

Madagascar Oil^{1,7}

Share Data			
Recommendation			BUY
Target			100p
Shares - (mm, basic/f.d.)		1	96.4/198.7
52-week high/low			98p/24p
Market capitalisation (mm)			75.4
Cash (mm)			54.0
Enterprise value (mm)			21.4
Total projected return			317%
Risked			118p
Unrisked NAV			446p
P/NAV (Risked)			20%
Key financials	10A	11E	12E
Oil and NGLs (b/d)	0.0	0.0	0.0
Natural Gas (mmcf/d)	0.0	0.0	0.0
Total (mboe/d) 6:1	0.0	0.0	0.0
Equivalent Growth	nm	nm	nm
Brent (US\$/b)	79.73	107.00	105.00
Natural Gas (US\$/mcf)	6.55	9.03	9.00
EPS (f.d.)	(0.06)	(0.02)	(0.08)
CFPS (f.d.)	(0.04)	(0.02)	(0.08)
Capex (mm)	0.0	0.0	0.0
Net debt (mm)	(67.5)	(41.0)	(2.3)
Debt/CF	nm	nm	nm
P/CF (x)	nm	nm	nm
EV/DACF (x)	0.3	2.5	nm
EV/Reserves (boe 2P)	nm		
EV/Production (m/boe/d)	nm		
All figures in USD unless otherwise stated			



Prepared by GMP Securities Europe LLP Please see important disclosures on the last page of this report.

August 23, 2011	
011-093	

	BUY	
		24.8p
Target		100.0p

- Madagascar Oil Limited (MOIL) is a London listed oil and gas company and holds five contiguous blocks onshore Madagascar covering 29,500 km². The company's assets include two significant heavy oil fields, Tsimiroro (100 % WI and operator) and Bemolanga (Total 60% and Operator; MOIL 40% WI). MOIL also has three exploration blocks in country (100% WI).
- Tsimiroro contains a 965 mmb heavy oil contingent oil in place with best estimate gross unrisked recoverable resource volume of 676 mmb and a 786 mmb prospective oil in place with a recoverable resource volume of 550 mmb, based on a conventional steam flood development as per Netherland, Sewell & Associates (NSAI). GMP's unrisked NPV10 valuation for Tsimiroro at \$100/b flat Brent is \$1,385 mm or 421p/sh for contingent resources.
- The company is led by Laurie Hunter, CEO, who has significant capital markets experience and Mark Weller, COO, who has over 37 years of industry experience including extensive heavy oil experience on Chevron's Kern River steam flood operation.
- There are several upcoming catalysts expected over the next 12-18 months: a resource update from NSAI incorporating evaluation of the 24 wells drilled in 2010 on Tsimiroro, additional drilling in 2011 and commencement of a steam-flood pilot programme.
- We are initiating coverage on Madagascar Oil with a BUY recommendation and a 100p/sh target price based on our sum of the parts valuation.



INVESTMENT SUMMARY

Madagascar Oil Limited (MOIL) is a London listed oil and gas company and holds five contiguous blocks onshore Madagascar covering 29,500 km². The company's assets include two significant heavy oil fields, Tsimiroro (100 % WI and operator) and Bemolanga (Total 60% and Operator; MOIL 40% WI). MOIL also has three exploration blocks in country (100% WI).

The company's primary strategy is to delineate and appraise its large heavy oil accumulation at Tsimiroro, demonstrate the commerciality of the project and advance to a stage where the value can be crystallized with monies returned to shareholders. The company is led by Laurie Hunter, CEO, who has significant capital markets experience and Mark Weller, COO, who has over 39 years of industry experience including extensive heavy oil experience on Chevron's Kern River steam flood operation.

Tsimiroro is a heavy oil deposit that has an 80% chance of success as a conventional steam flood development, for recovery of the 965 mmb contingent and 786 mmb prospective oil in place. The project is estimated to recover 70% of the oil in place resulting in 676 mmb of best estimate gross unrisked contingent resources and 550 mmb of prospective resources as per Netherland, Sewell & Associates (NSAI). GMP's unrisked valuation for Tsimiroro at \$2.05/b is \$2,511 mm for contingent and prospective resources.

Bemolanga is a bitumen deposit with a total estimate of 1,179 mmb contingent and 1,005 mmb prospective oil in place. MOIL 40% share of the net recoverable best estimate amount is 174 mmb of contingent resources and 130 mmb of prospective resources. Following a two-year 160 well coring programme by MOIL and Total (60%, operator), it has been determined that the economics of the project do not meet the required threshold for full development and thus, the pilot extraction plant previously anticipated has been put on hold. The partners have obtained agreement from the Madagascar government to modify the block activity and will now focus on deeper conventional exploration after successfully extending the exploration licence for an additional year.

There are several upcoming catalysts expected over the next 12-18 months: a resource update from NSAI incorporating 2010 drilling data on its Tsimiroro block expected to be released in September 2011, additional drilling in 2011 and commencement of a steam-flood pilot programme.



BACKGROUND AND OVERVIEW

MOIL is an oil and gas E&P company registered in Bermuda with operations solely in Madagascar. In November 2010, MOIL raised \$78.3 mm (£50.5 mm) through a placing of 53.2 mm new ordinary shares and was admitted to the Alternative Investment Market of the London Stock Exchange where it currently trades under the ticker 'MOIL'. The company was founded in 2004 and MOIL retains its interest in the following five onshore blocks: Bemolanga and Tsimiroro, which experienced several prior studies by multiple companies and date back to the early 1900's; as well as blocks Manambolo, Morondava and Manandaza, which were subject to various partially successful exploration attempts in the previous 40 years. Work is underway to further explore and delineate its prospects and identify potential drill locations on Manambolo, Morondava and Manandaza. However, Tsimiroro is the key asset in MOIL's portfolio and is the current focus with the Company's program to further define the significant resources in place and demonstrate commercial recovery with the steam flood pilot.



Exhibit 1: Location of MOIL's current assets

Source: MOIL

In December 2010, the Government of Madagascar indicated its interest in acquiring from MOIL all of its licences, excluding Bemolanga (Blocks 3104, 3105, 3106 and 3107). The request indicated a transaction at less than market value and was viewed as a potential expropriation threat. Trading of its shares on the AIM market were suspended at MOIL's request and in March, 2011, MOIL declared force majeure under the four PSCs for the four blocks concerned in order to safeguard its rights under those agreements. The dispute for Tsimiroro, Block 3104, was resolved in June, 2011, when the Government of Madagascar acknowledged the validity of MOIL's PSC and approved MOIL's 2011-2012 work programme for its Tsimiroro project. The suspension on trading of its shares on the AIM market was lifted on 27 June, 2011. The other three blocks remain unresolved at this time.



Financial History

In October 2006 MOIL raised \$30 mm from existing shareholders. In March 2007 the company secured a development credit facility for US\$85 mm with a major banking institution. Following on from this, in September 2008 MOIL farmed out 60% of the Bemolanga bitumen field to Total for \$100 mm on the basis of 2.5 bnb of recoverable bitumen (1.0 bnb net to MOIL) with an additional payment of \$0.20/b in place for amounts projected as recoverable over 3 bnb. Additionally, as a result of the farm out MOIL was carried for the next \$100 mm of expenditures, or \$40 mm for its 40% stake, expended on the project (recently reduced to \$80 mm of carried expenditures based on the modified Bemolanga work program). This farm out paid off the development credit facility to eliminate the debt outstanding. The Company also raised \$5.5 mm in July 2009 and \$10 mm in August 2010. In November 2010, MOIL IPO'd on the AIM market of the London Stock Exchange through the issuance of 53.2 mm new shares (representing 27.65% of share capital) at 95p/sh raising \$78.3 mm (£50.5 mm) and giving the company a market capitalisation of £182.7 mm on admission (total outstanding share capital of 192.4 mm shares). MOIL currently has a cash balance of around \$54 mm.

	Date	Amount Raised (\$ mm)	Instrument	Share Price (\$/p)	Comment
Ī	Q4/04 - Mar-06	20.3	Equity	Various	-
	Mar-06	60.5	Equity	\$150	-
	Oct-06	30.0	Equity	Various	-
	Mar-07	85.0	Debt	n/a	Repaid in 2008 from proceeds of Bemolance farm out
	Nov-08	7.0	Equity	\$2.00	Rights Offering
	Jul-09	5.5	Equity	\$5.00	Investment by Grafton Resources
	Jul-10	3.0	Bridge Convertible	n/a	Due Dec. 31/10 and convertible at \$15/sh
	Aug-10	10.0	Equity	\$15.00	Blakeney Investors subscribed to 666,667 common shares
	Nov-10	78.3	Equity	95p	IPO'd on AIM market of LSE

Exhibit 2: MOIL's financing history

Source: MOIL

MOIL currently has approximately 205.5 mm fully diluted shares outstanding. This comprises 196.4 mm common shares and 9.1 mm options and warrants. The sub-divisions of these shares are represented in Exhibit 3.

Exhibit 3: Capitalization summary

Capital Structure	<u>mm</u>
Basic Common Shares O/S	192.4
Restricted Stock Issued	4.0
Common Shares O/S	196.4
Shares Issuable Upon:	
Options	7.7
Options Warrants	7.7 1.4

Source: MOIL

Strategy

The strategy of MOIL is simple – the company's aim is to delineate and appraise its large heavy oil accumulation at Tsimiroro, demonstrate the commerciality of the project and advance to a stage where their value can be crystallized with monies returned to shareholders. The strategy



of the company has consistently focused on the economic recovery of the multiple billion barrels of heavy oil from its inception; however the implementation of this strategy has shifted away from Bemolanga, as the Tsimiroro asset increased significantly and the Bemolanga testing yielded low economic performance projections.

Catalysts over the Next 12 Months

There are several upcoming catalysts expected over the next 12-18 months including:

- Commencement of a steam-flood pilot. MOIL is drilling 28 wells 9 producers, 16 injectors, and 3 temperature observation wells on one acre spacing as a pilot to demonstrate the viability of the project and gather data to fine tune the project design. Installation of its steam-flood pilot facility, designed to obtain reservoir performance data and evaluate the potential for a commercial development, is underway and is expected to achieve first production in Q3/2012.
- Potential resource upgrades. With the results from the 2010 Tsimiroro 24 well delineation drilling program and the 430 km Electrical Resistivity Tomography survey we expect MOIL to potentially upgrade their resource estimates via a revised resource assessment to be issued by NSAI; expected in September 2011. Further delineation in 2011 and 2012 and steam flood data from its pilot production programme should also allow the reservoir engineers to adjust their recovery estimates and further define the resource volumes.
- Approval of its 2011-2012 work programmes for its three exploration blocks. Management continues to pursue a Management Committee Meeting with the Ministry of Mines and Hydrocarbons and OMNIS, the regulatory agency of the government of Madagascar, to discuss approval of its 2011-2012 work programmes for its three exploration blocks. The Company is still awaiting a definitive date for the meeting and the resulting decisions to reinitiate the programs for Block 3105, 3106 and 3107.
- Some more minor catalysts include the development of a market for the upgraded heavy oil, project funding and the potential conventional oil and gas exploratory prospects on its other four blocks. There is also a potential for a farm-out of its 100% working interest on the three exploration blocks.



Political Risk in Madagascar

Media mogul and former mayor of Antananarivo (capital of Madagascar), Andry Rajoelina, is the current transitional head of state of Madagascar following a military coup in 2009 which forced the then elected President Marc Ravalomanana to resign. The bloodless military coup was condemned by the international community, in particular, the Southern African Development Community (SADC), a bloc of 15 nations, which announced it would not recognise Rajoelina's presidency. The interim government Haute Autorite de la Transition (HAT), led by Prime Minister Camille Vital, is primarily dominated by members of the Determined Malagasy Youth, a political movement headed by Rajoelina who organized it prior to the Antananarivo mayoral election in 2007. Results released by HAT of a referendum over a new constitution held on 17 November, 2010, showed approval by voters for the state's fourth Constitution with 73% in favour. Under its terms, Rajoelina would remain as president until a new head of state is elected (Rajoelina declared in May, 2010, that he would not be standing although he may choose to do so – an amendment in the new constitution lowered the presidential eligibility age from 40 years to 35 years, potentially allowing 36-year-old Rajoelina to stand).

The government has postponed indefinitely an auction of 225 hydrocarbon exploration blocks in the country's territorial waters in the Indian Ocean due to the political turmoil. The auction of exploration blocks can only take place once cabinet and parliament approves the "petroleum code", according to Joeli Valerien Lalaharisaina, general manager of the Office for National Mining and Strategic Industries. Though the dispute with MOIL is now resolved for the Company's primary asset, we highlight the political risk involved in doing business in such a country. Madagascar is ranked 140th out of 183 countries in the ease of doing business by the World Bank (June 2010) as shown in Exhibit 4. We believe political instability will remain until a resolution in disputes between HAT and the opposition are achieved, and presidential and parliamentary elections (expected late H1/12) are successfully held in a credible manner.



Exhibit 4: Doing Business in Madagascar

Economy	Ease of Doing Business Rank ▲	Starting a Business	Dealing with Construction Permits	Registering Property	Getting Credit	Protecting Investors	Paying Taxes	Trading Across Borders	Enforcing Contracts	Closing a Business
Singapore	1	4	2	15	6	2	4	1	13	2
Hong Kong SAR, China	2	6	1	56	2	3	3	2	2	15
New Zealand	3	1	5	3	2	1	26	28	9	16
United Kingdom	4	17	16	22	2	10	16	15	23	7
United States	5	9	27	12	6	5	62	20	8	14
Denmark	6	27	10	30	15	28	13	5	30	5
Canada	7	3	29	37	32	5	10	41	58	3
Norway	8	33	65	8	46	20	18	9	4	4
Ireland	9	11	38	78	15	5	7	23	37	9
Australia	10	2	63	35	6	59	48	29	16	12
Azerbaijan	54	15	160	10	46	20	103	177	27	88
Tunisia	55	48	106	64	89	74	58	30	78	37
Romania	56	44	84	92	15	44	151	47	54	102
Oman	57	76	70	21	128	93	8	88	104	72
Rwanda	58	9	82	41	32	28	43	159	39	183
Kazakhstan	59	47	147	28	72	44	39	181	36	48
Zambia	76	57	158	83	6	74	37	150	86	97
Bahamas, the	77	66	107	154	72	109	50	45	120	34
Vietnam	78	100	62	43	15	173	124	63	31	124
China	79	151	181	38	65	93	114	50	15	68
Sri Lanka	102	34	169	155	72	74	166	72	137	43
Papua New Guinea	103	81	120	85	89	44	101	96	163	108
Ethiopia	104	89	53	109	128	120	47	157	57	82
Yemen, Rep.	105	57	50	53	152	132	146	123	34	90
West Bank and Gaza	135	173	157	76	168	44	28	111	93	183
Algeria	136	150	113	165	138	74	168	124	127	51
Nigeria	137	110	167	179	89	59	134	146	97	99
Lesotho	138	140	163	146	128	147	64	140	116	69
Tajikistan	139	136	178	87	168	59	165	178	40	64
Madagascar	140	70	110	162	176	59	72	106	153	183
Timor-Leste	174	167	128	183	182	132	20	91	183	183
Congo, Dem. Rep.	175	146	81	118	168	154	163	172	172	155
Guinea-Bissau	176	183	103	175	152	132	133	117	139	183
Congo, Rep.	177	176	83	133	138	154	180	180	158	128
São Tomé and Principe	178	177	113	161	176	154	135	92	179	183
Guinea	179	181	171	166	168	173	173	129	130	123
Eritrea	180	180	183	178	176	109	113	165	48	183
Burundi	181	135	175	115	168	154	141	176	171	183
Central African Republic	182	161	148	141	138	132	182	182	173	183
Chad	183	182	101	137	152	154	179	171	164	183

Source: World Bank (Doing Business, June 2010)



Resources Overview

MOIL holds best estimate oil resources of 1,179 mmb (472 mmb net to MOIL's 40% share) in Bemolanga and 965 mmb of best estimate contingent oil in place in the Tsimiroro steam flood project. Furthermore, in the three exploration blocks in which MOIL holds a 100% working interest, multiple prospects exist with a combined unrisked oil volume of ~4.1 bnb.

Exhibit 5: MOIL's	contingent and	prospective	resources
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	Contin	gent OOIP	(mmb)	Prospe	ctive OOIP	(mmb)
	Low Best High			Low	Best	High
Tsimiroro*	644	965	1,412	0	786	1,843
Bemolanga**	496	1,179	2,001	562	1,005	1,927

Source: MOIL, NSAI and Norwest

Netherland Sewell and Associates and Norwest Corp were responsible for the resource estimates for Tsimiroro and Bemolanga respectively. We believe there is a material possibility the resource estimates will grow over time as additional drilling and exploration results become available for the reserves engineers.

Risks

Beyond the typical risks associated with commodity price and US dollar exchange risks, there are several factors that might affect a company exploring for and/or producing oil and gas in the international arena (outside North America), including:

- Geologic and engineering risks associated with the finding and ultimate recovery of oil and gas reserves in the quantities estimated which in turn determine the company's value.
- Capital and operating cost inflation which can erode the economics of a project, potentially reducing the return to shareholders.
- Current conditions of capital markets may have a material impact on the company's ability to move forward if financing is needed. Ability to access the capital markets can have a material impact on a company's ability to move forward, and/or realise full value through an industry sale process.
- Loss of key employees is a major concern for all E&Ps as the specific skill sets required for individual positions can make the recruiting and retaining of select individuals difficult. In MOIL's case specifically senior management with Steam Flood Expertise.
- Changes to existing oil and gas fiscal regimes could defer foreign investment, increase government take and reduce the company's net asset value attributable to a specific project.
- Infrastructure risk and access to infrastructure can be a potential risk. This can lead to delays in the sale of energy products to international and local markets and can increase operating costs (such as when trucking is used, for example).
- By far the biggest risk in our view is government intervention or expropriation of some or all of the assets. Geopolitical and security risks are an issue in many countries and can disrupt operations and activities for a considerable length of time or, in extreme situations, result in the loss of property and assets.



 While in most instances international oil prices are closely correlated, ability to access international markets may impact crude oil realizations in some jurisdictions.

Overview of Management

Recognizing the need for a strong management team, the board of MOIL has assembled a management team with extensive experience and specific knowledge of the steam flood process and heavy oil accumulations.

J. Laurie Hunter, Chairman and Chief Executive Officer

Mr. Hunter became CEO in 2009. Having previously founded Hunter Capital, which focused on investing in early stage companies and assisting them to raise finance and generate growth, he served on the board of directors of several North American based E&P companies and is currently an independent director of Living Cell Technology.

Mark Weller, Chief Operating Officer

Mark Weller became COO in 2009 after joining the Company in 2008. He has over 39 years of oil industry experience with an extensive background in domestic and international oil and gas development at Chevron, Texaco and Getty Oil. Additionally he has onshore and offshore drilling and production operations experience, including over 15 years of direct involvement with the design, initiation and operation of heavy oil steam flood projects in California.

Seth Fagelman, Chief Financial Officer

Seth Fagelman has served as the Company's CFO since 2009. He has significant financial and business experience, having previously held CFO and senior management positions for CyrusOne, Prime Cable and GW Communications. He currently serves as a strategic adviser and board member to several private companies.

Andrew James Morris, Non-Executive Director

Andrew Morris is the founder and MD of Persistency Capital LLC. Mr. Morris currently sits on the board of a number of private companies, ranging from early stage resource companies to emerging technology companies.

Colin Orr-Ewing, Non-Executive Director

Colin Orr-Ewing is a natural resources consultant for Blakeney Management, specialising in advising on investment in Africa and the Middle East, with whom he has been associated since 1994. He has over 40 years of oil industry experience and has served on the boards of several resource companies.

Ian Barby, Non-Executive Director

Ian Barby practiced as a Barrister before joining Warburg Investment Management in 1985, subsequently becoming a vice chairman of Mercury Asset Management and latterly, until 2003, a managing director of Merrill Lynch Investment Managers.

Jonathan van der Welle, Non-Executive Director

Jonathan van der Welle was a director and CFO of Stratic Energy until November 2010. Prior to joining Stratic Energy he was MD and Head of Oil & Gas, Sector Corporate Finance at the Royal Bank of Scotland. Previously, he was a director and CFO of First Calgary Petroleum, and before that was Finance Director of Premier Oil.



Alvaro Kempowsky, General Manager

Alvaro Kempowsky joined MOIL in 2007, after leaving Chevron. He spent much of his career as a project manager with Texaco operations in Columbia and Angola including responsibility of operations and construction for heavy oil and natural gas developments.

Shareholder Ownership Breakdown

The top six shareholders according to Bloomberg own ~13% of the basic shares outstanding as at 04 August, 2011. The largest shareholder is MSD Capital LP with ~7.5% of the shares outstanding.

Exhibit 6: Major shareholder ownership

Top Shareholders	Amt Held (mm)	%
Touradji Group	29.36	14.9%
Persistency	22.79	11.6%
MSD	18.80	9.6%
The John Paul DeJoria Family Trust	12.83	6.5%
Blakeney Group	11.99	6.1%
Plainfield Special Situations Master Fund Limite	e 11.68	5.9%
RAB Special Situations (Master) Fund Limited	8.70	4.4%
Carmignac	8.65	4.4%
Norges	6.65	3.4%
Henderson	6.65	3.4%

Source: MOIL



TSIMIRORO FIELD

The Tsimiroro field, located in Production Sharing Contract (PSC) 3104, is ~125 km from the west coast of Madagascar and ~250 km from Antananarivo, the capital city of Madagascar. MOIL has a 100% operated working interest in the PSC which covers an area of 6,670 sq km. Over 50 wells have been drilled on the field by prior operators and 68 wells have been drilled by MOIL since 2007. Approximately 32 structures have been mapped and identified and over half of those have been determined to contain oil resources. Multiple geological and reserve studies on the block classify total OOIP as ~5.5 bnb.





Source: MOIL

History

Exhibit 7 shows the location of the primary structures identified by NSAI in 2009 (areas supporting a high chance of producible oil) and secondary structures identified by Weinman in the 2007 study (areas demonstrating a strong indication of oil). Over 100 wells have been drilled on Block 3104. The first well on Tsimiroro was spudded in 1909 and flowed heavy (13 °API) oil between an interval of 40-300 m. MOIL drilled 21 wells prior to Weinman Geoscience completing a detailed field analysis of the Tsimiroro area in 2007.

In 2008, 23 wells were drilled on the basis of the structures identified in the 2007 Weinman report. Six wells in the existing TO-1 structure confirmed oil saturation and reservoir boundaries. While 15 wells on 14 separate structures discovered favorable oil accumulations and a further two wells in a single structure encountered low oil saturations. Also in 2008, MOIL constructed a production test facility in the TO-1 field area, to improve production rates via steam injection. A cyclic steam stimulation (CSS) pilot confirmed that Tsimiroro had the reservoir characteristics suitable for a successful steam flood development.



The CSS pilot established steam injectivity and thermal oil recovery at a favorable Steam-Oil-Ratio (SOR) of 4.2 barrels of steam for every barrel of oil. After steaming, two of the three wells in the pilot had peak rates of 132 b/d and 200 b/d.

An additional 24 wells were drilled in 2010, with 18 of those wells finding oil resources. Three of the wells were drilled in faulted horizons and three of the wells were wet. The Company also utilized an Electrical Resistivity Tomography (ERT) survey in 2010 to further delineate reservoir boundaries. Data from the 24 wells and 430 km of ERT are currently being analyzed by NSAI to reassess the resources volumes in Tsimiroro

Geology

Tsimiroro is a complex supergiant oil accumulation. Initial geological studies and exploration efforts resulted in wells on Tsimiroro being focused in a limited region, over the Tsimiroro horst block. However, Weinman's re-evaluation of the Tsimiroro area concluded that later compressional deformation has likely caused remigration of oil into newly created anticlines. The result being that structural traps exist over both the Tsimiroro horst (the main field) and over a larger area to the east and west.

There are three play types existing in the block: primary, Triassic Amboloando Sand; secondary, Triassic Isalo-1 Sand; and tertiary, Middle Sakamena Sands. The Middle Sakamena Sands, located in the south-eastern portion of the block, are Permian-aged and believed to contain lighter oil than the Amboloando and Isalo-1 sands.

The source rocks for the prospects are believed to be the Sakamena lacustrine shales. The reservoir presence and quality are still in the process of being defined. However, well data suggests widespread deposition from the south-east for the Amboloando with adequate thickness and suitable porosity exists in the reservoirs. Regional dip structure across Tsimiroro is westerly, with the sand outcropping in the eastern part of the block. The traps in the Tsimiroro region are classified as structural.

Resources

Given the heavy nature of the oil in place at Tsimiroro thermal recovery is necessary to achieve significant production levels. After careful consideration, testing, and third party input, MOIL has determined that the Tsimiroro project is best suited for steam flood technology. Steam flood has been around for nearly 40 years, is one of the most developed thermal technologies available and has been successfully applied to large projects with similar characteristics such as the Kern River Field in California.

The field has already undergone successful thermal cyclic stimulation testing and a steam flood pilot is being developed with anticipated start up late in 2012. MOIL hopes that future work will be able to better define the oil properties (mobility/heat stimulus/°API/viscosity), the reservoir properties (porosity/permeability/areal extent/oil saturation) and the geometry of the structures present.

Based on typical steam flood extraction techniques NSAI has applied a recovery factor of 70% to the current mid-case 965 mmb of contingent unrisked original oil in place. This gives a result of an estimated ultimate recovery (EUR) of 676 mm at Tsimiroro (Exhibit 8). With best estimate contingent resources of 676 mmb today at Tsimiroro, MOIL estimates that, under a steam flood scenario, Tsimiroro will be able to achieve a sustained production rate of over 80 mb/d for nearly 20 years.



Based on the examination of the 430 km of Electrical Resistivity Tomography (ERT) survey and with the results of the 24 delineation wells, additional follow-up drilling locations have been identified for 2011 and 2102, and ERT will be studied further for application in subsequent years.

MOIL is hoping this project will test the viability of using conventional pattern vertical multi-layer steam flood in the field and as a result de-risk the decision to proceed with a full development of Tsimiroro.

Exhibit 8: Tsimiroro unrisked contingent resources.

	OOIP (mmb)	RF (%)	Technical EUR (mmb)
Low estimate	644	60	386
Best estimate	965	70	676
High estimate	1412	80	1130

Source: NSAI

Exhibit 9: Tsimiroro unrisked prospective resources.

	OOIP (mmb)	RF (%)	Technical EUR (mmb)
Low estimate	-	-	-
Best estimate	786	70	550
High estimate	1843	80	1474

Source: NSAI

Development plans

MOIL's remaining pilot capital cost is estimated at ~\$30 mm with 18 months cost of operations at ~\$12 mm (total cost of ~42 mm), ahead of a commercial decision to proceed with full scale development at Tsimiroro. Capital will be used to define and characterize the Tsimiroro discovery and to move it toward full development through definition and appraisal of the reservoir. There is a material probability that the project will not proceed without an acceptable outcome from the steam flood pilot.

If the development proceeds, full field production is anticipated to commence in 2016 to 2017. Major facilities will be necessary in the field including: the central processing facility, steam generation, a visbreaker upgrader, syncrude pumping stations, power generation and a distribution grid. A 125 km pipeline will link the field to the shore, where facility installations will be comprised of a tank farm, export facility, camp, upgraded port, tugboats, a 30 km syncrude terminal-to-offshore pipeline and a 30 km diesel offshore-to-terminal pipeline. Tsimiroro will be developed with one vertical producer and one vertical injection well in each of the two acre patterns planned. Steam-flood wells developing prospective areas will be drilled after those developing contingent areas. Then after the drilling of the main prospect area, the scope for development drilling will spread out further afield in the region to the other prospect areas.







MOIL has started the construction of a pilot extraction plant, which is expected to begin operation in Q3 2012. The field is expected to come onstream in 2016 and to reach a gross peak production of up to 100,000 boe/d gross. The development expenditure for 2011-2012 is split as follows:

- Step-out drilling (~\$6 mm): drill up to 20 wells in outlying areas to test prospective structures, follow up 2010 single well structures and areas with no prior wells.
- Production pilot (~\$35 mm in total, ~\$17mm in 2011): install nine pattern steam flood pilot over two years, with the aim of producing up to 1,000 b/d, and develop the sales outlet.

Exhibit 11: 1	Tsimiroro	projected	capital ı	requirement	s for	pilot
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Total Capital Requirement	\$ mm
Engineering	0.7
Production well cost	5.0
Injection well cost	2.5
Oil treating	3.8
Water treatment	3.6
Power and roads	3.5
Well lead lines	4.4
Camp infrastructure	0.5
Miscellaneous	1.0
Transport Infrastructure	10.0
Total (\$ mm)	35.0

Source: MOIL

The Steam Flood Process

Due to the very high viscosity of heavy oil, steam flooding is a commonly implemented enhanced recovery process around the world. Recoveries of 60-80% of OOIP are achievable in successful mature steam-floods. Injected steam forms a steam chamber in the reservoir that heats the oil in-situ to 300-400°F. This technique decreases the viscosity to ~10-20 cp and results in increased oil mobility. The produced oil and condensed water from the steam are delivered to the Central Processing Facility (CPF), where the water can be recycled through steam generators. The process involves vertical wells, one injection and one to four production wells, organized in a five-spot grid pattern. The patterns vary between one to five acres and the injector well is located at the centre of the pattern with the producers found at each corner, shown in cross-section in Exhibit 12.

Exhibit 12: Steam flood schematic



Source: MOIL

Other techniques which are used to improve recovery from heavy oil fields include cyclic steam stimulation (CSS) and steam assisted gravity drainage (SAGD). However, steam flooding at Tsimiroro can increase recovery four times over CSS and steam injectors can be operated continuously, whilst CSS operations are more complex. Vertical steam-flood wells can cope with Tsimiroro's multiple isolated zones and fault orientations. Additionally heat loss from one zone feeds another and all intervals are produced concurrently, giving higher energy efficiency than CSS or SAGD as well as being more economically attractive.

The Kern River project provides a reference and analogy for the planned steam-flood project at Tsimiroro. The reservoir and fluid properties and planned development are similar to Kern River but not totally analogous as shown in Exhibit 13. The planned regular small spacing pattern of vertical wells at Tsimiroro closely resembles that at Kern River. The shallower depth at Tsimiroro may cause issues with steam chamber integrity. The lower porosity value is offset by a greater oil saturation value in comparison to Kern River. Additionally the lower, yet acceptable permeability at Tsimiroro can be offset by the thicker oil zone, which is beneficial for thermal efficiency.

Exhibit 13: Steam flood schematic	(refer to Appendix for extended tal	ole)
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	Kern River	Tsimiroro
Formation depth below surface (ft)	700-770	199-250
Porosity (%)	35%	24%-26%
Initial oil saturation (%)	50%	53%-57%
Oil content (b/acre-ft)	1,400	1,000-1,400
Net pay <i>(ft)</i>	70	100-150
Permeability (md)	7,600	500

Source: MOIL

Risks

There are four main risks which exist on Tsimiroro:

• **Geology** – risking of prospective resources addresses the probability of success for the discovery of petroleum. Risk elements include: trap and seal characteristics, reservoir presence and quality, source rock capacity, quality, and



maturity. Further, potential steam breakthrough to surface and reservoir integrity are the key geological issues.

- Technology reservoir performance and recovery parameters must be verified with a steam flood pilot. As a result of these tests recoverable oil volumes need to be determined.
- Market sale locations for the Tsimiroro heavy upgraded crude must be analyzed to align more closely with the potential development time frame. In addition, further export choices for blending or upgrading the crude need to be assessed.
- **Execution** analysis of market value and technology choice must be determined to project if the economics and projection of value will support development.

BEMOLANGA

Bemolanga is a large ultra heavy oil field (10-13° API), located in the same region of northwestern Madagascar as Tsimiroro, ~300 km from Antananarivo and ~170km from the port of Maintirano (Exhibit 14). The existence of oil seeps in the outcrops of Bemolanga tar sands have been recorded since the mid-1800's. The field is situated in Block 3102, which covers an area of 5,463 sq km, of which 320 sq km has been explored by drilling in various exploration campaigns since 1950. Total E&P operates the production sharing contract with a working interest of 60%, while MOIL retains the remaining 40% working interest. The PSA has an exploration period of eight years, followed by a 25 year exploitation period and then five year extensions for up to a further 25 years.





Source: Norwest



History

The original discovery date of the Bemolanga deposit is not fully known, due to the number of oil seeps could that can be readily found. However, the 1900s saw systematic exploration of the region, including the Masiakampy 1 well in 1924 and Bemolanga 1 well in 1928, both of which resulted in oil shows. After significant progress in bitumen extraction processes in 1978, OMNIS took over at Bemolanga and started an exploration campaign via core sampling. After the analyses, detailed mine planning and processing studies were completed. The Block area is 6,931 sq km.

In 2005, OMNIS relinquished the rights to develop the deposit to MOIL. In Q2/07 after reserves studies by DeGolyer and MacNaughton as well as several reports by Norwest, MOIL commenced with a drilling program at Bemolanga. In total, nine holes were drilled with the objective of confirming the results seen in previous studies.

JV with Total

In 2008, Total farmed in to 60% of Bemolanga on the basis of 2.5 bnb of recoverable oil (1.0 bnb net to MOIL with an additional payment of \$0.20/b for amounts projected recoverable over 3 bnb. As a result of the agreement, MOIL was carried for the next \$100 mm of gross expenditures on the project. The JV has agreed to reduce the carry amount to \$80 mm (\$70 mm has been spent to date leaving a \$10 mm carry (\$4mm net to MOIL) for work in based on the modification to the PSC work program for 2011 and 2012 that was agreed to in June 2011.

During 2010, 86 core wells were completed in Bemolanga's drilling programme. Following its primary investigation of bitumen deposits, the JV has deemed Bemolanga to be uncommercial at the current oil price and has made the decision to put the \$100 mm pilot production programme on hold. The Government of Madagascar agreed to the June 2011 proposal for a one year extension to the current block exploration phase and a shift to its work programme to focus on pursuit of conventional hydrocarbon potential of deeper basement plays on the Bemolanga block. The initial step for the new program will be to run ~8,000 km of Airborne Gravity Gradiometer survey over the block, to be followed by seismic acquisition in 2012 over potential structures of interest.

Geology

There are two significant structural features that dominate the Bemolanga area. The distribution of the bitumen appears to have been controlled by the presence of a gentle dome. Secondly there are two episodes of faulting, the first of which occurred during the pre-Isalo deposition and hence only affected the Sakamena beds. The later episode in the Late Cretaceous, affected all the strata currently exposed at Bemolanga.

The reservoir trap is a large anticline with a vertical relief of ~80 m. Bemolanga sandstones have porosities of 22%-33% and permeabilities of 450-1,000 mD. The Bitumen API gravity values range between 10°-13°. Overall the crude quality exceeds that of the Athabasca bitumen and the Bemolanga overburden is considerably shallower than that in Athabasca.



	Bemolanga	Athabasca
Av. bitumen saturation (wt%)	5.54	11.5
Bitumen °API gravity	10-13	8.5
Strip ratio	0.3	1.5
Sulfur content (wt%)	0.7	4.5
Av. temperature (°C)	14.6	-1.6

Exhibit 15: Bemolanga/Athabasca Reservoir Properties (refer to Appendix for full table)

Source: Norwest

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The Bemolanga bitumen is found in the sandstone units of the Isalo II Formation which is ~30-80 m thick and, to a lesser extent, the upper sandstone beds of the older, Isalo I Formation. Only a small percentage of the total resources at Bemolanga are found within Isalo I.

Similarly to Tsimiroro, the oil at Bemolanga is generated in lacustrine shales of the Middle Sakamena formation in the late Cretaceous and early Tertiary. The reservoir has favorable characteristics with sand units ranging from 9-54 m thickness. One of the major factors in the economic analysis has been the low average grade on an ore interval basis of 5.5 wt% bitumen, which is approximately half the concentration found in Athabasca.

Resources

The following exhibits provide the summary of Bemolanga resources:

Exhibit 16: Summary of Bemolanga Recoverable Resources

	Contir	ngent	Prosp	ective	
	Gross resources Net resources		Gross resources	Net resources	
	(mm	nb)	(mmb)		
Low estimate	197	79	176	70	
Best estimate	435	174	325	130	
High estimate	678	271	660	264	

Source: Norwest

Exhibit 17: Bemolanga PIIP suitable for mining

	Discovered PIIP		Undiscov		
	Gross resources Net resources Gross resource		Gross resources	Net resources	TOTAL (Gross)
		(mmb, with	(mmb)		
Low estimate	496	198	562	225	1,481
Best estimate	1,179	472	1,005	402	3,058
High estimate	2,001	800	1,927	771	5,499

Source: Norwest

There is no certainty that the Bemolanga undiscovered resources indicated in Exhibit 17 will be discovered. In addition, if discovered, there is no certainty that it will be commercially viable to produce any portion of the resources. Bitumen reserves at Bemolanga are deposited over four zones of varying thicknesses and covers an area of ~500 sq km (Exhibit 18). The CPR from Norwest only addresses the resource estimates for ~320 sq km of the concession; therefore additional areas with the possibility of further resource are not included.

There is no estimate currently included for conventional oil or gas potential on the block. In addition, there are numerous indications that the heavy oil accumulation outside of the mine area exists. This resource would be quite similar to the Tsimiroro Amboloando deposits and, like Tsimiroro, may be a candidate for steam flood recovery. Pending results of the Tsimiroro steam flood pilot, this possibility will require further assessment.



Exhibit 18: Bemolanga bitumen deposit map



Source: MOIL

Risks

The risks associated with recovery of contingent resources at Bemolanga include:

- Drill results showing low and uneconomic thickness of the ore;
- Drill results showing low and uneconomic average bitumen grade at any future drill site than has been predicted;
- Efficiency oversights in the processing conditions for the ore; and
- Lower than forecast oil prices for the duration of operation.



EXPLORATION BLOCKS

MOIL holds a 100% interest in three exploration blocks south of Tsimiroro and Bemolanga. In 2007, MOIL contracted Weinman to fully review the geology and the geophysics of the three blocks and a 200 km seismic program was completed in 2009 which identified nine prospect leads in seven areas. In 2010, results from its GORE survey demonstrated potential on three to five of the leads.



Exhibit 19: Gore survey results from exploration blocks.



Manambolo

At 3,995 sq km, the Manambolo PSC (3105) located along the central western coast of Madagascar in the Morondava Basin, is the smallest of the three blocks. In 2009, stratigraphic traps in three lower Cretaceous sands were identified. Two prospective areas (shown in exhibit 20) have been identified with estimated size of 16,000 acres and 22,000 acres. To date six exploration wells have been drilled, including the significant Manambolo West #1 well which was drilled in 1987 and tested 15.6 mmcf/d. The well was abandoned as non-commercial partially due to a lack of infrastructure. Two areas of 160 sq km each were sampled above the two leads with initial results from the Gore survey indicating no hydrocarbons in the northern test. The southern lead had several areas of elevated hydrocarbon signature, but lacks seismic definition to fully determine the structural continuity. In addition, the orientation of the Gore data suggests that the target is a channel sand as opposed to a structural high.





Exhibit 20: Location of prospective areas on 3105 Manambolo.

Source: MOIL

Well	Year drilled	Operator	TD (m)	Result
Serinam	1971	Conoco	3,658	Live oil and minor gas shows
Serinam East-1	1974	Conoco	2,970	Minor gas shows
Manambolo-1	1985	Amoco	4,262	Heavy oil (~10 °API) - minor
				gas shows
Manambolo West-1	1987	OMNIS/PCIAC	2,600	Flowed 15.6 mmcf/d, non-
				commercial gas discovery
Manambolo East-1	1990	Amoco	1,676	Minor gas shows
Manambolo West-2	1993	OMNIS	1,890	No shows

Source: MOIL

Morondava

Block 3106 Morondava, located immediately south of Manambolo in the Morondava Basin, covers 6,825 sq km. The block has the largest potential structure of the three exploration blocks and yet is relatively unexplored. Three structural closures have been mapped on the acreage: namely Saronanala East "A" (~8,700 acres); Saronanala East "B" (~8,300 acres); and Namakia East Central Closure (~14,000 acres). Exploration potential was projected in the Mid-Jurassic Dogger carbonates (Bemaraha) and sandstones (Isalo II). Gore results from the northern lead showed very little hydrocarbon activity. The southerly 160 sq km area, however, indicated at least two areas of elevated hydrocarbon in the Namakia structural area. The activity does not match the structural high in the Bemaraha, however, there may be a correlation to Cretaceous channel sands in a slightly shallower horizon. Additional seismic will be required to further define the channel sand orientation and tie the Gore readings to a subsurface area.





Exhibit 22: Location of prospective areas on 3106 Morondava.

Source: MOIL

Exhibit 23: Previous 3106 Morondava exploration wells.

	Well	Year drilled	Operator	TD (m)	Result
	Namakia-1	1984	Amoco	4,481	Live oil and trace gas shows
	Saronanala-1	1985	Amoco	2,385	No shows
-					

Source: MOIL

Manandaza

The 3107 Manandaza block is situated east of Manambolo and Morondava, and covers an area of 6,580 sq km. The existing seismic work is focused on the northern portion of the block, in the region where the two previous wells were drilled by Shell, during the early 1990s. One structural closure, Manandaza and three leads (L1, L2 and L3) have been identified in the Lower Sakamena fluvial sandstone reservoir interval covering areas of 14,000 acres, 2,500 acres, 3,000 acres and 3,000 acres, respectively. The reservoir encountered in Manandaza is of very poor quality and the extent of hydrocarbon accumulation is uncertain, due to faulting at the wellbore. All three areas sampled with GORE showed good signs of elevated hydrocarbon. Additional seismic will be required to further define the potential reservoir accumulation.





Exhibit 24: Location of prospective areas on 3107 Manandaza.

Source: MOIL

Exhibit 25: Previous 3107 Manandaza exploration wells

Well	Year drilled	Operator	TD (m)	Result
Manandaza-1	1991	Shell	2,508	Recovered 10 b of 41 °API gravity oil,
Manandaza South-1	1993	Shell	2,223	non-commercial light oil discovery No shows

Source: MOIL

Catalysts and Go Forward Programme

Work on its exploration blocks was halted during H1/2011 as a result of MOIL's dispute with the Government of Madagascar. A meeting with OMNIS is expected to take place in the coming months to negotiate an extension on these blocks to account for the 2011 delay and for the additional time required to conduct the assessment of prospective drilling locations. MOIL plans to focus future exploration efforts on Block 3105 around the Cretaceous sequences, where the well data has proved reservoir quality sandstones in the past. On Block 3106, focus will be on areas where good structural closures could be mapped in conjunction with deep seated faults that could serve as hydrocarbon migration pathways. Whereas, the poor reservoir quality and the fault cut in the well on Block 3107 questions the size of the accumulation seen in the Manandaza-1 well, even with the existence of a robust structural closure. There are also significant risks associated with Block 3106 and the three prospects are not considered "drillable" at this time, due to the fact that there is no convincing evidence that significant hydrocarbons have been generated in the structural area. Going forward, MOIL has plans a combination of airborne gravimetric surveys (Full Tensor Gravity) and seismic to be acquired to define further the drilling prospects.



VALUATION

MOIL has had two independent engineering and consulting firms conduct 'Competent Person Reports' (CPRs) (competent persons - professionally qualified and recognised independent third party who provides resource estimation, assessment and evaluation), which provide resource assessments and valuations for the company's two more advanced properties in Madagascar. NSAI has provided an evaluation of the contingent and prospective resources as of June 30th, 2010 for MOIL's Tsimiroro PSC (Block 3104). Norwest has provided a gross and net (reflecting MOIL's 40% WI) evaluation of the discovered and undiscovered bitumen in place, and the contingent and prospective resources as of September 30, 2010 for MOIL's Bemolanga bitumen deposit (Block 3102).

NSAI and Norwest have provided a wide range of potential valuations based on different oil price assumptions, low, best and high case resource estimates and a comprehensive set of cost assumptions. The valuations are in essence a snapshot of a dynamic process whereby value changes over time depending on cumulative capital expenditures, production, cash flow and accretion of discount in addition to the economic factors mentioned above. Exhibit 26 shows the valuation for Tsimiroro by their various categories and estimated values using NSAI's resource estimates. We note that the costing and engineering design data is particularly detailed whereas the resource data is evolving as more work is conducted.

NSAI Tsimiroro	Valuations - Unrisk	ked NPV10		NSAI Tsimiroro	Valuations - Risked	NPV10		
	Contingent Resources				Continge	Contingent Resources (Risked at 68%)**		
	Low Estimate	Best Estimate	High Estimate		Low Estimate	Best Estimate	High Estimate	
Oil Price	(\$mm)	(\$mm)	(\$mm)	Oil Price	(\$mm)	(\$mm)	(\$mm)	
\$50/b Brent	-1,674.1	-447.9	630.4	\$50/b Brent	-1,156.5	-322.6	410.7	
\$70/b Brent	-685.4	1,102.1	3,260.2	\$70/b Brent	-484.1	731.4	2,198.9	
\$90/b Brent	50.6	2,603.1	5,830.6	\$90/b Brent	16.4	1,752.1	3,946.8	
	P	rospective Resource	es		Prospectiv	e Resources (Risked	at 30.6%)**	
	Low Estimate	Best Estimate	High Estimate		Low Estimate	Best Estimate	High Estimate	
Oil Price	(\$mm)	(\$mm)	(\$mm)	Oil Price	(\$mm)	(\$mm)	(\$mm)	
\$50/b Brent	0.0	81.7	774.8	\$50/b Brent	0.0	26.7	252.9	
\$70/b Brent	0.0	899.3	2,538.4	\$70/b Brent	0.0	293.5	828.5	
\$90/b Brent	0.0	1,718.7	4,284.8	\$90/b Brent	0.0	561.0	1,398.6	
	Contingent Res	ources and Prospec	tive Resources*		Risked Contingent	Resources and Pros	pective Resources*	
	Low Estimate	Best Estimate	High Estimate		Low Estimate	Best Estimate	High Estimate	
Oil Price	(\$mm)	(\$mm)	(\$mm)	Oil Price	(\$mm)	(\$mm)	(\$mm)	
\$50/b Brent	-1,674.1	-366.2	1,405.2	\$50/b Brent	-1,156.5	-295.9	663.6	
\$70/b Brent	-685.4	2,001.4	5,798.6	\$70/b Brent	-484.1	1,024.9	3,027.4	
\$90/b Brent	50.6	4,321.8	10,115.4	\$90/b Brent	16.4	2,313.1	5,345.4	
*Contingent and Pro	spective resources are su	ummed together		*Contingent and Pro	ospective resources are sum	med together		
				**Contingent Resou	rces risked at 68% and Pros	pective at 30.6% as per the	e CPR	

Exhibit 26: Tsimiroro CPR valuations

Source: NSAI

NSAI has come up with a method of risking its contingent and prospective resource estimates based on the three principal risks (geologic, steam flood and commercial) it believes applies to achieving commercial recovery of resources at Tsimiroro. For the contingent resources NSAI believes there is an 80% probability of success for the steam flood pilot and an 85% probability of commercial success which gives a risking of 68% (0.80 x 0.85) for the probability of development. For prospective resources NSAI believes that there is also geological risk and the probability of geological success is 45% x 68% which gives an overall risking of 30.6%.



GMP Securities has modeled MOIL's Tsimiroro assets using the CPR estimates of contingent and prospective resources and our current economic assumptions to derive a view of the potential of the asset base. Exhibit 27 shows the valuation of the assets using GMP's price deck assumptions.

	Gross	Net Risked		
	Resource	Resources	Risked NAV	Unrisked NAV
GMP Tsimiroro Valuation	(mmboe)	(mmboe)	(US\$ mm)	(US\$ mm)
Contingent Resources	676	135	277	1,385
Prospective Resources	550	28	47	1,127

Exhibit 27: GMP Tsimiroro valuation – risked and unrisked NPV10

Source: GMP Securities Europe

Reserves Engineers are by nature conservative and typically only take into consideration the resources that can be calculated from the existing data. They aren't prepared to give resource numbers or any upside beyond which they can calculate from the wells and seismic available. Therefore, we believe it is highly likely that the resource estimates will grow over time as more data on reservoir performance and from additional drilling becomes available. We expect a resource upgrade from NSAI for Tsimiroro to be available in September, incorporating the added data from 24 new wells drilled over the last 12 months.

There are some significant differences in our modeling versus the competent persons which results in a lower valuation for the Tsimiroro Field:

- We take the view that with an upgrader at Tsimiroro, MOIL will get better pricing than a 29% discount to Brent – while we concede there is no market currently for synthetic crude produced at Tsimiroro, one should rapidly evolve given the number of refineries looking for long term supplies of feedstock and the narrow differentials that currently exist between synthetic blends and Brent oil. We have set our realized price to our long term Brent discounted at 25%.
- We have applied a particularly heavy risking to Tsimiroro as a result of the dispute with the Government of Madagascar during H1/11. We highlight the considerable political risk of operating in developing countries such as Madagascar and therefore we have applied a 20% chance of success to the project. Our 20% risking consists of an 80% geological chance of success multiplied by a 25% political risk (80% x 25%). While it will likely prove to be excessively punitive we feel investors will heavily discount the valuations given the political risk and potential uncertainty experienced in the past.
- We have modeled a 40 year project life versus the 30 year project life modeled by NSAI. Projects of this magnitude are typically built for a 10 year plateau production period which corresponds with NSAI's assumptions. We take the view that by restricting capital spending in the latter half of the Tsimiroro field life will lead to higher declines, but will also reduce the overall capex needed making the project less sensitive to price realizations, OPEX, etc.

Sensitivities - Tsimiroro

A project of this magnitude is obviously very susceptible to discount rates and oil prices which is why the CPR addresses this separately. We have looked at some of the other sensitivities



based around our \$100/b flat long term Brent forecast prices in Exhibit 28 below. All sensitivities are shown on an unrisked basis for the 676 mmb contingent resource case.

Exhibit 28: Tsimiroro sensitivities

Sensitivities		Low	High
Capex	+/- \$1/b	18%	-11%
Opex	+/- \$1/b	6%	-6%
Discount Rate	+/- 2%	59%	-42%
Oil Price	+/- \$10/b	-35%	46%
Reserves	+/- 50 mmb	-9%	9%

Source: GMP Securities Europe

Bemolanga

Norwest has provided its valuations of the Bemolanga Field based on contingent and prospective resources at \$50, \$70 and \$90/b in its competent persons report. Given the relatively low volumes of resources to high amounts of capital spent the valuations are for the most part negative.

Exhibit 29: Norwest CPR Valuation of Bemolanga

Norwest Bemolanga Valuations -	Unrisked
70% Recovery Factor	
	NPV 10
Oil Price	(\$mm)
\$50/b Brent	-4,793.0
\$70/b Brent	-3,329.0
\$90/b Brent	-1,882.0
Norwest Bemolanga Valuations - (in Constant Dollar NPV10 terms) 90% Recovery Factor	Unrisked
Norwest Bemolanga Valuations - (in Constant Dollar NPV10 terms) 90% Recovery Factor	Unrisked NPV 10
Norwest Bemolanga Valuations - (in Constant Dollar NPV10 terms) 90% Recovery Factor Oil Price	Unrisked NPV 10 (\$mm)
Norwest Bemolanga Valuations - (in Constant Dollar NPV10 terms) 90% Recovery Factor Oil Price \$50/b Brent	Unrisked NPV 10 (\$mm) -3,410.0
Norwest Bemolanga Valuations - (in Constant Dollar NPV10 terms) 90% Recovery Factor Oil Price \$50/b Brent \$70/b Brent	Unrisked NPV 10 (\$mm) -3,410.0 -1,196.0

Source: Norwest

Following MOIL and Total's decision to postpone its \$100 mm bitumen extraction pilot project at Bemolanga, we have assigned a zero chance of success for the mining project resulting in no value in our EMV/NAV valuation for the project. No estimate likewise has been made for exploration or potential steam flood on Bemolanga.

Market Valuation Metrics

Exhibit 30 compares the 20 most relevant and comparable bitumen and oil sands transactions over the last five years that have occurred in the Canadian Oil Sands. All transactions are in the public domain and relatively material (i.e. over US\$50 mm in value). None of the transactions involve producing assets and are typically several years from first production at a minimum. All of the transactions have contingent resources or a recoverable resources estimate.



August 23, 2011

Exhibit 30: Bitumen oil sands transactions

					C.	loct Bitumon	Oil Sande 7	Transactions					
					20	Initial Initial		Iansacuon					
Acquirer	Target	Announce date	I ransaction value (US\$ mm)	Type	2P reserves (mmboe)	3P reserves (mmboe)	Contingent Resource (mmboe)	Best Est. Rec Res. (mmboe)	EV/2P (US\$boe)	EV/3P (US\$/boe)	EV/ Contingent (US\$/boe)	EVI Recov. Res. (US\$boe)	Asset description
Undisclosed	Enerplus Resources Fund	21-Sep-10	\$393.1	In Situ	0.0	0.0	492.0	0.0	na	na	\$0.80	na	100% interest in undeveloped SAGD Kirby oil sands lease
Athabasca Oil Sands Corp	Excelsior Energy Limited	13-Sep-10	\$80.7	In Situ	0.0	0.0	157.6	0.0	na	na	\$0.51	na	Hangingstone and West Surmont areas
Total SA	UTS Energy Corp	7-Jul-10	\$1,266.9	Mining	0.0	0.0	671.2	0.0	na	na	\$1.89	na	20% stake in undeveloped Fort Hills oil sands mining project; Spin-off of Equinox & Frontier oil sands mining projects
Undisclosed	Storm Exploration Inc	10-Jun-10	\$51.5	In Situ	0.0	0.0	110.9	0.0	na	na	\$0.46	na	100% working interest in Surmont oil sand leases
China Investment Corporation Ltd	Penn West Energy Trust	13-May-10	\$798.8	In Situ	0.0	0.0	908.8	0.0	na	na	\$0.88	na	45% state of North Seal Project
Devon Energy Corporation	BP plc	11-Mar-10	\$650.0	In Situ	0.0	0.0	0.0	625.0	na	na	na	\$1.04	50% interest in undeveloped Kirby oil sands leases
PetroChina Company Limited	Athabasca Oil Sands Corp	31-Aug-09	\$1,730.3	In Situ	0.0	0.0	3,129.2	0.0	na	na	\$0.55	na	60% interest in MacKay River & Dover oil sands SAGD projects
Total SA	Synenco Energy Inc	24-Jul-08	\$395.4	Mining	0.0	0.0	642.7	0.0	na	na	\$0.62	na	60% in Northern Lights oil sands mining project
Ivanhoe Energy Incorporated	Talisman Energy Incorporated	29-May-08	\$90.9	In Situ	0.0	0.0	241.6	0.0	na	na	\$0.38	na	Undeveloped SAGD oil sands leases
Teck Resources Ltd	UTS Energy Corp	20-Sep-07	\$369.6	Mining	0.0	0.0	233.6	0.0	na	na	\$1.58	na	Additional 5% stake in Fort Hills oil sands mining project
Petro-Canada	UTS Energy Corp	20-Sep-07	\$369.6	Mining	0.0	0.0	233.6	0.0	na	na	\$1.58	na	Additional 5% stake in Fort Hills oil sands mining project
MEG Energy Corp	Paramount Resources Ltd	31-May-07	\$280.6	In Situ	0.0	0.0	404.9	0.0	na	na	\$0.69	na	Interest in SAGD leases in the Surmont area
Statoil ASA	North American Oil Sands Corp	27-Apr-07	\$1,963.9	In Situ	0.0	0.0	2,178.0	0.0	na	na	\$0.90	na	Leismer & Kai Kos Dehseh SAGD projects
Teck Resources Ltd	UTS Energy Corp	20-Apr-07	\$177.1	Mining	0.0	0.0	198.0	0.0	na	na	\$0.89	na	50% stake in mining Lease 14
Enerplus Resources Fund	Kirby Corporation	22-Mar-07	\$157.7	In Situ	0.0	0.0	217.6	0.0	na	na	\$0.72	na	90% stake in Kirby SAGD project
Korea National Oil Corporation	Newmont Mining	24-Jul-06	\$270.0	In Situ	0.0	0.0	302.0	0.0	na	na	\$0.89	na	100% stake in BlackGold SAGD oil sands lease
Teck Resources Ltd	Pretro-Canada; UIS Energy Corn	6-Sep-05	\$358.2	Mining	0.0	0.0	409.5	0.0	na	na	\$0.87	na	15% stake in the Alberta Fort Hills oil sands mining project
Total SA	Deer Creek Energy	2-Aug-05	\$1,255.5	In Situ	245.9	449.5	0.0	1,676.7	\$5.11	\$2.79	na	\$0.75	84% stake in Joslyn oil sands SAGD project in Athabasca region
China Petrochemicals	Synenco Energy Inc	31-May-05	\$119.2	Mining	0.0	0.0	0.0	602.0	na	na	na	\$0.20	40% of Northern Lights oil sands mining project
CNOOC Limited	MEG Energy Corp	12-Apr-05	\$121.6	In Situ	0.0	0.0	0:0	333.8	na	na	na	\$0.36	Interest in Christina Lake oil sands SAGD project
Average (All Projects)			\$545.0						\$5.11	\$2.79	\$0.89	\$0.59	
Median (All Projects)			\$363.9						\$5.11	\$2.79	\$0.84	\$0.56	
Mining Project Average											\$1.24		
Non-Mining Project (SAGD, et	tc) Average										\$0.62		
Source: JS Herold; GMP Securities													

Notes: 1. All transactions had to be over US\$50 mm in value (i.e. relatively material) without production and a significant ways off from first production 2. All transactions considered had contingent resources or a recoverable resources estimate attached 3. All transactions are Canadian Oil Sands (most comparable and analagous to Bemolanga) and are either mining (bitumen) or thermal (in-situ)

Source: GMP Securities Europe



The values paid for contingent resources range from US\$0.38/b at the low end (Ivanhoe's purchase of several of Talisman's oil sands leases in May 2008) to US\$1.89/b at the high end (Total's purchase of UTS Energy's Fort Hills Mining Project in July 2010). The average and median paid for contingent resources in these transactions are US\$0.89/b and US\$0.84/boe, respectively. Mining projects tend to attract a higher average EV/contingent resource value of US\$1.24/b versus US\$0.62/b for non mining projects.

Target Price and Net Asset Value

We have based our target price of 100p/sh on MOIL's Core NAV of 93.4p/sh which consists of Tsimiroro's contingent resources of 676 mmb of oil (as per NSAI 2010 CPR) risked at 20% chance of success.

Target Price Calculation	
Madagascar Oil	p/sh
Production Assets	-
Cash/(Net Debt)	17.9
Undeveloped Assets	84.2
Other Items incl G&A	(8.7)
Core NAV	93.4
Option Proceeds	10.2
Sum of parts	103.6
TARGET PRICE	100.0
Ohara Drian	04.0
Share Price	24.8
Expected Return	304%

Exhibit 31: Sum of the Parts Valuation

Source: GMP Securities Europe

We have assigned no value to Bemolanga as a result of MOIL and Total's decision not to pursue a pilot production due to unattractive economics in its current environment. We also recognize that we have assigned no value to the exploration blocks given that there are no plans to invest capital into the exploration acreage and no certainty of the company achieving a farm-out of this acreage in the immediate future. At this stage more work is needed to delineate resources to a level of certainty sufficient to ascribe value to.



	Net Asset Va	lue Breakdowr	ı	
	MMBOE	US\$/BOE	US\$MM	p/sh
Production Assets	-	-	-	-
Cash/(Net Debt)			58.79	17.88
Undeveloped Assets	135.20	2.05	276.92	84.21
Other items incl G&A			(28.54)	(8.68)
Core NAV	135.20	2.27	307.17	93.41
Price to NAV (%)				26%
Option Proceeds			33.60	10.22
Risked Upside	27.50	1.70	46.83	14.24
Risked NAV	162.70	2.38	387.60	117.87
Price to Risked NAV (%)				21%
		Current	Stock Prices	24.75p
			Unrisked	446.21p
Notes				
Long term Brent flat price	is US\$100.00 a	nd UK Gas pric	e is US\$8.00/m	mBtu.
All asset values are NPV	10 After Tax and	l in USD unless	noted.	

Exhibit 32: Net Asset Value

Two years of G&A are deducted to ensure 'going concern' costs are captured.

Source: GMP Securities Europe



Exhibit 33: MOIL's Risked Asset Value

Madagascar Oil Asset Breakdown

Current											
		Gross Resource	Working Int.	Overall	Val	ue/BOE	Net Risked Resources	Risked NAV (US\$	US\$/sh	Risked	Unrisked
Block	Prospect	(mmboe)	(%)	COS (%)	((US\$)	(mmboe)	mm)	(FD)	p/sh (FD)	NAV (p/sh)
Producing A	ssets										
							0.0	0.0	0.00	0.0	0.0
Undeveloped	l assets										
Madagascar	Tsimiroro Contingent Resources	676.0	100%	20%	\$	2.05	135	277	1.35	84.21	421.06
Madagascar	Bemolanga Contingent Resources*	435.0	40%	0%	\$	-	0	0	0.00	0.00	0.00
							135.2	276.9	1.3	84.2	421.1
Exploration											
Madagascar	Tsimiroro Prospective Resources	550.0	100%	5%	\$	2.05	27.5	47	0.23	14.24	342.58
Madagascar	Bemolanga Prospective Resources	325.0	40%	0%	\$	-	0	0	0.00	0.00	0.00
							28	47	0.23	14.2	342.6
	Gross Resources Total	1,986					162.7	324	1.58	98.45	763.6
Fully Diluted	Shares Outstanding (mm)	205.5									
USD:GBP Ex	change Rate	1.60									
USD:CAD Ex	change Rate	0.97									

Estimates of Reserves and Resources are provided by third party engineering firms, management and GMP securities

Overall COS = Chance of success after taking all risks into consideration including geological risk, political risk, etc

Value/BOE is calculated from a field model in the specific fiscal regime of the host country after government take, all capex and costs have been removed, and the time value of money is applied Risked NAV is equivalent to Expected Monetary Value (EMV). Risked NAV = (Reward*C.o.S.) - [Capital at Risk*(1-C.o.S.)]

Fully diluted shares outstanding = shares at period end + options + all dilutive securities

Cost % = the difference (if any) in costs paid versus working interest. Of relevance when farm-outs or farm-ins occur

*Bemolanga currently deemed uneconomical

Source: GMP Securities Europe



APPENDIX

Full biographies of Directors and Senior Management

J. Laurie Hunter, Chairman and Chief Executive Officer

Laurie Hunter, aged 64, has been a director of Madagascar Oil since October, 2008, and became CEO in July 2009. Previously he was the founder of Hunter Capital LLC, which focused on investing in early stage energy companies and assisting them to raise finance and generate growth. Mr. Hunter has served on the board of a number of private North American based E & P companies and has been both a limited and a general partner of a number of private drilling partnerships in the United States. In addition, Mr. Hunter is currently an independent director of Living Cell Technologies Limited (ASX-LCT), a New Zealand based biotechnology company. Mr. Hunter holds an MA in Politics, Philosophy and Economics from Oxford University.

Mark Weller, Chief Operating Officer

Mark Weller, aged 60, has been with the Company since 2008, after serving five years as President of a small independent Texas oil company. He has over 39 years of oil industry experience with an extensive background in domestic and international oil and gas development (both onshore and offshore drilling and production operations), including 15 years direct involvement with the design, initiation and operation of heavy oil steam flood projects in California. Mr. Weller has previously worked with Texaco and Getty Oil in a variety of positions throughout the United States and worked internationally developing projects in West Africa. Mr. Weller has a Bachelor's degree in Mechanical Engineering from the University of California, Davis.

Seth Fagelman, Chief Financial Officer

Seth Fagelman has served as the Company's Chief Financial Officer since December 2009. He has significant financial and business experience, having previously held CFO and senior management positions for CyrusOne, Prime Cable and GW Communications. He currently serves as a strategic adviser and board member to several private companies. Mr. Fagelman has helped raise over US\$1.7 billion in debt and equity capital to finance acquisitions and growth in the telecommunications, technology, manufacturing and distribution sectors. Mr. Fagelman graduated with an MBA from the University of Texas, Austin.

Gil Melman, General Counsel

Gil Melman became the General Counsel of the Company in March 2011. From August 2008 through February 2011, Mr. Melman was seconded to the Company to act as general counsel. During that time, Mr. Melman was a partner at Selman, Munson & Lerner P.C., a Texas based law firm specializing in corporate transactional work. Prior to joining Selman, Munson & Lerner P.C., Mr. Melman was employed as Vice President of Legal at a regional private equity fund and also as Vice President and Assistant General Counsel at a large Fortune 100 energy company. Mr. Melman began his career at Vinson & Elkins LLP, as a lawyer in its Corporate & Securities Group. Mr. Melman obtained his Bachelors of Business Administration and his Juris Doctor Degrees from the University of Texas, Austin

Andrew James Morris, Non-Executive Director

Andrew Morris, aged 42, is the founder and Managing Director of Persistency Capital LLC. He focuses on value investing and deal structuring across a broad geographical and sectoral spectrum. Prior to establishing Persistency Capital, Mr. Morris spent 15 years in the financial



services industry, most recently as a Director of the Financial Services Risk Management practice of Ernst & Young, advising a broad range of organizations in enterprise risk management. Mr. Morris currently sits on the board of a number of private companies, ranging from early stage resource companies to emerging technology companies. Mr. Morris holds a BSc (Hons) degree in Mathematics from Bristol University and is a member of the Institute of Chartered Accountants in England and Wales.

Colin Orr-Ewing, Non-Executive Director

Colin Orr-Ewing, aged 69, is a natural resources consultant for Blakeney Management, a fund management company specializing in advising on investment in Africa and the Middle East, with whom he has been associated since 1994. He has over 40 years of oil industry experience with an extensive background in domestic and international oil and gas development, including both onshore and offshore drilling and production operations. Mr. Orr-Ewing has served on the boards of several oil companies, including Stratic Energy Corporation (a Canadian oil company), and is currently on the board of Vatukoula Gold Mines Plc (formerly River Diamonds, a Fijian Gold Mining company), which is listed on AIM and Bacanora Minerals (a TSX quoted company). Mr. Orr-Ewing has a Bachelor's degree in Geography from Oxford University.

Ian Barby, Non-Executive Director

Ian Barby, aged 66, practised as a Barrister before joining Warburg Investment Management Ltd in 1985, subsequently becoming a vice chairman of Mercury Asset Management plc and latterly, until 2003, a managing director of Merrill Lynch Investment Managers. He is currently chairman of Invesco Perpetual UK Smaller Companies Investment Trust plc and Ecofin Water and Power Opportunities plc, as well as being a director of BlackRock World Mining Trust plc, Schroder Income and Growth Fund plc, Pantheon International Participations plc and SR Europe Investment Trust plc. Mr. Barby holds an M.A. in History & Law from Cambridge University.

Jonathan van der Welle, Non-Executive Director

John van der Welle, aged 56, was a director and Chief Financial Officer of Canadian –listed Stratic Energy Corporation until November 2010. Mr. van der Welle is currently a non-executive director of Groundstar Resources Limited (a Canadian listed oil company) and has extensive senior business and financial experience in the oil industry. Prior to joining Stratic Energy Limited he was Managing Director and Head of Oil & Gas at the Royal Bank of Scotland. After qualification as a chartered accountant at Arthur Andersen & Co., Mr. van der Welle joined UK listed Enterprise Oil plc in 1984. He had a number of business development and finance roles there, and was Group Treasurer from 1993 until 1995 following which he joined UK listed Hardy Oil and Gas plc as Finance Director. He subsequently became Finance Director of UK listed Premier Oil plc, and then a director and Chief Financial Officer of First Calgary Petroleums Ltd (a Canadian listed oil company). Mr. van der Welle holds a BSc (Hons) degree in Electronic Engineering from Southampton University, and is a member of the Institute of Chartered Accountants in England and Wales, the Association of Corporate Treasurers and the Chartered Taxation Institute.

Alvaro Kempowsky, General Manager

Alvaro Kempowsky is the General Manager of Madagascar Oil SA, having joined from Chevron Corporation in early 2007. Mr. Kempowsky spent much of his career as a Project and Operations Manager with Texaco in Colombia and Angola, including responsibility for, inter alia, operations and construction of heavy oil, light oil and natural gas developments. In addition, Mr. Kempowsky spent 14 years as the project manager for a new heavy oil steam project in Columbia for Texaco and Ominex. Mr. Kempowsky has a M.E. in Petroleum Engineering and



an M.E. in Engineering Management from the University of Tulsa, Oklahoma. He also has a degree in Electrical Engineering from the National University of Colombia.

Dr. Emma Ralijohn, Deputy General Manager

Dr. Emma Ralijohn is Deputy General Manager of Madagascar Oil SA, having joined in 2007, and is primarily responsible for working and negotiating with government authorities for environmental and operational permitting and contract requirements. Prior to joining the Company, Dr. Ralijohn served as finance adviser to the president of Madagascar for 2 years, which included negotiating a contract for the US\$110 million provided US-funded Millennium Challenge Account. In 2005 she was named fund CEO and was responsible for development and implementation of the fund for the Madagascar government. Since 1991, Dr. Ralijohn has also served as a faculty member and consultant for l'Institut National des Sciences Comptables et de l'Administration d'Enterprises (INSCAE). Dr. Ralijohn has a Ph.D. in Business Administration – Finance from Southern Illinois University of Carbondale,Illinois; a Doctorate ès Sciences de Gestion – Strategic Management, École Supérieure des Affaires (ESA) – Université Pierre Mendès, Grenoble, France; and a Masters in Accounting from National Business and Accounting School (INSCAE) Antananarivo, Madagascar.

L. J. (Jim) Lederhos P.E., Chief Engineer

Jim Lederhos is Chief Engineer for the Company, having joined in 2008 from Chevron, where, over a 27 year career, he was involved in all aspects of steam flood design and evaluation of heavy oil projects worldwide, including California and Indonesia. Mr. Lederhos has co-ordinated all aspects of the Tsimiroro Field project design and evaluation for thermal testing. He has also served as a consultant for several heavy oil projects worldwide in the last several years. Mr. Lederhos has B.S. degrees in Engineering and Geology from Oregon State University in Corvalis, Oregon.



Competent Persons Reports

Figure 1: PSC terms and fiscal su	immary for Bemolanga (Heavy Oil terms)
Start date of PSC - 6 July 2004 - pl	residential decree -amended to include TOTAL as of 17 Sept 2008.
Exploration Phases	Phase 1 - 2 years
·	Phase 2 - 2 years
	Phase 3 - 4 years - 2 subphases of 2 years each
	Extension of up to 2 years available
Personnel and Training Bonus	US\$100k/year
Royalty (Heavy Oil)	2-10% of the volume depending on the average price of Brent
	<us\$27 b="" brent="" crude<="" th=""></us\$27>
	US\$27/b to <us\$34 b="" brent<="" th=""></us\$34>
	US\$34/b to <us\$48 b="" brent<="" th=""></us\$48>
	US\$48/b to <us\$63 b="" brent<="" th=""></us\$63>
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	US\$135/b to <us\$150 b="" brent<="" th=""></us\$150>
	US\$150/b to <us\$200 b="" brent<="" th=""></us\$200>
	>US\$200/b Brent
Cost Oil Percentage	Up to 75% net of royalty available as cost oil
Profit Oil percentage split	First 10 years 90% contractor/10% OMNIS
	Second 10 years 80% contractor/20% OMNIS
	Third 10 years 70% contractor/30% OMNIS
	Remaining 60% contractor/40% OMNIS
Adminstration Fees	US\$250k/year
Production bonus	US\$2 mm when average production reaches ~100 kb/d
	for ~90 days
Corporate Tax	To be negotiated ahead of a development decision but
	standard is 35%
Notes:	MOL is entitled to US\$0.20/b above 3 bnboe expressed to be
	targeted (multiplied by Total's 60% share)
Source: Norwest	

Source: Norwest

Figure 2: PSC terms and fiscal summary for Tsimiroro

0	•
Start date of PSC - 6 July 2004 - p	residential decree
Exploration Phases	Phase 1 - 2 years
	Phase 2 - 2 years
	Phase 3 - 4 years
	Extension of up to 2 years available
Personnel and Training Bonus	US\$100k/year
Royalty (Heavy Oil)	4% of the volume above US\$34/b Brent
	(Also - no royalty is payable on hydrocarbons for steam flood fuel
	volume)
Cost Oil Percentage	Up to 90% net of royalty
Profit Oil percentage split	First 10 years 90% contractor/10% OMNIS
	Second 10 years 70% contractor/30% OMNIS
	Third 10 years 70% contractor/30% OMNIS
	Remaining 60% contractor/40% OMNIS
Adminstration Fees	US\$250k/year
Production bonus	US\$2 mm when av. Production reaches ~100 kb/d for ~90 days.
Corporate Tax	30%
Notes:	All minimum work commitments have been met for the first three
	phases

Source: NSAI

Petroleum resources classification

Total petroleum initially-in-place is that quantity of petroleum that is estimated to exist originally in naturally occurring accumulations. It includes that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production plus those estimated quantities in accumulations yet to be discovered (equivalent to "total resources").

Discovered petroleum initially-in-place is that quantity of petroleum that is estimated, as of a given date, to be contained in known accumulations prior to production (equivalent to Contingent resource.

Contingent resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be subclassified based on project maturity and/or characterized by their economic status. Contingent OOIP includes the recoverable and unrecoverable portion.

Undiscovered petroleum initially-in-place is that quantity of petroleum estimated, as of a given date, to be contained within accumulations yet to be discovered (equivalent to prospective resource).

Prospective resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of



certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity. Prospective OOIP includes the recoverable and unrecoverable portion.



Figure 3: Petroleum asset breakdown

Source: Norwest

Extended tables

Figure 4: Steam flood schematic

	Kern River	Tsimiroro
Formation depth below surface (ft)	700-770	199-250
Porosity	35%	24-26
Initial oil saturation	50%	53-57
Oil content (b/acre-ft)	1,400	1,000-1,400
Net pay <i>(ft)</i>	70	100-150
Permeability (md)	7,600	500
Initial formation pressure (psig)	60-70	50-60
Initial formation temperature (°F)	80-85	82-85
Steam chamber temperature (°F)	300	310-320
Oil °API gravity	14	13
Oil viscosity (cp)		
at 85°F	2,700	n/a
at 140°F	n/a	4,600
at 212°F	n/a	360
at 350°F	4	n/a

Source: MOIL



Figure J. Demolariya neavy Oli Fr	oject Reservoir Properties
Gravity (°API)	10-13
Sulphur (%)	0.7
Nitrogen (%)	0.5
Nickel (ppm)	75
Vanadium (ppm)	4
Asphaltene (ppm)	160
Ore density (g/cc)	2.21
Strip ratio	0.3
High grade ore porosity	24.5
High grade ore permeability (md)	650
Low grade ore porosity	14.6
Low grade ore permeability	11
SG 60 ° <i>F</i>	0.992
Pour point °C	36
Viscosity at 70 °C	9,735
Viscosity at 100 °C	1,038
Drive mechanism	Steam assisted gravity drainage
Trap mechanism	Structural/stratigraphic
Reservoir type	Braided stream

Figure 5: Bemolanga Heavy Oil Project Reservoir Properties

Source: MOIL and Norwest

METHODOLOGY AND ASSUMPTIONS

In valuing our international E&P universe, we use a standard set of assumptions. A 10% discount rate reflects our broad views on the cost of capital for the group as a whole. There are a number of other risks that must be recognized and incorporated into our valuation of individual companies, projects, regions and ultimately, our NAV.

Our current oil price assumptions are US\$79.00/b (Brent) for 2010 and US\$84.00/b (Brent) long-term flat for 2011 and beyond (Figure 6). For natural gas prices, we have assumed that prices trade on an energy content equivalent with oil prices.

	2010A	2011E	2012E	Long Term
WTI (US\$/b)	\$79.51	\$95.00	\$95.00	\$90.00
Brent (US\$)	\$79.73	\$107.00	\$105.00	\$100.00
NYMEX Gas (US\$/mmbtu)	\$4.38	\$4.50	\$5.25	\$5.25
UK Gas (\$/mmbtu)	\$6.55	\$9.03	\$9.00	\$8.50
UK Gas (p/therm)	42.3p	56.4p	56.2p	50.0p
FX Rate (US\$/CAN)	\$0.97	\$0.97	\$0.99	\$1.02
FX Rate (US\$/£)	\$1.55	\$1.60	\$1.60	\$1.60
FX Rate (US\$/EURO)	\$1.40	\$1.42	\$1.42	\$1.42

Figure 6: Oil Price Assumptions

Source :GMP Estimates

Our valuation approach is to calculate a core asset value for the company based predominately on its known 2P reserves and 2C contingent resources (using the PRMS reserve and resource definitions), where the 2C resources are actively moving towards commercialization, and adjusted for its net cash or debt position. We have built an economic model to estimate the NPV of the full field developments using known parameters where possible. Where these are not available, developments have been modelled based on analogous fields.



RISKS

Beyond the typical risks associated with commodity price and US dollar exchange risks, there are several factors that might affect a company exploring for and/or producing oil and gas in the international arena (outside North America), including:

- Geologic and engineering risks associated with the finding and ultimate recovery of oil and gas reserves in the quantities estimated which in turn determine the company's value.
- Dry holes during the exploration phase can severely limit not only the company's current prospects but also their ability to leverage into new ventures and/or their ability to access additional capital.
- Ability to secure drilling and completion services in a timely manner and/or at a competitive rate.
- Capital and operating cost inflation which can erode the economics of a project, potentially reducing the return to shareholders.
- Current conditions of capital markets may have a material impact on the company's ability to move forward if financing is needed. High levels of debt financing through project financing are a standard method of financing development projects and ability to access debt markets and the macro assumptions used by the finance providers can have a material impact on a company's ability to move forward, realise value and/or face potential equity dilution and/or realise full value through an industry sale process.
- Sector rotation risk and market movements and the funds flow associated with reallocation of capital. Additionally, liquidity risk can affect all companies especially during aggressive market movements.
- Loss of key employees is a major concern for all E&Ps as the specific skill sets required for individual positions can make the recruiting and retaining of select individuals difficult.
- Changes to existing oil and gas fiscal regimes could defer foreign investment, increase government take and reduce the company's net asset value attributable to a specific project.
- Infrastructure risk and access to infrastructure can be a potential risk. This can lead to
 delays in the sale of energy products to international and local markets and can increase
 operating costs (such as when trucking is used, for example).
- Geopolitical and security risks are an issue in many countries and can disrupt operations and activities for a considerable length of time or, in extreme situations, result in the loss of property and assets.
- While in most instances international oil prices are closely correlated, ability to access international markets may impact crude oil realizations in some jurisdictions. International gas prices are determined by a number of factors including inter-alia, different linkages (time lags and energy ratios) to crude oil prices, other competing fuels, coal and electricity and potential requirements to supply local markets at rates well below international price levels. Ability to commercialize gas reserves to a ready market can have a significant impact on potential valuations.



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4 subordinate-voting

- 5 restricted-voting
- 6 multiple-voting

7 the analyst who prepared this report has viewed the material operations of this issuer.

- 8 the analyst who prepared this research report owns this issuer's securities.
- 9 limited voting

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Key

The GMP research recommendation structure consists of the following categories:

FOCUS BUY. Small cap stocks (defined as stocks with less than \$500 million market capitalization) in this category have a total return potential (including dividends payable) of greater than 25% and large cap stocks a greater than 20% total return potential, as well as superior qualitative and timing characteristics. BUY. These stocks will have 15% or greater (small cap) or 10% or greater (large cap) total return potential.

SPECULATIVE BUY. These stocks will have a 30% or greater total potential return and they will have a speculative component which could be material to the return expectations.

HOLD. Small cap stocks ranked Hold will have a total return potential of 0% to 15%; large cap stocks ranked Hold will have a total return potential of 0 to 10%; and stocks that have a speculative component which could be material to the return expectations ranked HOLD will have a total return potential of 0% to 30%. REDUCE. Companies ranked Reduce have a negative potential total return.

FOCUS REDUCE. Companies ranked Focus Reduce have a significant negative potential total return and materially compromised qualitative and timing characteristics.

Note: Analysts have discretion within 500 basis points of the upper and lower limit of each rating to determine the recommendation.

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