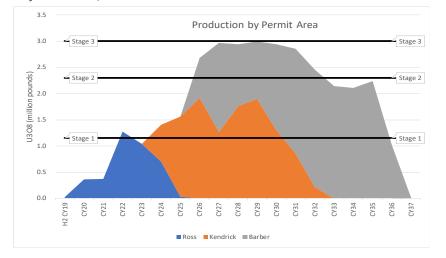
### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

Analyst	Date	Price Target
Michael Emery	28 <sup>th</sup> June 2019	\$0.60/sh

# The only active uranium producer on the ASX with US operations, providing direct exposure to Section 232 outcomes.

#### **Key points**

- Peninsula Energy Ltd ('PEN') is the only active uranium producer on the ASX with US operations, providing direct exposure to Section 232 outcomes;
- PEN's flagship asset is the Lance Project in Wyoming, Lance is an in-situ recovery (ISR) operation targeting 3Mlbpa output (top 10 globally) and a 17year mine life;



- LOM production targeting a very competitive AISC of US\$31.77/lb;
- PEN has long term contracts in place out to 2030, with commitments of up to 6.3Mlb at a weighted average price of US\$51-53/lb;
- We believe US\$60/lb uranium price LT due to emerging structural supply deficits.
- Premium uranium pricing likely for US domestic production arising for Section 232 quotas;
- Lance holds the largest uranium Resource of any producing asset in the US with a JORC (2012) compliant Resource of 51Mt grading 479ppm for 53.9Mlbs U3O8;
- We Value PEN at \$0.55/sh based on a DCF analysis of the Lance Projects under low pH ISR (risk adjusted 55%);
- We Initiate Coverage with a Speculative Buy recommendation and a \$0.60/sh Price Target. Our "Speculative" rating reflects uncertainty on uranium pricing, uranium recovery rates and timing and costs of project development;
- Short-medium term catalysts include:
  - o Final SML amendments to proceed with low pH ISR, expected July 2019;
  - o Section 232 investigation outcome, expected July 2019;
  - o Ongoing results from low pH field trials;
  - Commencement of low pH operations;

Peninsula Energy Ltd		Year End	30 June
Share Price Price Target Valuation	<b>0.30</b> <b>0.60</b> 0.55	(r	<b>A\$/sh</b> <b>A\$/sh</b> A\$/sh npv 10%)
Shares on issue	275		diluted *
Market Capitalisation	82		A\$m
Enterprise Value	97		A\$m
Debt	-23		A\$m
Cash	9		A\$m
Largest Shareholder	Para		9.7%
Production F/Cast	2019f	2020f	2021f
Mine Production (klbs)	87	226	439
TOTAL Sales (klbs)	282	226	439
Op Cash Costs (US\$/lb)	) 91	43	32
AISC (US\$/lb)	104	56	45
Assumptions	2019f	2020f	2021f
PEN Contract (US\$/lb)	35	37	44
U3O8 Spot (US\$/lb)	26		60
FX AUD/USD	0.72		0.74
Key Financials	2019f	2020f	2021f
Revenue US\$m	5	-27	29
NPAT US\$m	-20		-16
Cashflow US\$m	-13		-25
CFPS (Ac)	-5		-9
P/CFPS (x)	NA		NA
EPS (Ac)	-7	NA	-6
EPS growth (%)	NA		NA
PER (x)	NA		NA
EV:EBITDA (x)	-9		-7
EV:EBIT (x)	-8		-5
DPS (Ac)	NA	,	n/a
Dividend Yield (%)	NA		n/a
ND:Net Debt+Equity (%	) 21%		NA
Interest Cover (x)	NA		39

**Share Price Chart** 



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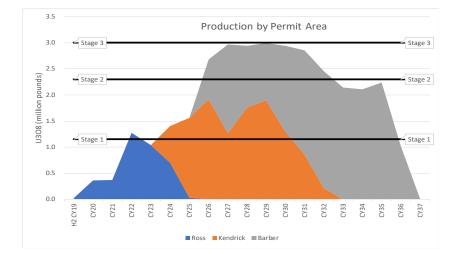
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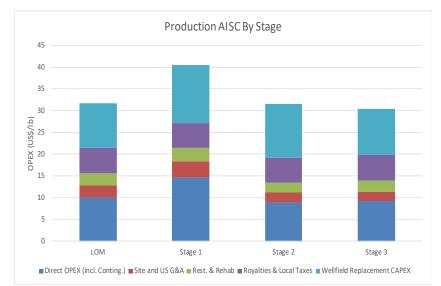
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### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

### **Key Variables**

Val,	/ Sh				Ura	anium Pri	ice			
	\$0.55	-20%	-15%	-10%	-5%	0%	5%	10%	15%	20%
	15%	\$0.13	\$0.18	\$0.24	\$0.29	\$0.35	\$0.40	\$0.46	\$0.51	\$0.56
	10%	\$0.18	\$0.24	\$0.29	\$0.35	\$0.41	\$0.46	\$0.52	\$0.58	\$0.63
SD	5%	\$0.23	\$0.30	\$0.35	\$0.41	\$0.47	\$0.53	\$0.59	\$0.65	\$0.71
AUDUSD	0%	\$0.30	\$0.36	\$0.42	\$0.49	\$0.55	\$0.61	\$0.67	\$0.73	\$0.80
AU	-5%	\$0.36	\$0.43	\$0.50	\$0.56	\$0.63	\$0.69	\$0.76	\$0.83	\$0.89
	-10%	\$0.44	\$0.51	\$0.58	\$0.65	\$0.72	\$0.79	\$0.85	\$0.93	\$1.00
	-15%	\$0.52	\$0.60	\$0.67	\$0.74	\$0.82	\$0.89	\$0.97	\$1.04	\$1.11





Euroz Forecast	FY'19	FY'20	FY'21	FY'22	FY'23	FY'24
Uranium US/lb	\$25.75	\$36.75	\$60	\$60	\$60	\$60
AUDUSD	\$0.72	\$0.71	\$0.74	\$0.75	\$0.75	\$0.75

#### Our Share Price Sensitivity



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#### **Our Market Sensitivity**

Valuation - \$0.55/sh

Price Target - \$0.60/sh

#### Bull Scenario - \$0.80/sh

Uranium spot price rises beyond our medium-term forecasts of US\$60/lb and PEN locks in LT contracts at significantly higher prices due to premiums recieved by US producers. Transition to low pH ISL exceeds expectations from a cost perspective.

#### Base Scenario - \$0.60/sh

Uranium price recovery matches our forecasts and low pH ISL performs as expected in FLTs. PEN attracts premium pricing due to US domestic protection.

#### Bear Scenario - \$0.20/sh

Uranium market remains uneconomical as spot and term prices continue to flat line. PEN continues to sell spot material into contracts and continues to curtail unsuccessful ISL mining at Lance.

#### **Company Summary**

Peninsula Energy Ltd (PEN) is a US based uranium producer whose flagship asset is the Lance Projects in Wyoming. Through its 100% owned subsidiary, Strata Energy, PEN is permitted to produce up to 3Mlb of U3O8 per annum from its in-situ leaching (ISL) operations. PEN is in the process of converting operations from alkaline ISL to low pH ISL with a Feasibility Study pointing to a three-stage ramp up to achieve 3Mlbpa by 2026 at AISC of US\$31/lb. A resource of 54Mlb allows a current mine life beyond 2030 with additional resource inclusion a possibility from the underexplored tenements.

#### Disclaimer

The projections and information above is based on the set assumptions outlined. Due care and attention has been used in the preparation of this information. However actual results may vary from forecasts and any variation may be materially positive or negative. Forecasts by their very nature, are subject to uncertainty and contingencies, many of which are outside the control of Euroz.

#### **Euroz Securities Limited**

### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

<b>Market Statistics</b>						Yea	r End 3	0 June
Share Price	\$0.30	A\$/	′sh		ctor			
Fully Paid Ord Total Options	247 28		m		n Ha /ne ŀ	rrison		E Chair D/CEO
Total Dil. FPOrd	20 275		m m			Barke		NE Dir
	2/0					neatle		NE Dir
Market Capital'n (d	il) \$82		m	Dav	id Co	oyne .		CFO
Enterprise Value	\$97		m	Sha	roho	lders		
Cash	\$9		m		adic			9.7%
Debt	\$(23)		m	RC				9.1%
Asset Valuation				U	JS\$n	n .	A\$m	A\$/sh
Lance - DCF					117	7	156	0.57
Lance - Expl'n						5	7	0.02
Working Capital						1 -	1 -	0.01
Unpaid Capital Cash						5	- 9	0.03
Debt					(17		(23)	(0.08)
Total					112	2	150	0.55
F/Cast Production	(US\$m	) Ma	rQ'19	FY	19f	FY201	FY21f	FY22f
Mine Production	klbs		15		87	226		, -
Contract Req Spot Sales	klbs		41		117	150		
TOTAL Sales	klbs <b>klbs</b>		(65) 106		31) 2 <b>82</b>	76 <b>226</b>		
				_				.,e
Costs								
Op Cash Costs AISC	US\$/lb US\$/lb		83.0 96.4		91.0 4.4	43.0 56.4		
AISC	05\$/IL	)	90.4	10	4.4	50.4	45.5	40.2
Assumptions								
PEN Contract	US\$/lb		34		35	43		
U3O8 Spot FX	US\$/lb USD/A		25 0.72		26 .72	37 0.71		
	000//		0.72	. 0	., 2	0.7	0.71	
Ratio Analysis (US	\$m) Mar			(19f	FY	20f	FY21f	FY22f
Cashflow		-13		-13		-18	-25	19
Cashflow per Sh Cashflow Ratio (x)		-5 NA		-5 NA		-7 NA	-9 NA	7 4
							11/3	
Earnings		-20		-20		-27	-16	28
Earnings per Sh EPS Growth (%)		-7 NA		-7 NA		-10 NA	-6 NA	10 NA
PE Ratio (x)		NA		NA		NA	NA	3
Enterprise Value		75		75		34	62	43
EV : EBITDA EV : EBIT		-9 -8		-9 -8		-9 -6	-7 -5	1
		0		0		0	5	
ND:ND+Eq (%)		21%		21%		NA	NA	NA
ND:Eq (%)		26%		26%		NA	NA	NA
NTA/sh (A\$/sh) Interest Cover (x)		0.2 NA		0.2 NA		0.3 NA	0.2 39	0.3 NA
EBIT Margin (%)		NA		NA		NA	NA	39%
RoE (%)		-32%		32%		6%	-20%	28%
RoA (%)		-21%	-	21%	-2	3%	-17%	25%
Dividend (c/sh)		NA		NA		NA	NA	NA
Div Payout		NA		NA		NA	NA	NA
Div Yield		NA		NA		NA	NA	NA
Div Franking		NA		NA		NA	NA	NA

Profit and Loss (US\$m	)MarQ'19	FY19f	FY20f	FY21f	FY22f
Revenue Cost of Sales <b>Gross Profit/(Loss)</b>	(4) (4)	5 (17) <b>(11)</b>	13 (17) <b>(4)</b>	29 (38) <b>(9)</b>	80 (45) <b>35</b>
Other Income Selling and Marketing Admin Depreciation Impairment	(0) (0) (0)	(0) (1) (1)	(0) (3) (2)	(0) (3) (3)	(0) (3) (4)
FX Gain/(Loss) Derivative (Loss)/Gain	-	(2)	-	-	-
Other Expense <b>Profit/(Loss) before In</b> Finance Cost <b>PBT</b>	- t/Tax (5) (0) (5)	(0) (16) (2) (18)	- ( <b>9)</b> (18) ( <b>27)</b>	(16) (16)	28 28 28
Tax Continued Ops NPAT	(5)	<b>(0)</b> (18)	- (27)	- (16)	- 28
Discontinued Ops NPAT	(5)	(2) (20)	- (27)	- (16)	- 28
Cash Flow (US\$m) Receipts Payments Int Paid	MarQ'19 - (3) (0)	<b>FY19f</b> 7 (18) (1)	FY20f 13 (20) (2)	<b>FY21f</b> 29 (41)	<b>FY22f</b> 80 (48)
Int Received Taxes Paid	0(0)	0 (0)	1	1	1
CF FROM OPS	(4)	(11)	(8)	(12)	33
Expl & Eval Mineral Dev Exploration Bonds PPE	- - - (0)	(0) (1) (0) (0)	(0) (10) (0) (9)	(0) (13) (0)	(0) (13) (0)
CF FROM INVESTING	(0)	(2)	(20)	(14)	(14)
Cash from Equity Cash from Borrowings Repayment of Borrowin Capitalised Borrowing <b>CF FROM FINANCING</b>	Costs -	- (1) (1) (1)	30 30 (17) - <b>43</b>	20 - - 20	-
Cash Surplus/(Deficit)	(0) (4)	(14)	43	(5)	- 19
Cash Open	8	12	1	16	10
FX Cash Close	-	0	16	10	29
Balance Sheet (US\$m)	-	FY19f	FY20f	FY21f	FY22f
Cash and Equivalents Current Receivables Other Current Assets Non-Current Assets TOTAL ASSETS	6 0 6 88 101	1 0 6 88 <b>95</b>	16 0 6 88 <b>110</b>	10 0 6 88 <b>105</b>	29 0 6 88 124
Current Payables Borrowings Other Liabilities Non-Current Liabilities	2 17 2 10	2 17 2 10	2 - 2 10	2 - 2 10	2 - 2 10
TOTAL LIABILITIES	32	32	15	15	15
NET ASSETS	69	63	96	90	109
Reserves and Resource		Crada	(10,0,00)	1709 00	<b></b> t
<b>Classification</b> Measured Indicated Inferred T <b>otal</b>	Mt 4 11 36 <b>51</b>	Grade	(ppm) l 488 495 476 <b>481</b>	JSU8 Co	4 12 38 <b>54</b>
<b>By Production Area</b> Ross Kendrick Barber <b>Total</b>			471 544 480 <b>499</b>		6 16 32 <b>54</b>

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### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

#### Discussion

Peninsula Energy Ltd (PEN) is one of only a handful of active uranium producers globally and the only one on the ASX with US production exposure. The flagship asset is the Lance Projects in Wyoming, USA, which includes the Ross Central Processing Plant (CPP) and is held in PEN's 100%-owned US subsidiary, Strata Energy Inc. The operation employs an in-situ recovery (ISR) mining method, which is a common, low-disturbance method of uranium recovery used throughout Kazakhstan and the US. The Ross CPP is one of three uranium ISR plants currently operating in the US.

Alkaline ISR operations at the Lance Projects commenced in late 2015, however by mid-2016 uranium recovery rates continued to be meaningfully below expectations, suggesting that the orebody was not amenable to alkaline leaching. The resultant sub-economic operating performance compelled PEN to investigate the use of a low pH strategy on the orebody.

Early lab test results were promising, recovering more than double the uranium of alkaline lixiviants, driving PEN to pursue the low pH ISR strategy in earnest. The resultant September 2018 Feasibility Study points to a low pH ISR operation with a three-stage expansion that ultimately targets a 3Mlbpa output with a very competitive LOM AISC of US\$31.77/lb. Alkaline ISR operations have been curtailed to around 90klbpa as the Lance Projects transition towards a low pH solution.

PEN has long term contracts in place for delivery of up to 6.3Mlbs of U3O8 out to 2030 at a weighted average sales price of US\$51-53/lb. In the current suppressed uranium price environment, these contracts are able to be partially filled with spot material allowing a profitable arbitrage trade. PEN has contracted to purchase 150klbs in 2019/2020 at US\$23.69/lb which likely generates US\$2-4m of profits alone. We expect this arbitrage will continue to be profitable for PEN until operations are successfully converted to lower cost low pH ISR, bringing production costs below contract pricing.

From a uranium macro standpoint, the market has largely been frozen over the past 12 months as utilities await direction from the US Section 232 investigation into uranium imports to the US. The resulting lack of utility contracting has led to a directionless uranium price drifting lower as spot purchases wane. Regardless of the investigation outcome, we expect utilities to restart contracting activities once direction is given as to contracting requirements, particularly for US domestic utilities. With the curtailment of 30% of primary uranium supply globally in 2017/2018 and the widely advertised restart incentive price of US\$40-50/lb for lower cost projects, we expect recontracting will ultimately drive uranium pricing towards our US\$60/lb long term forecast.

Notable for PEN is that any protectionist outcome from the US Section 232 investigation will likely result in a bifurcated US and non-US market, with US uranium production likely attracting premium pricing. A successful transition to lower cost, low pH ISR production would magnify PEN's margins and should allow profitability throughout the cycle.

Our Valuation of \$0.55/sh is based on our 55% risk-adjusted post-tax DCF (10%) of PEN's Lance Projects under low pH ISR operations. Our risk adjustment relates to uncertainty around uranium pricing, operational recovery rates and project delivery timing and costs. We have assumed granting of the Source and By-product Material Licence (SML) is imminent. We have ascribed zero value to PEN's Karoo Project in South African assets as they are currently being relinquished by the Company and have been impaired by the Company to zero value.

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Only active uranium producer on ASX with US production exposure. Transitioning to low pH ISR Feasibility Study points to 3Mlbpa operation & LOM AISC of US\$31.77/lb Long-term contracts in place to 2030 @ US\$51-53/lb Section 232 outcome imminent - Utility recontracting to follow

Potential premium pricing for PEN's uranium

Valuation of \$0.55/sh

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### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

We note that while we have modelled PEN using our uranium price forecasts consistent with the rest of our uranium Coverage, we see a possibility that a protectionist US Section 232 investigation outcome leads to a higher price received for US domestic production, posing upside risk to our Valuation. A 3Mlbpa operation would make Peninsula the largest US domestic uranium producer and top 10 globally.

We Initiate Coverage with a Speculative Buy recommendation and a \$0.60/ sh Price Target. The "speculative" recommendation relates to the speculative nature of our uranium pricing forecast and the US Section 232 investigation outcome. Our Valuation to Price Target disconnect results from the potential for US domestic production to benefit from premium pricing and noting that PEN provides the only US uranium production exposure on the ASX.

Key price catalysts in the short-to-medium term include:

- US Section 232 investigation outcome with high probability of protectionist pricing for US domestic producers;
- Granting of SML amendment required to convert operations to low pH ISR;
- Completion of Stage 1 conversion to low pH ISR and confirmatory recoveries;
- Additional long term contracting for PEN's production, providing price protection;

#### Valuation

- We Value Peninsula at \$0.55/sh;
- Our Price Target for Peninsula is \$0.60/sh.

We Value Peninsula at \$0.55/sh based on a post-tax DCF (10%) of the Lance Project's Low pH Feasibility Study released in September 2018. Our Valuation is risk-adjusted at 55% to reflect uncertainty around recovery rates, uranium pricing and timing and costs of delivering low pH operations at Lance. We have assumed that PEN is granted the Source and By-product Material License, having already obtained the Permit to Mine permit in March 2019.

Peninsula's Lance Projects Low pH Feasibility Study includes a three-stage expansion that ultimately targets production of 3Mlbpa from 2026 at a very competitive AISC of US\$30.36/lb. We have highlighted the key elements of the study below, together with our Euroz uranium price and FX forecasts used in the modelling of the project.

Stage	Year	Capacity Mlbs/yr	Expansion Capex	Production cost \$/lb	AISC \$/lb
Stage 1	2019	1.2	\$5.3m	\$14.67	\$40.58
Stage 2	2024	2.3	\$43.1m	\$8.93	\$31.52
Stage 3	2026	3.0	\$70.3m	\$9.16	\$30.36
LOM			\$118.7m	\$10.00	\$31.77

Figure 1: Low pH FS Targets. Source: PEN

Euroz Assumtions	FY19	FY20	FY21	FY22	FY23
U3O8 Spot (US\$/lb)	24	37	60	60	60
AUD/USD	0.72	0.71	0.74	0.75	0.75

Figure 2: Euroz Forecasts. Source Euroz

Peninsula's numbers point to a 17-year mine life, with total production of 33.4Mlbs at a LOM AISC of US\$31.77/lb. The project is expected to generate a pre-tax NPV8 of US\$157m assuming a LT U3O8 price of US\$47/lb. The project represents strong leverage to the uranium price with a US\$10/lb increase to LT prices representing a ~US\$100m increase in NPV.

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Price Target of \$0.60/sh

### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

Using Euroz assumptions, the Lance Projects have an un-risked NPV10 of US\$216m and during Stage 3 of the mine plan generates US\$140m EBITDA/ year. This compares favourably to PEN's current EV of US\$70m, demonstrating the Company's potential appreciation in a uranium market rerating.

We have attributed zero value to PEN's 74% interest in the South African Karoo Projects as these are being relinquished and the Company has impaired the value of these to zero. Corporate costs have been included in the Lance Project DCF.

Asset Valuation	US\$m	A\$m	A\$/sh
Lance - DCF (100%)	119	158	0.58
Lance - Expl'n	5	7	0.02
Working Capital	1	1	0.01
Unpaid Capital	-	-	-
Cash	6	9	0.03
Debt	(17)	(23)	(0.08)
Total	114	152	0.55

Our Price Target for Peninsula is \$0.60/sh with the Valuation to Price Target disconnect due to our belief that US domestic uranium production will benefit from premium pricing versus rest of world after a protectionist outcome from the Section 232 investigation. PEN provides the only US uranium production exposure on the ASX and will ultimately be bid up by investors seeking exposure to US premium pricing.

PEN is enviably positioned relative to the ASX peer set, with the Company enjoying:

- Existing production;
- Long term, attractively priced contracts out to 2030;
- Amenability to low-cost low pH ISR mining;
- Location within mining friendly, low political risk jurisdiction;
- Low cost optionality short term;
- Potential premium pricing from US domestic protectionism.

PEN's key ASX peers are:

- Paladin Energy:
  - o Market Cap (dil): \$213m
  - o 20+ year LOM at 5Mlbpa
- Boss Resources:
  - o Market Cap (dil): \$73m
  - o 7-year LOM at 3.2Mlbpa
- Berkeley Energia:
  - o Market Cap (dil): \$87m
  - o 14-year LOM at 4.4Mlbpa

Compared to these key peers, PEN is the only current active producer, albeit at a curtailed rate as it transitions operations to low pH ISR. The capex hurdle faced by PEN to commence Stage 1 of low pH operations is comparatively low, with transition costs of US\$5.3m and MU3 wellfield development of ~US\$9m. PEN could also potentially benefit from premium pricing if the Section 232 investigation outcome mandates import tariffs or US domestic quotas. This, coupled with comparatively low AISC for low pH ISR operations means PEN is positioned favourably throughout the cycle.

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## EURØZ

### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

# EURØZ

#### **Key Financials**

#### Currency

All PEN financials are reported in USD, unless otherwise stated. We have applied our LT AUD/USD FX rate of 0.75 to our Valuation conversions.

#### Balance Sheet (As at 31 March 2019)

PEN's key Balance Sheet items at the end of March Q 2019 were as follows:

Cash & Short-term investments: US\$9.6m, of which US\$6.4m is available cash.

Borrowings: US\$17m of drawn debt in the form of convertible notes.

#### **Convertible Notes**

The US\$17.0 million total loan amount comprises of a US\$8.44 million convertible loan provided by RCF VI, a US\$4.71 million convertible loan provided by Pala and a US\$3.85 million convertible loan provided by Collins Street. The convertible loans have the senior ranking security, subject to certain agreed carve-outs, over the assets of the Company located in Australia, the United States and the United Kingdom.

Under the terms of the Convertible Notes, the Lenders may elect to convert all or part of the principal amount of the Convertible Notes (including any capitalised interest) into fully paid ordinary shares at any time prior to maturity at a conversion price. On 20 April 2018, Peninsula announced that a variation of the terms of the Convertible Notes had been agreed whereby the maturity date was extended by 24 months to 22 April 2020 and the conversion price set at a fixed price of A\$0.40 per share. The Convertible Loans bear interest at the rate of 10% per annum for the first twelve-month period up until 22 April 2019 and then 12% thereafter, payable quarterly in arrears in cash or shares at the Company's election until 30 June 2019 and the Lenders' election thereafter. If interest is paid in shares, the share price to determine the number of shares issued will be the lower of A\$0.40 per share or the 20-day volume weighted average price (VWAP) of the Company's shares prior to the quarterly coupon dates.

**Euroz Securities Limited** 

### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

#### In-Situ Recovery (ISR)

In-situ recovery (ISR) is a method of extracting uranium from underground deposits without having to dig open pit or underground mines to physically remove the uranium-bearing ore.

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This technique involves injecting a mining solution, called a lixiviant, into the ground at specifically targeted depths and locations relative to the orebody. The solution consists of on-site ground water fortified with gaseous oxygen and is introduced to the orebody through a pattern of injection wells. The solution dissolves the uranium from the sandstone host and the pregnant solution, the uranium-bearing lixiviant, is then extracted through production wells back to the surface. This solution is then processed, typically using ion exchange (IX) resin which removes the uranium from the recovered lixiviant.

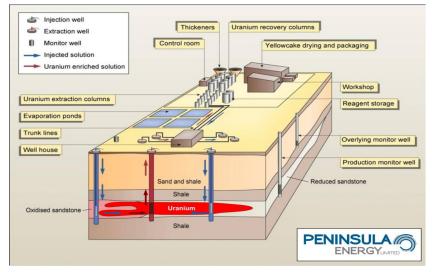


Figure 3: ISR schematic. Source: PEN

To guard against any migration of mining solution to areas outside the wellfield, there is typically a natural geological protection in the form of impermeable confining layers above and below the deposit. The entire wellfield is also surrounded by a series of perimeter monitoring wells that are placed into the aquifer to be mined, as well as into aquifers above and below to detect any migration of mining solutions outside of the orebody. Prior to mining, baseline water quality parameters are identified for the water within the aquifer to be mined.

ISR has some key advantages over conventional mining methods, such as open pit and underground mining. Firstly, ISR has a significantly lower environmental impact than traditional mining operations due to the minimal surface disturbance and the fact that affected water is restored to pre-mining standards at the conclusion of operations. Secondly, operating costs tend to be significantly lower as mining equipment is not required and personnel numbers are minimised. The lowest cost uranium producers globally are ISR operations.

#### Euroz Securities Limited

### (PEN: \$0.30) Speculative Buy, Initiation of Coverage

### Lance Uranium Projects (PEN 100%)

Peninsula's flagship asset is the Lance Uranium Project, located on the North East flank of the Powder River Basin in Wyoming, USA. The project is held in PEN's 100%-owned US subsidiary, Strata Energy Inc. and includes the Ross Central Processing Plant which is one of just three uranium in-situ recovery plants in operation in the US. The Lance Permit Areas comprise the Ross Permit Area, Kendrick Expansion Area and the Barber Expansion Area, with current mining limited to the Ross Permit Area. EURØZ

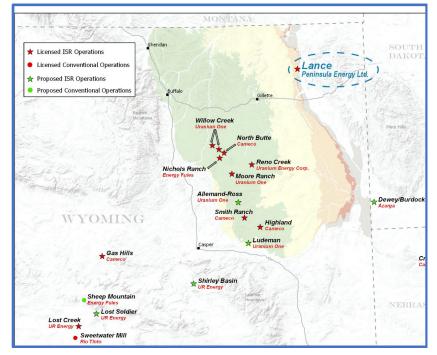


Figure 4: Lance Regional Setting. Source: PEN.

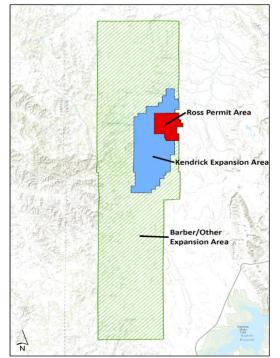


Figure 5: Lance Permit Areas. Source: PEN.

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In 2007, PEN acquired the mineral rights for the Lance Projects, as well as a proprietary database of 912km of historic drilling and pilot plant data. Since acquiring the assets, PEN has only partly explored the area but has already delineated a JORC (2012) Resource of 53.9Mlbs of U308, with significant exploration upside potential. The Lance Projects have 305km of identified roll fronts and an exploration target of 104-163Mlbs U308 suggesting mine life beyond the planned 17 years is probable.

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### **Resources and Geology**

The JORC-compliant Resource for the Lance Projects is 51Mt at a grade of 479ppm for a total of 53.9Mlbs U3O8. The Resource is located in host sandstones, with thickness of the production zone aquifer ranging from 30 to 55 metres at a depth to the top of the aquifer between 75 and 200 metres. Geological modelling of down-hole geophysical data has accurately defined impermeable shale and mudstone horizons above and below the mineralised sandstones.

Lance Projects Resource				
Classification	Tonnes (M)	Grade (ppm U3O8)	U3O8 (Mkg)	U3O8 (Mlb)
Measured	3.8	488	1.9	3.9
Indicated	10.9	495	5.4	11.9
Inferred	36.3	476	17.3	38.1
Total	51.0	479	24.5	53.9

Lance Projects Resource by	Permit Area			
Ross Permit Area	Grade (ppm U308)	mlbs U308	Avg. Thickness	Avg. GT
Measured	480	1.74	10	0.48
Indicated	490	2.63	9.8	0.48
Inferred	424	1.69	9.9	0.42
Total		6.07		
Kendrick Expansion Area	Grade (ppm U308)	mlbs U308	Avg. Thickness	Avg. GT
Measured	506	1.41	9.3	0.47
Indicated	496	6.86	9.4	0.47
Inferred	472	7.66	10	0.47
Total		15.93		
Barber Expansion Area	Grade (ppm U308)	mlbs U308	Avg. Thickness	Avg. GT
Measured	461	0.71	9.5	0.44
Indicated	400	2.42	9.8	0.39
Inferred	452	28.73	9.7	0.44
Total		31.86		
Total	Grade (ppm U308)	mlbs U308	Avg. Thickness	Avg. GT
Measured	489	3.86	9.9	0.46
Indicated	466	11.91	9.9	0.47
Inferred	463	38.09	9.5	0.42
Total		53.86		

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#### **Existing Operations**

Peninsula commenced a US\$35m development of the Lance Projects in late 2014 which included construction of the IX plant, seven wellfields and various support infrastructure. Initial production targeted 600klbpa from an alkaline head grade of 38mg/L. In December 2015, mining commenced after PEN received the United States Nuclear Regulatory Commission's (NRC) authorisation to begin alkaline ISR operations from the Ross Permit Area. EUR ØZ

Despite extensive lab test work and well field design experimentation, uranium recoveries were significantly lower than expected and, by mid-2016, PEN began investigating the cause. By mid-2017 PEN concluded that the orebody was not amenable to economic recovery of uranium via alkaline ISR and identified a low pH solution as a remedy. Early lab testing demonstrated double the uranium recovery with low pH solution which culminated in the release of a Low pH Feasibility Study in September 2018.

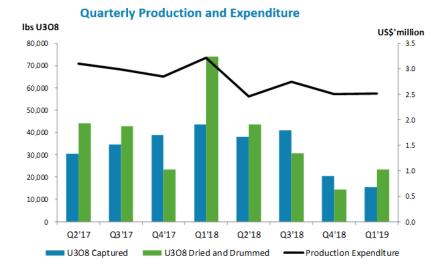


Figure 6: Existing Operational performance. Source: PEN

### Low pH Feasibility Study

The Lance Projects Low pH Feasibility Study outlined a 17-year operation with a three-stage production ramp up working towards an output of 3Mlbpa. Total LOM production is 33.4Mlb at an impressive LOM average AISC of US\$31.77/lb with the Company projecting a pre-tax NPV8 of US\$157m at US\$49/lb.

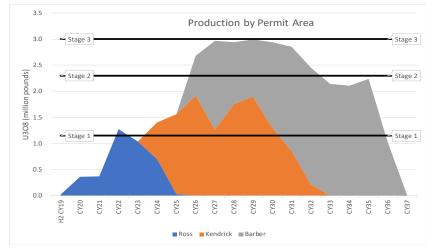


Figure 7: Lance Projects Production Profile. Source: PEN

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The following outlines the three stages in more detail:

#### Stage 1:

- Transition current facility to handle low pH solutions from 2019;
- Transition cost of US\$5.3m, with a ~US\$9m wellfield capex to commence Mine Unit 3;

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- Production capacity of 1.15Mlbpa;
- AISC US\$40.58/lb;

#### Stage 2:

- Expand current facility to double capacity to 2.3Mlbpa;
- Construction of elution systems and addition of precipitation and drying capacity;
- Addition of yellowcake capability on site eliminates need for current toll milling arrangements;
- Expected capex of US\$43.1m;
- AISC US\$31.52/lb;
- Approval required for wellfield operations at Kendrick Permit Area;

#### Stage 3:

- Construction of satellite plant at Barber Permit Area;
- Expand production capacity at Ross Central Processing Plant to achieve 3Mlbpa;
- Expected capex of US\$70.3m;
- AISC US\$30.36/lb;
- Approval required for wellfield operations and satellite plant at Barber Permit Area;

We are encouraged by the low capex hurdle required to commence Stage 1 of the low pH operations, particularly in the current uranium price environment. Management's approach to a longer-dated Stage 2 expansion is sensible, allowing sustained operational results to be measured before embarking on a more meaningful capital spend. We forecast a significantly stronger uranium price by 2023 when the next major capital hurdle is scheduled and therefore expect funding will be straightforward.

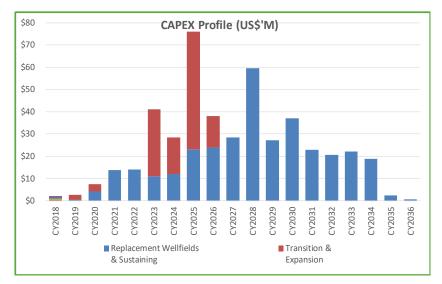


Figure 8: Project Capex Profile. Source: PEN, Euroz

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### Low pH Permitting

At present, all uranium ISR operations in the US use alkaline lixiviants, making Peninsula a modern pioneer of low pH ISR in the country. To commence the process, applications were made to amend the existing Permit to Mine (PTM) and Source Material License (SML). The PTM amendment was granted in March 2019 by the Wyoming Department of Environmental Quality (WDEQ), while the SML amendment review was completed in late April 2019. The SML amendment has completed its 60-day public review and the WDEQ will now make a final decision. We view a positive outcome as imminent given the favourable decision on the PTM.

### Field Leach Trials (FLTs)

As part of the transition to low pH ISR, PEN commenced a four-phase, twelvemonth Field Leach Trial (FLT) in December 2018. Three production patterns are being tested in Mine Unit 1 of the Ross Permit Area which was previously mined in alkaline conditions. The area previously achieved just 50% recoveries and we expect FLT results will be meaningfully higher under low pH conditions.

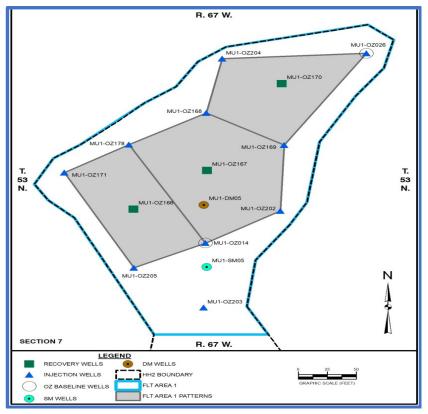


Figure 9: Test Pattern Map (in MU-1). Source: PEN

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The four phases of the transition are outlined below:

#### Phase 1 - Mining and Initial Restoration of Low pH

Phase 1 commenced in December 2018 following the approval of a nonsignificant revision to the PTM and the determination by a Safety and Environmental Review Panel that a low pH field demonstration could be conducted under the existing SML. The low pH field demonstration will consist of a mining stage and an initial restoration stage. EURØZ

A key objective of the mining stage of Phase 1 is the successful lowering of the local mining zone pH level to the targeted level (approximately 2.0 standard units) without compromising the ability to move lixiviant through the mining zone.

During the restoration stage of Phase 1 the aim is to return the pH level in the mining zone to 5.0 standard units or above, a range where industry standard restoration techniques can be utilised. The restoration stage of Phase 1 is expected to commence imminently.

#### Phase 2 - Commencement of Commercial Scale Operations (MU1 and MU2)

Phase 2 is the commencement of commercial-scale low pH operations throughout previously operated areas of Mine Units 1 and 2. Phase 2 can commence upon granting of the SML amendment request which we expect is imminent.

The restoration stage of the Phase 1 low pH field demonstration runs in parallel with Phase 2 and continues into Phase 3.

## Phase 3 – Field Scale Groundwater Restoration in Low pH Field Demonstration Area

Phase 3 consists of a field scale groundwater restoration demonstration within the low pH field trial area, building upon the initial Phase 1 restoration activities. Field scale restoration is intended to restore the water quality in the mining zone to specified criteria. Following this field scale groundwater restoration, Strata will submit an Interim Restoration Report for review and approval, expected toward the end of 2019.

## Phase 4 -Commencement of Commercial Scale Operations (New Mine Units in Ross Permit Area)

Upon approval of the Interim Restoration Report, the Company can advance to Phase 4 of the implementation plan and commence the use of low pH lixiviants in all future new wellfield units within the Ross Permit Area. Commencement of operations in any new mine unit is subject to the normal WDEQ review and approval of the wellfield data packages, which is the same process for new mine units that is required under the existing alkaline permits and licences. Commencement of the development of new mining units within the Ross Permit Area (ie, Mine Units 3 and 4) can be done under the existing permits and licenses held by the Company and may commence in advance of the low pH regulatory amendments and finalisation of the low pH field demonstration.

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#### Sales Agreements, Contracts & Sales Outlook

Peninsula currently has uranium delivery contracts with utilities in the US and Europe for up to 6.3Mlbs of U3O8 out to 2030 at a weighted average price of US\$51-53/lb. Of the 6.3Mlbs, 4.5Mlbs are already committed, with the remaining 1.9Mlbs being optional at the election of the customer for delivery between 2021 and 2026. These contracts represent about 20% of planned future production from the Lance Projects, allowing PEN to achieve a predictable revenue stream whilst maintaining exposure to a rising uranium price above these contract levels.

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As Lance operations transition to low pH ISR, we estimate the low output volumes result in current AISC meaningfully higher than US\$50/lb, making operations loss-making under existing contracts. Fortunately, PEN has negotiated the ability to partially fill these contracts with spot material purchases which, in the current low spot price environment, allows a profitable arbitrage trade while production is curtailed. The Company has recently contracted to purchase 225klbs in 2019/2020 at US\$23.69/lb which we estimate generates US\$2-4m in profits.



(\*) Committed deliveries only and excludes optional delivery quantities that customers may elect from 2021 onwards.

Figure 10: 5 year Sales Profile. Source: PEN

We expect this arbitrage to be profitable for PEN until operations are successfully converted to low pH ISR that should reduce production costs below existing contract pricing. We forecast spot uranium prices will be above PEN's contract pricing by 2021 which will close the current arbitrage opportunity, however profitable mine production at that stage will offset the loss of that profit-stream.

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#### **URANIUM MACRO**

Peninsula offers a leveraged option on a recovery in the uranium price with 80% of the planned life of mine production exposed to spot price. Despite uranium being one of the strongest performing commodities in 2018, up 24%, so far in 2019 the uranium price has given up more than 50% of its gains.

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The recent rise, and subsequent fall of uranium prices has primarily been driven by the closure or curtailment of uranium mines that has led to traditional producers buying in the spot market to fill contraction obligations, as PEN is currently doing. Notable has been Cameco's large volume spot purchasing in 2018 which has yet to return in 2019, a meaningful driver of the uranium spot price. A number of funds were also established in 2018 specifically targeting spot market purchases, another driver of pricing that has dried up in 2019 thus far.

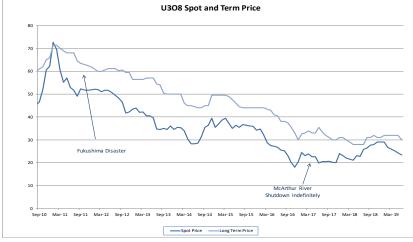


Figure 11: Uranium Price Performance Source: Euroz

To-date, meaningful end user purchasing has been absent from the market, suggesting recent price behaviour has been artificial, rather than fundamental. This is evidenced by the relatively flat contract market pricing at a time when spot prices have fluctuated. A significant increase in contracting activity should build and sustain a uranium price rally.

A key driver behind the dearth of utility recontracting has been then uncertainty faced by US utilities stemming from a Section 232 investigation into US uranium imports. We believe, however, that an outcome is imminent and that contracting should commence in earnest toward the end of 2019. The US Department of Commerce (DOC) has completed its investigation but has not publicly released its recommendations. President Trump has until July 14th to decide on what actions to take as a result of the investigation findings.

The original petition, filed by two US uranium producers, sought a 25% quota on US-sourced uranium, however President Trump has free range on what action, if any, he takes. US uranium consumption is the largest globally at 50Mlbpa, with 99% of this currently being imported. We estimate that the US producers would be unable to supply the 25% being sought and expect a moderation of this number as a likely outcome. Ultimately, we expect this would lead to a bifurcated uranium market, with US domestic production receiving premium pricing versus rest of world production. This bodes well for PEN, particularly if low pH ISR operations meet expected performance and costs, placing the Lance Projects in the lower half of the cost curve.

Longer term, we see a significant reactor build in China and India as driving a strong demand side of the market. China has recently confirmed the approval of four Hualong One reactor builds and restated its aim of 6-8 new reactors per year to achieve nuclear capacity of 120-150 GWe by 2030. This program alone more than exceeds likely ageing reactor shutdowns in the US, France and South Korea, adding to our bullish view of uranium long-term.

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#### **Risks**

Peninsula has a well-defined asset in a stable uranium mining jurisdiction. The key risks to our investment are largely market and commodity price risks, with some risks attributed to the performance of low pH ISR.

**Social License** – low risk. Wyoming is a stable and supportive uranium mining jurisdiction and we foresee limited risk in obtaining the final Source Material License amendment to commence low pH ISR.

**Operational Execution** - low to medium risk. Extensive test work and ongoing Field Leaching Trials (FLTs) have improved understanding of the deposit's performance in a low pH environment. Previous mining has proven flowrates through the sandstone however the risk now is to achieve expected head grades. Timely delivery of the three-stage project within budget remains a risk.

**Commodity Price** – low to medium risk. Uranium has been in a strong bear market since 2011. With prices at a fundamental low, meaningful supply curtailment and demand increasing, we see very little downside risk to the uranium price. PEN also has some LT contract protection.

**Funding** – low to medium risk. Stage 1 requires modest funding, with meaningful capex increases for subsequent stages. If uranium prices meet our forecasts we expect that Lance will have minimal funding risks given jurisdiction and low opex of the project. We have assured debt, equity and cash financing at key capex hurdles.

Market Risk - General Market Risk

247.16m
0.38m
1.95m
2.98m
22.5m
27.81m
274.97m
\$82m
\$9m
\$23m
\$97m
\$0.155- \$0.34/sh
\$0.2m/day

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#### **Directors & Management**

#### John Harrison, Non-Executive Chairman

Mr Harrison brings to Peninsula a wealth of broking and corporate finance experience acquired over a 45-year career, including 20 years of investment banking in London. During this time, Mr Harrison developed an extensive international contact base advising companies across a range of commodities (including uranium), as well as related engineering and service businesses, in both an M&A and Equity Capital markets context. He acted for numerous companies quoted on the Main List and the Alternative Investment Market of the London Stock Exchange, as well as the Australian, Johannesburg and Toronto Exchanges. During his investment banking career, Mr Harrison was the Managing Director at Numis Securities in London in charge of the Corporate Finance resources sector and subsequently, UK Chairman of specialist Anglo-Australian resources advisory and broking business RFC Ambrian. He was founding Chairman of UK coking coal development company West Cumbria Mining Ltd and is currently a Non-Executive Director of that company. He is also a Non-Executive Director of Newscape Capital Group Ltd, a diversified UK fund management and advisory group based in St James, London.

#### Wayne Heili, Managing Director/Chief Executive Officer

Mr Heili has spent the bulk of his 30-year professional career in the uranium mining industry. He most recently served as President and Chief Executive Officer of Ur-Energy, Inc. where he successfully oversaw the design, construction, commissioning and ramp-up of the Lost Creek in-situ uranium project in Wyoming USA. Prior to joining Ur-Energy, Inc., Mr Heili served as Operations Manager of the Christensen/Irigaray in-situ uranium mines in Wyoming and has experience on conventional uranium mines in Texas. He holds a Bachelor of Science in Metallurgical Engineering from Michigan Technological University and is a past President of the Uranium Producers of America.

#### Harrison (Hink) Barker, Non-Executive Director

Harrison (Hink) Barker retired 1 June 2015 from the Generation segment of Dominion Resources with over 40 years of fossil and nuclear fuel commercial and technical responsibilities. Since 1992, Mr Barker had been the manager responsible for Dominion's procurement of nuclear fuel and the related processing steps of conversion from U3O8 to UF6, enrichment of UF6, and fabrication of nuclear fuel assemblies. He is a former Chair of the Nuclear Energy Institute's Utility Fuel Committee, and a past member of the World Nuclear Fuel Market Board of Directors (Chairman for two years). He served on an Advisory Board to American Uranium Corporation while they attempted to develop the Wyoming Reno Creek uranium deposit. From 1975 to 1984 he worked as an engineer and supervisor in the areas of nuclear fuel quality assurance, nuclear core design, nuclear fabrication contract administration, nuclear fuel procurement, spent fuel transportation and disposal planning during a period when Dominion was building its regulated nuclear operating fleet in Virginia. Mr Barker holds a Bachelor of Science degree in Electrical Engineering and a Masters in Nuclear Engineering Science both from the University of Florida.

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#### Mark Wheatley, Non-Executive Director

Mr Wheatley is an experienced resources company CEO, Non-Executive Director and Chairman with a career spanning more than 30 years in mining and related industries. He has worked in the uranium industry since 2003 and been involved in ISR project exploration, feasibility studies, start up, production, rehabilitation and closure. His uranium experience includes the roles of Chairman and CEO of Southern Cross Resources Inc., the operator of the Honeymoon ISR uranium project, Non-Executive Director of Uranium One Inc. and Uranium Resources Inc. His other board roles have previously included Non-Executive Chairman of Xanadu Mines Ltd, Gold One International Ltd, Goliath Gold Mining Ltd, Norton Gold Fields Ltd and directorship of St Barbara Ltd. EURØZ

#### David Coyne, Finance Director/Chief Financial Officer

Mr Coyne has over 25 years' experience in the mining, and engineering and construction industries, both within Australia and internationally. Prior to joining Peninsula, Mr Coyne held senior executive positions with Australia listed companies Macmahon Holdings Limited and VDM Group Limited, and with unlisted global manganese miner Consolidated Minerals. Over the past 10 years, Mr Coyne has been directly involved in a number of equity and debt raising transactions and has been the project director on a company-wide systems implementation project. Mr Coyne has previously served on the Board of listed iron ore miner, BC Iron Limited, where he also held the role of Chairman of the Audit and Risk Committee.

Director Shareholdings		
Director	Shares	Options
John Harrison	20,000	287,849
Wayne Heili	1,214,374	900,000
Hink Barker	nil	234,737
Mark Wheatley	103,852	245,000
David Coyne	869,702	450,000

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#### **Top 20 Shareholders**

	Shareholders	Shares	Held(%)
1	HSBC CUSTODY NOMINEES (AUSTRALIA) LIMITED	29,790,150	12.22%
2	MERRILL LYNCH (AUSTRALIA) NOMINEES PTY LIMITED	23,616,501	9.69%
3	J P MORGAN NOMINEES AUSTRALIA PTY LIMITED	18,974,738	7.78%
4	CITICORP NOMINEES PTY LIMITED	12,841,509	5.27%
5	BNP PARIBAS NOMS PTY LTD	6,084,495	2.50%
6	NATIONAL NOMINEES LIMITED	5,924,816	2.43%
7	TEN LUXTON PTY LTD	5,000,000	2.05%
8	UBS NOMINEES PTY LTD	4,939,484	2.03%
9	BNP PARIBAS NOMINEES PTY LTD	4,303,171	1.77%
10	ILWELLA PTY LTD	4,000,000	1.64%
11	SGK HOLDINGS (AUST) PTY LTD	2,637,868	1.08%
12	RYNOBRONBELLA PTY LTD	2,508,761	1.03%
13	ILWELLA PTY LTD	2,500,000	1.03%
14	SOMTAJ PTY LTD	2,413,554	0.99%
15	INKESE PTY LTD	2,050,000	0.84%
16	ILWELLA PTY LTD	1,812,910	0.74%
17	CCP TECHNICAL LIMITED	1,537,189	0.63%
18	HSBC CUSTODY NOMINEES (AUSTRALIA) LIMITED	1,384,218	0.57%
19	WASHINGTON H SOUL PATTINSON & COMPANY LIMITED	1,100,000	0.45%
20	MR GREGORY JOHN MCAULIFFE	1,010,000	0.41%
	Top 20 total	134,429,364	55.15%

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