

BBY Company Research		17 March 2015	
88 Energy Limited Energy - Oil & Gas			
88E	A\$0.009		
88 Energy Ltd. is an E&P company focussing on conventional and unconventional onshore oil and gas exploration in the Alaskan North Slope Basin, USA.		Johannes Faul, CFA +612 9226 0008 jxf@bby.com.au	

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A Fresh Start

Former offshore Moroccan oil explorer Tangiers Petroleum Limited (ASX:TPT) has renamed itself 88 Energy (ASX:88E) and has moved its focus area to onshore Alaska.

88E plans to acquire an initial working interest of 87.5% in Project Icewine, an onshore petroleum exploration project spanning 99,360 acres in, Alaska, USA. The remaining interest would be held by its JV partner Burgundy Xploration (BEX), with 88E as the operator of the project.

We maintain our SPECULATIVE BUY recommendation. However, we have removed our target price (A\$0.82ps previously) due to the uncertainties involved at this early stage of project development.

Project Icewine is located on the fringe of the prolific North Slope in Alaska, south of the giant oil fields of Prudhoe Bay and Kuparuk River. The Prudhoe Bay field alone has produced over 12 billion barrels of oil to date, out of an estimated 24 billion barrels original oil in place.

The Icewine JV has identified both unconventional and conventional prospective play types interpreted to be present at the Icewine acreage. The USGS estimates there could be a total of 940mmbbl unconventional and about 4,000mmbbl of conventional oil resources across the North Slope.

Independent engineers DeGolyer & MacNaughton have estimated the mean prospective gross unconventional resource at Icewine alone at 493mmbbl. Subject to geological success and viable economics, the Icewine play could develop into a significant resource play.

A year-round operational access road runs through the project and Icewine is only 35 miles south of Pump Station 1 where the Prudhoe Bay oil field feeds into the TransAlaska pipeline system.

The State of Alaska has a globally unique fiscal system, allowing for cash rebates of up to 85% of incurred exploration expenditure in CY2015. 88E plans to expedite its drilling and seismic programmes to take advantage of these rebates before they are scheduled to be gradually wound back.

Recently, 88E successfully raised A\$6.9M in an oversubscribed placement. The funds enable the company to meet the Project Icewine lease payments in full and commence exploration at the project.

Privately held Great Bear Petroleum (GBP) is currently drilling to the north of Project Icewine and news on its drill results is expected in min 2015.

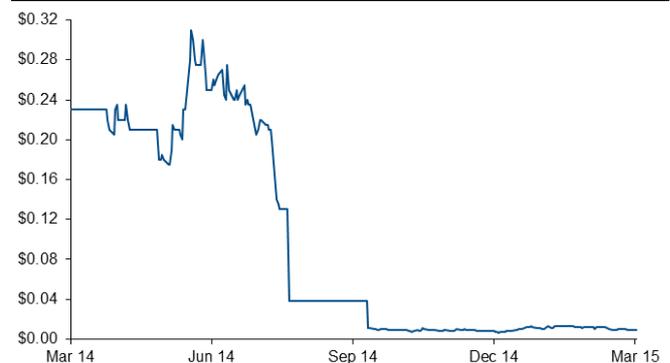
Company Data

Number of shares	1,138M
Market capitalisation	\$10M
Free Float (%)	92.9
12 month high/low	\$0.33/\$0.01
Average monthly turnover	\$5M
% S&P/ASX 200	n/a
% All Ordinaries	n/a
DDM Ranking	n/a
ESG Score (Ranking)	n/a
GICS Industry Group	Energy

BBY Technical View – as at 16/03/2015

Short Term	Downtrend	Resistance	\$0.014
Long Term	Downtrend	Support	\$0.007
-			

88E Share Price Performance



The Present – Alaskan Onshore Project Icewine

In November 2014, 88E entered into a non-binding term sheet with Burgundy Xploration, LLC (BEX) to acquire a working interest of 87.5% in yet to be granted exploration leases extending over up to 90,720 acres in Project Icewine, depending on the amount paid by 88E towards outstanding costs associated with the grant of the leases.

BEX already holds an interest in oil and gas leases over 8,640 acres located within the AMI, which are to be added to Project Icewine, bringing the total acreage of the project to 99,360 acres.

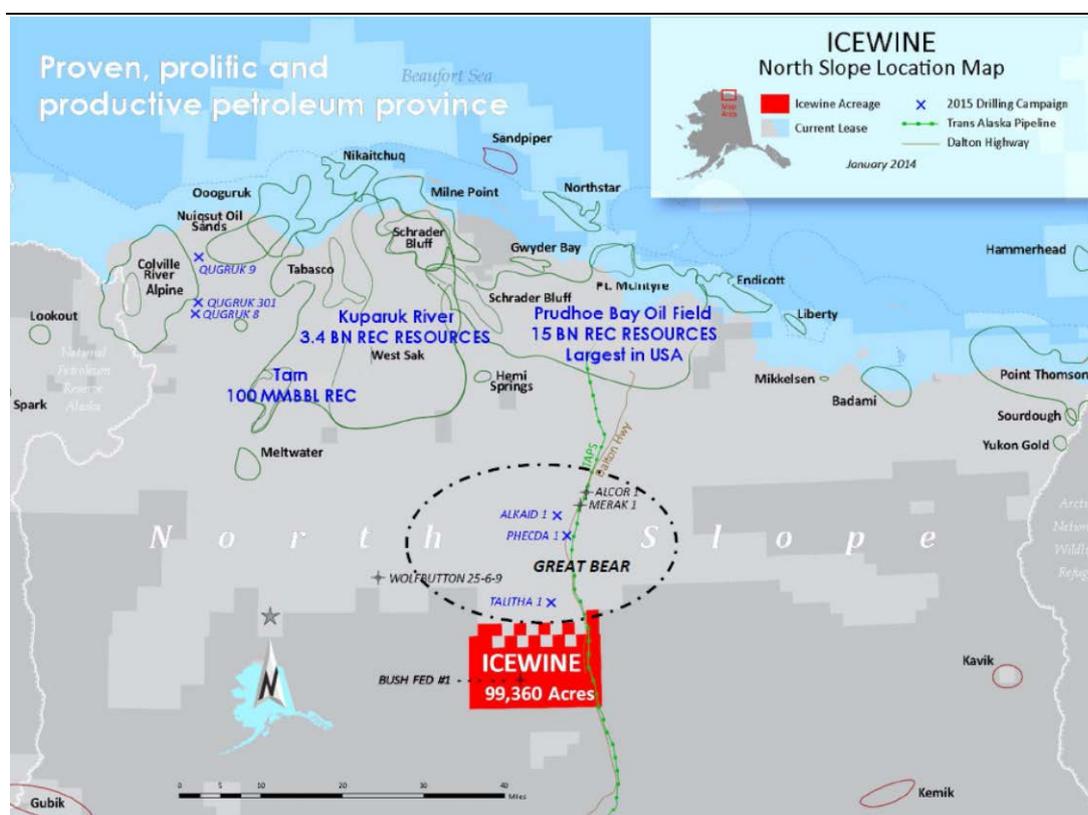
We anticipate 88E's initial interest in Project Icewine at 87.5% and BEX retaining an interest of 12.5%. We expect 88E's initial interest to decline to 77.8% once the first well at Project Icewine has been spudded, with BEX's interest increasing accordingly.

BBY estimates the total costs to 88E of acquiring Project Icewine at US\$3.5M. This figure includes the deposit to the Alaskan Department of Natural Resources (DNR), the balance of the lease costs, and the annual rental costs of the acreage.

The outstanding amount of US\$3.0M is likely to be paid in Q2CY15 after the formal award of the lease.

In March 2015, 88E successfully raised A\$6.9M in an oversubscribed offer. The majority of the funds are expected to be used to acquire and advance Project Icewine.

Figure 1 Location of the Project Icewine



Source: 88E

The primary objective is the unconventional targets, of which the HRZ zone is the primary shale oil target at Project Icewine. Initial drill results at Great Bear Petroleum's neighbouring acreage have indicated good oil shows over 180m in the HRZ/Hue shale with total organic carbon (TOC) levels of up to 8%. Oil saturation and porosity have an estimated mean of 57% and 14%, respectively. The shale formation is expected to be relatively brittle, making it amenable to fracking.

The U.S. Geological Survey (USGS) estimates total technically recoverable unconventional oil in the three prolific play types at up to 2,000mmbbl, with a mean of 940mmbbl. The USGS estimates the undiscovered mean technically recoverable prospective resources on the Central North Slope at 4,000mmbbl.

The conventional targets at Icewine are the secondary objective, and the company has identified three

significant plays, namely the Brookian Turbidites, the Beaufortian transgressive sands and the Beaufortian shelf sands.

Early success at the conventional could provide 88E funding for the primary unconventional objective.

Highly incentivised state exploration rebate program which guarantees up to 85% of allowable expenditure on exploration activities refunded in cash by the state.

Alaskan oil and gas explorers enjoy attractive exploration incentives and fiscal terms provide by the state, with cash rebates up to 85% of exploration expenditure in CY2015. These cash refunds are scheduled to decline to 75% in mid-2016.

Importantly, the Dalton Highway runs through Project Icewine and provides year-round access for exploration and potential future development. Exploration drilling in Alaska is generally limited to the winter months to protect the Tundra's fragile vegetation, but exploration targets directly adjacent to the highway can be drilled at any time.

The Past – Tarfaya Block Offshore Morocco

88E owns a 25% interest in the Tarfaya Block, an offshore oil and gas project in Morocco, through its wholly owned Moroccan subsidiary DVM International SARL.

Drilling of the high risk, high return Tao-1 well to test the key targets on the Tarfaya Block commenced on 26 June 2014.

On 4 August 2014, the company announced that the Tao-1 exploration had been unsuccessful. The Tao-1 exploration well has been plugged and abandoned.

The company is in the process of disposing of the Tarfaya project for which it has obtained shareholder approval.

Alaska - The Last Frontier

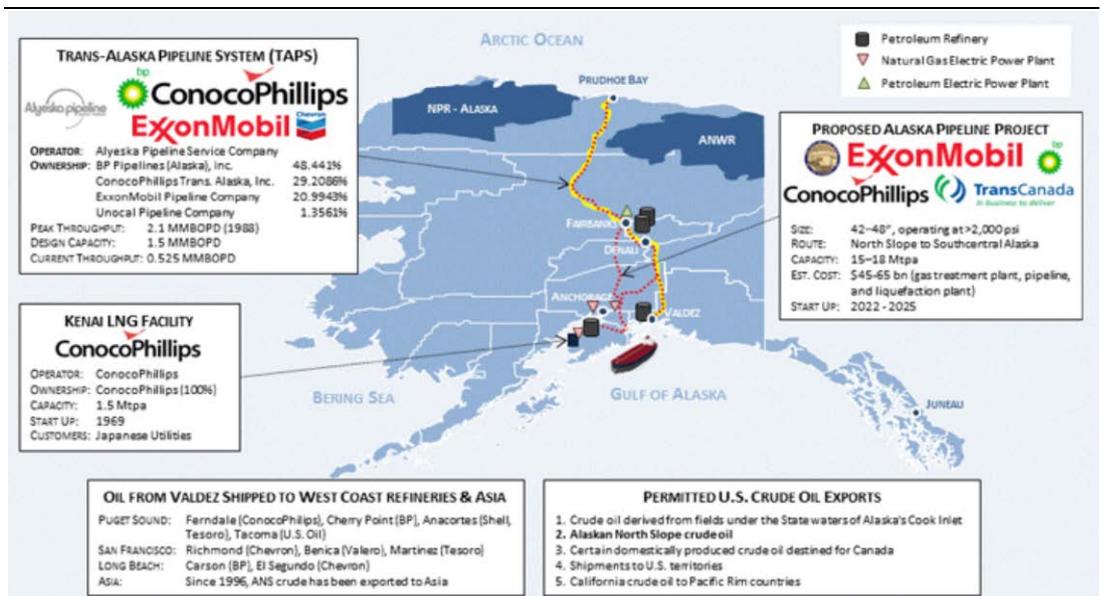
The oil and natural gas industry dominates Alaska's economy. Most of Alaska's oil production comes from the North Slope. The North Slope contains more than a dozen of the 100 largest oil fields in the U.S. and several of the 100 largest natural gas fields.

Alaska's Prudhoe Bay field is the largest oil field in the U.S., although production has fallen to less than 300mbopd from its peak of 1,600mbopd in 1988. Alaska's oil production rates have steadily declined as producing oil fields mature. However, large areas remain under-explored.

In recent years, Alaska has experienced warmer temperatures for longer periods of time during the year. This temperature change reduces the amount of time energy companies can explore for onshore oil. Ice roads and drilling pads can be used only during the coldest months of the year when the frozen land is less damaged by equipment, typically from January til May.

However, the warmer temperatures reduce floating ice packs, making offshore oil exploration easier. Oil exploration and drilling are prohibited in the Arctic National Wildlife Refuge and in other environmentally sensitive areas in the state.

Figure 2 Readily Available Infrastructure



Source: Great Bear Petroleum, U.S. Energy Information Administration, Denali Pipeline & Alaska Pipeline Websites

The North Slope is a proven prolific oil and gas province with cumulative capital expenditures to date of over US\$65B. The North Slope is home to Prudhoe Bay which was discovered in 1968. The Prudhoe Bay oil field covers 213,543 acres with over 1,100 producing wells.

The North Slope of Alaska is a proven world class petroleum province containing three regionally extensive oil prone source rocks: Triassic Shublik, Jurassic Kingak and Cretaceous Hues/HRZ.

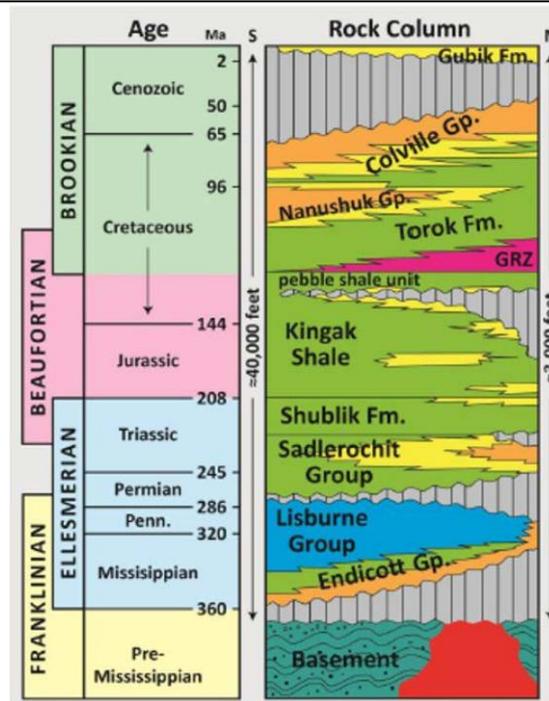
Collectively, the three source rock units are estimated to have charged more than 100,000mmbbl of oil in-place into multiple conventional reservoirs discovered throughout the basin.

The estimated on-shore resources of the North Slope are 16,000mmbbl of undiscovered, technically recoverable oil resources, and 99 TCF of gas resources.

The Trans-Alaska Pipeline System (TAPS) is an 800-mile, 48 inch pipeline running from the North Slope to tidewater at Valdez, Alaska. Historic North Slope production of close to 17,000mmbbl of oil has been transported by TAPS, with peaked at a maximum daily throughput rate of 2.1 million barrels on 14 January 1988.

Current North Slope Production is about 525,000bopd, providing for significant excess pipeline capacity.

Figure 3 Alaskan Petroleum Systems



Source: Great Bear Petroleum

Great Bear's Exploration Programme Could Provide Some Read Through

Great Bear Petroleum (GBP) is a private company solely focused on conventional and unconventional oil exploration, development and production on the North Slope of Alaska. GBP was the first E&P company to focus on the unconventional potential of shale formations on the North Slope. The company believes the North Slope shales have a number of similarities to the Eagle Ford shale play in Texas.

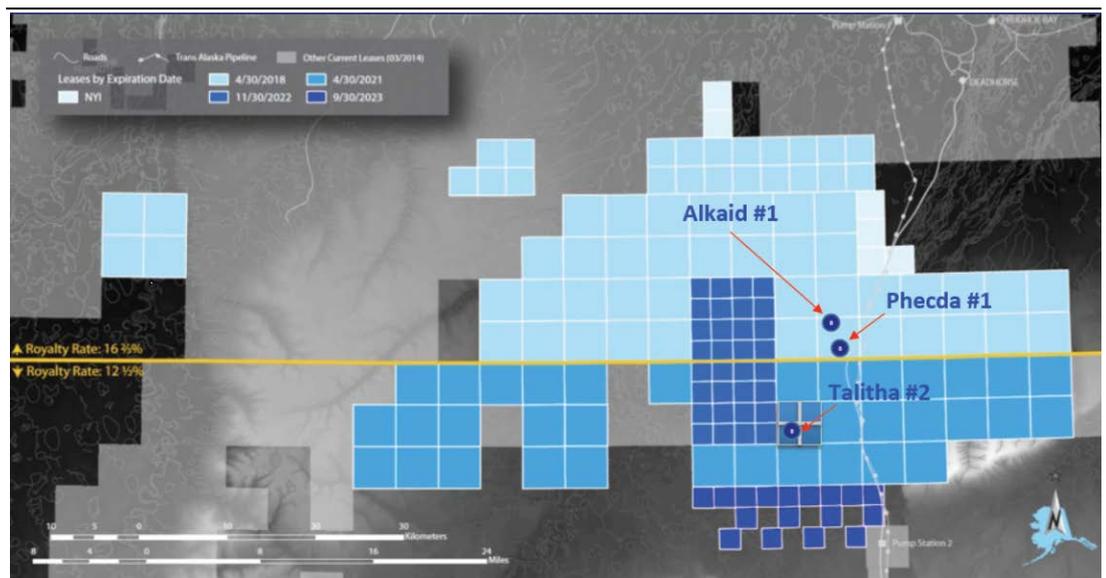
GBP is the leading unconventional resource player on the North Slope of Alaska, in terms of size with some 500,000 acres as well as exploration work completed up to date.

GBP has resumed its North Slope exploration programme budgeted at US\$50M and spudded the Alkaid #1 well 5 February 2015. GBP plans to drill the nearby well Talitha #2 and possibly a third well, Phecda #1 during the winter 2014/15 drilling season. GBP is targeting conventional formations in its current programme, but the wells are expected to intersect some of the shale targets, providing further information.

Production testing at GBP's wells could begin in the northern hemisphere summer 2015, should the drilling be successful. Although the current targets are off the permanent road and are only accessible for exploration by ice roads, additional targets are adjacent to the highway and could be followed up in summer if the current programme produces encouraging drilling results. Also, rig rates are generally lower during the Alaskan summer, as winter is the peak drilling season on the North Slope.

Successful results from GBP's current drilling activities could have positive implications for 88E's secondary targets, the conventional play. The Talitha #2 is only 4 miles north of Project Icewine.

Figure 4 GBP- Area of Operations and Well Planned in Winter 2014/15



Source: Great Bear Petroleum

Previously, GBP had targeted shale formations with two test wells in 2012, namely Alcor #1 and Merak #1. Core samples were extracted for analysis, and have met or exceeded GBP's expectations. However, no horizontal production testing took place and no laterals were drilled due to the lack of rig availability.

GBP is planning to generate near term cash flow from conventional wells to fund the long-term development and evaluation of its unconventional shale oil resource.

The Potential Prize is Alluring...

The shale formations of the North Slope have generated hydrocarbons which have migrated into conventional accumulations, including the super-giant Prudhoe Bay field. It is probable that these shale source rocks have retained oil and gas which hasn't migrated.

The USGS has assessed the potential for undiscovered, technically recoverable oil and gas resources in three North Slope source rocks, namely the Brookian shale (Hue/HRZ), Kingak shale and Shublik formation.

These source rocks all generated oil and gas which migrated into conventional accumulations. The USGS believes all source rocks have likely retained oil and gas.

The USGS estimates the probability that essential petroleum system elements occur in at least part of the assessment unit of the Brookian shale at 90%.

The USGS estimates the Brookian shale undiscovered resources across the North Slope to range between 0-955mmbbl, with a mean of 499mmbbl.

Figure 5 Alaska North Slope shale-oil and shale-gas assessment results

Total petroleum systems (TPS) and assessment units (AU)	AU probability	Field type	Total undiscovered resources											
			Oil (MMBO)				Gas (BCFG)				NGL (MMBNGL)			
			F95	F50	F5	Mean	F95	F50	F5	Mean	F95	F50	F5	Mean
Shublik TPS														
Shublik Shale Oil AU	0.95	Oil	0	428	928	463	0	418	981	462	0	10	26	12
Shublik Shale Gas AU	0.95	Gas					0	36,612	72,195	38,405	0	184	442	205
Brookian TPS														
Brookian Shale Oil AU	0.90	Oil	0	421	955	449	0	818	1,996	898	0	20	51	22
Brookian Shale Gas AU	0.90	Gas					0	2,124	4,375	2,184	0	21	46	22
Kingak TPS														
Kingak Shale Oil AU	0.40	Oil	0	0	117	28	0	0	238	57	0	0	6	1
Kingak Shale Gas AU		Gas	Not quantitatively assessed											
Total continuous resources			0	849	2,000	940	0	39,972	79,785	42,006	0	235	571	262

Source: USGS

Independent reservoir engineers DeGolyer & MacNaughton have estimated the mean prospective gross unconventional resource at Icewine alone at 493mmbbl. Risked at 41% and gross to 88E, the unconventional resource across the three source rocks is estimated at 175mmbbl.

Figure 6 Unconventional Resource Potential

PROSPECT ICEWINE NORTH SLOPE, ALASKA	ESTIMATED PROSPECTIVE OIL RESOURCE * (HRZ, HUE, KINGAK, & SHUBLIK SHALES)				
	UNRISKED				RISKED (41% Probability)
	LOW	AVERAGE	HIGH	MEAN	RISKED MEAN
GROSS (MMBO)	244.3	446.4	813.2	492.5	200.3
TANGIERS NET (MMBO) (Basis: 87.5% on award)	213.7	390.6	711.5	430.9	175.3

Source: 88E, DeGolyer & MacNaughton

...But Only Drilling Can Prove it Up

The unconventional oil and gas potential on the North Slope remains uncertain as only been a limited number of exploration wells have been drilled to date. Drilling is the only way to determine if production from these shales is possible at economic rates and to quantify any reserves.

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BBY acted as the Co-Manager to the Placement as announced to the market on 18 February 2015.

Contact with 88E has been made during the preparation of this report for assistance with verification of facts.

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