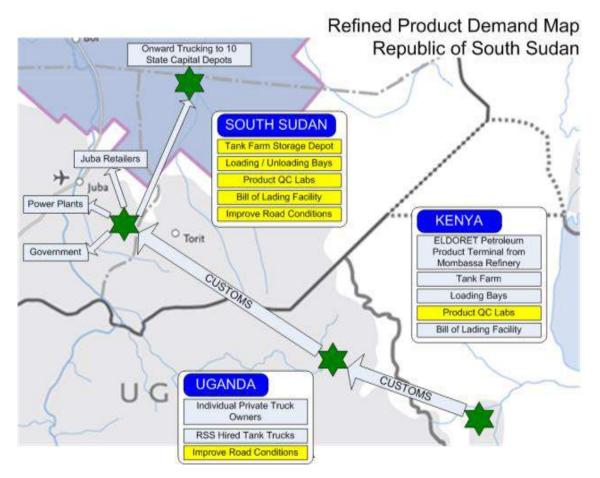


The following photo shows the Ventech warehouse and production facilities. All modular units are framed to fit onto flatbed trucks for delivery to the site location. The newly formed PIDT (Petroleum Infrastructure Development Team) is evaluating this and other options to create a tailor-made application just right for the country's needs.



## 5.4 Products Supply

An internal study to understand total historical and planned finished product demands, by product type and location, is in progress. The country primarily consumes distillates in the form of diesel for truck fuel. Products are currently imported via Kenya. Downstream depots and import routes are illustrated below:



## 5.5 Challenges Ahead

The Ministry of Petroleum and Mining has both challenges and opportunities ahead. We highlighted in this report many of the successes and opportunities, including the infrastructure aspirations required to position the country toward energy independence.

In addition, the MPM also has begun to work through many of the internal organizational challenges to improve the performance of the people within the department. A listing of some areas of focus being developed is shown below:

- Improved education and training for our MPM staff;
- Clearly defined roles & responsibilities for all levels within MPM;
- Integrating experienced Southerners from north, as appropriate;
- Developing an internet platform for all employees to utilize daily;
- Creating a web-site for MPM housing public information and contacts;
- Increasing the number of workstations and office space for employees;
- Seamless working relationships within other ministries.

Work has begun, particularly in the area of marketing and revenue accounting, as several key staff were trained to carry out these duties. More work is needed to expand these learnings...but the road ahead is bright!



#### **Closing Remarks**

"This Marketing Report is the first issue by the Ministry of Petroleum and Mining, Republic of South Sudan. It provides an overview of world oil markets, price forecasts, oilfield reserves, marketing performance and a glimpse of the aggressive infrastructure plans we have to provide export alternatives for the future. With subsequent additions, the report will evolve to 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, Undersecretary MPM