

# Advance Energy

## MARKET DATA

Bloomberg	ticker	ADV LN
Share price	p/shr	2.4
Target	p/shr	8.0
TP upside	%	233%
Shares out	Million	1,027.6
Fd shares	Million	1,182.0
Mkt cap	US\$m	34.5
EV	US\$m	6.9

## RECIPE FOR SUCCESS

**Advance Energy** is an AIM listed E&P with a 50% stake in the Buffalo oil field offshore Timor Leste. Having recently raised US\$30m, the company is funded to drill a low risk and high impact appraisal well alongside partner and operator Carnarvon Petroleum on the field later this year. Buffalo is a prolific field which produced around 21 mmbbls at peak rates of c.50,000 bopd in the early 2000s, before it was decommissioned due to a combination of low oil prices and FPSO facilities incapable of handling rising water cut. A redevelopment at today's oil prices however is highly commercial. Based on the CPR assumption of 34 mmbbls remaining unswept, at US\$60/bbl Brent prices we value a redevelopment in excess of US\$200m (>12p/shr) unrisks, net to Advance.

**Large proven resource base:** For a brownfield development Buffalo has substantial remaining potential. To date the field has recovered under 20% of the estimated 106 mmbbls oil initially in place, in sharp contrast to local analogues which have produced in excess of 60%. In its mid-case, independent auditor RISC estimates ultimate total recovery at 52%, meaning gross remaining potential of 34.3 mmbbls (2C).

**Audited probability of appraisal well success 95%:** Advance plans to reinstate production from Buffalo, the first step being the drilling a new appraisal well, Buffalo-10. Given that this new well will be drilled into a known highly productive reservoir, RISC has estimated a 95% chance of success on the well, contributing to an overall probability of development at 86% (which also accounts for commercial factors). This is supported by scoping discussions with several project lenders which have indicated support in principle for development finance.

**Attractive valuation:** Based on Carnarvon's preliminary field development plan, Advance's 50% stake will yield peak net production of c.19,000 bopd, with annual net cash flow of c.US\$187m at US\$60/bbl Brent, and over US\$200m at US\$65/bbl. This leads to impressive project IRRs of 106% at US\$60/bbl oil. We value barrels in the ground at US\$12.2/bbl, implying net unrisks value of US\$209m (12.6p/shr). After accounting for corporate adjustments and project risks (factoring in future dilution etc.) this leads to a risked Total NAV of 8.0p/shr – over 3x the current share price.

**Major near-term catalysts:** Buffalo provides Advance with exposure to a major drilling event, due in Q4 this year. As an appraisal of an existing discovery, this well is far more likely to succeed than fail (a 95% chance according to the CPR). Furthermore, the productivity of the reservoir and light grade of oil should yield impressive indicative flow rates, anticipated at up to 20 kbopd per well. These events should provide the foundation for unlocking commercial reserves and development finance for the project.

**Figure 1: Buffalo key statistics at US\$60/bbl flat, net to Advance**

		50% WI
Net 2C resources	mmbbls	17.15
Peak net production	bopd	18,795
Peak annual NCF	US\$m	187.2
IRR	%	106%
Field payback	months	<6 months
<b>NPV10 (unrisks)</b>	<b>US\$m</b>	<b>208.9</b>
	<b>p/shr</b>	<b>12.6</b>

Source: RISC, Tennyson Securities.

## ANALYST

**Tim Hurst-Brown**  
+44 (0) 20 7186 9038  
tim.hurst-brown@tennysonsecurities.co.uk

**James Midgley**  
+44 (0) 20 7186 9037  
james.midgley@tennysonsecurities.co.uk

## SALES

**Pav Sanghera**  
+44 (0) 20 7186 9036  
pav.sanghera@tennysonsecurities.co.uk

**Guy Wheatley**  
+44 (0) 20 7186 9034  
guy.wheatley@tennysonsecurities.co.uk

**Jason Woollard**  
+44 (0) 20 7186 9035  
jason.woollard@tennysonsecurities.co.uk

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## 1 CORPORATE OVERVIEW

Advance Energy was established early last year with a remit to acquire or farm into non-operated interests in oil and gas projects offering the potential to add significant value over the short to medium term. The company is headed by CEO Leslie Peterkin, who has a long CV including senior roles at the likes of Woodside, Shell and MOL, alongside Chairman Mark Rollins, a former senior executive at BG Group and CFO Stephen West (ex. PetroNor). Combined, the Directors currently own over 6.5% of the company.

### 1.1 BUFFALO TRANSACTION

The company secured its first acquisition late last year through a farm-in for a 50% stake in the Buffalo redevelopment project offshore Timor-Leste in SE Asia. Advance agreed to a 2-for-1 carry with operator Carnarvon (which holds the balancing interest) – effectively paying 100% of the costs of the drilling of an appraisal well (US\$20m, gross), in return for a 50% stake. In the likely success case, Advance will also arrange funding for the full development costs. A substantial portion of this (c.70%) is expected to be covered by debt finance, to which end preliminary discussions have already commenced, and the balance through industry finance, vendor/offtake finance or equity. Importantly, any equity component of the development costs will be in the form of a loan to the project, meaning that Advance would benefit from 100% project returns while the development pays back.

The transaction constituted a reverse takeover under LSE listing rules, and as such shares were suspended from trading on the announcement of the deal (17 December 2020) until the publication of the admission document (31 March 2021). During suspension, the company successfully raised US\$30m – the top end of the stated US\$15-30m target. The funds will pay for Advance's share of the Buffalo well cost, which has an AFE budget of US\$20m, as well as a provision for unanticipated cost over-runs and sufficient working capital to fund the company through to a final investment decision on Buffalo.

### 1.2 CORPORATE STRATEGY

Once onstream, the Buffalo project generates substantial levels of free cash flow (187m net to ADV, at US\$60/bbl during the first full year of production). This provides optionality with respect to the redeployment of capital. We expect an element of shareholder returns, however the company will continue to utilize its experience and relationships to add new assets to the portfolio and redeploy capital.

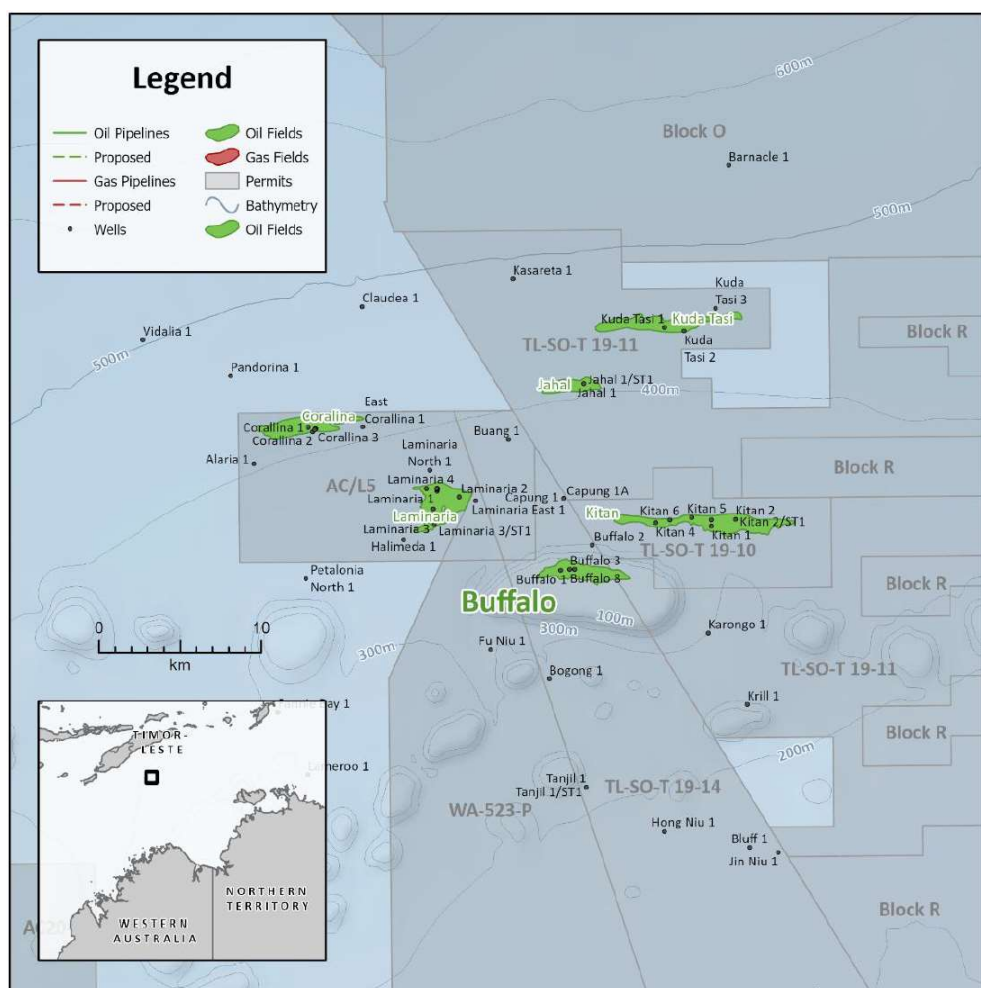
In terms of timing of new assets, we understand that the company is looking at assets which can be brought into the portfolio in the near term with no upfront consideration (i.e. no dilution for equity holders). We wouldn't expect any larger transaction – for example one requiring additional equity funding – to be considered at least until the results are known from Buffalo-10.

## 2 ASSET OVERVIEW

The Buffalo field is situated in the Timor Sea off the northern coast of Australia. Lying in the Bonaparte Basin, Buffalo is surrounded by a cluster of developed oil fields, including Laminaria and Corallina which lie c.10km to the north-west (see Figure 2).

Buffalo was originally classified as being in Australian waters, and accordingly was developed under an Australian licence. Following the ratification of the Maritime Boundary Treaty in 2019 however, the PSC now lies wholly in Timor-Leste.

Figure 2: Bonaparte Basin oil fields



Source: RISC

Buffalo was discovered in 1996 by Australian major BHP, with the discovery well encountering a 45 metre light oil column within high quality sands. The reservoir is regionally one with very high permeability, which contributed to flow rates in excess of 20,000 bopd per well, and in addition there is a strong regional aquifer that provides for high recovery factors. The discovery was swiftly developed, with BHP achieving first oil by the end of 1999, 15 months from FID.

The facilities were originally developed to handle fluid flow rates of c.50,000 bopd. While this was sufficient in the field’s early life, rising water cut meant that oil production declined sharply, with the operator unable to increase gross fluid production rates in order to maintain levels of oil production. Water ingress occurred sooner than anticipated, in large part due to

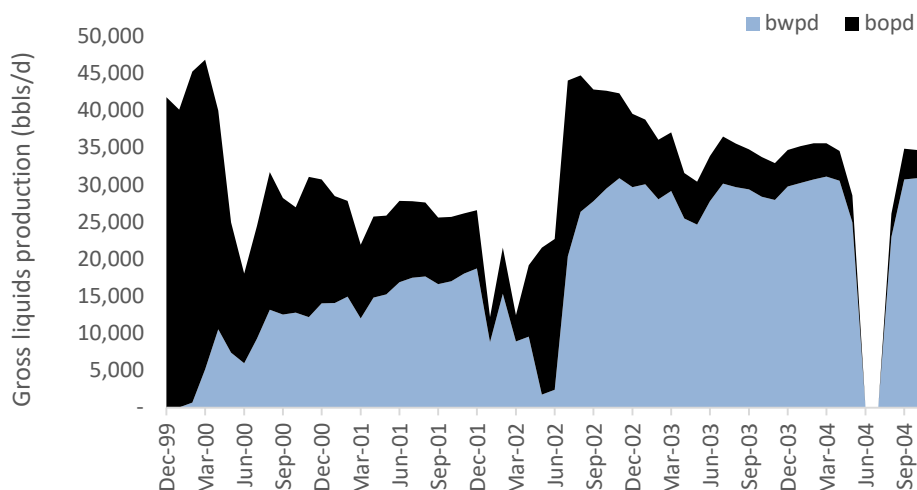
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non-optimal well completion strategy, with perforations too close to the oil-water contact. This led to a change of operatorship in 2000, as Nexen acquired 100% equity and assumed operatorship. This triggered fresh investment, with a new well drilled into an attic structure in 2002 helping oil production rise again above 20 kbopd. The continuing rise in water production however (in blue in Figure 3), stifled oil production with facilities still incapable of processing any more than around 40,000 bbls/d.

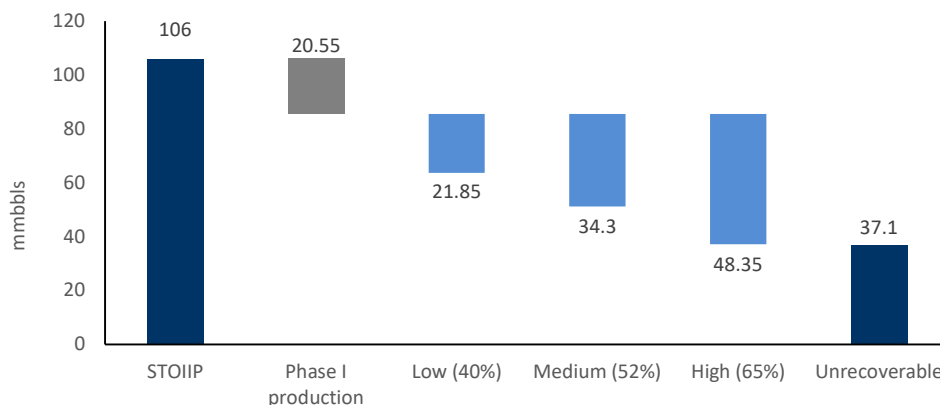
**Figure 3: Buffalo historical production profile, water (blue) & oil (black)**



Source: RISC

The field was decommissioned in 2004 at relatively healthy flow rates of c.4,000 bopd and having produced just 20.5 mmbbls of the initial 106 mmbbls of oil initially in place. Importantly, despite the naturally declining oil production rates, reservoir pressure did not decline significantly over the field’s life, implying that the field benefits from a particularly strong aquifer drive. This, combined with the excellent quality reservoir sands and high crude grade, imply that very high ultimate recovery factors should be possible. The adjacent and analogous Liminaria-Corallina fields have produced over 60% of oil originally in place, which at equivalent recovery factors would imply over 40 mmbbls remaining at Buffalo (based on the mid-case STOIIP of 106 mmbbls and 20.55 mmbbls recovered to date).

**Figure 4: Buffalo recoverable resources at 40%, 52% and 65% recovery factors**



Source: RISC, Tennyson Securities

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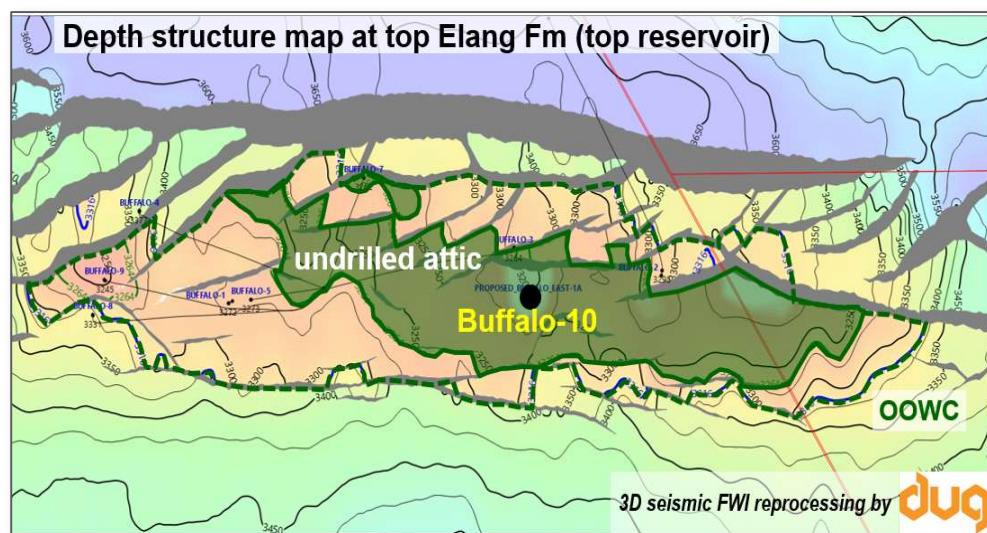
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Carnarvon acquired the licence during a permitting round in 2016 and, recognizing the significance of seismic to the success of Buffalo, committed to a work programme including 3D seismic reprocessing and a single well to be drilled by May 2023.

Historically a major issue in the region related to the quality of seismic, predominantly due to the thick and cavernous overlying carbonate reef. This reef complicates seismic processing, and often resulted in inaccurate modelling of the subsurface, as evidenced by a number of wells drilled by BHP missing the structure entirely (e.g. wells Buffalo-2 and Buffalo-4) and those drilled by Nexen not delivering on expectations. The past decade or so has seen monumental improvements in seismic processing, driven by technological advances, in particular computer processing power.

Carnarvon re-processed the 1996, 1997 and 2008 vintage 3D seismic data over the course of 2016 and 2017, integrating with the log data from multiple wells to form a detailed subsurface model. PSDM and Full Waveform Inversion work in particular helped Carnarvon build a more accurate structural model for Buffalo, which show a large attic area which has yet to be drilled (see Figure 5, below).

**Figure 5: Buffalo field reservoir**



Source: Advance Energy

## 2.1 DEVELOPMENT PLAN

The development plan envisages a simple three well tie back to a floating storage vessel via a wellhead platform or mobile production unit (MOPU). Importantly, the facilities are being designed to handle far higher fluid flow rates than the original BHP development, with its nameplate capacity of 75,000 bbls/d, or more, including at least 40,000 bopd oil capacity, allowing production to continue at commercial rates later in the field's life. The facilities will likely be leased, which has a number of advantages. Firstly, it reduces the upfront capex required to reach first oil, and secondly, under the terms of the PSC operating costs can be recovered in the year incurred, which improves the returns to the contractor.

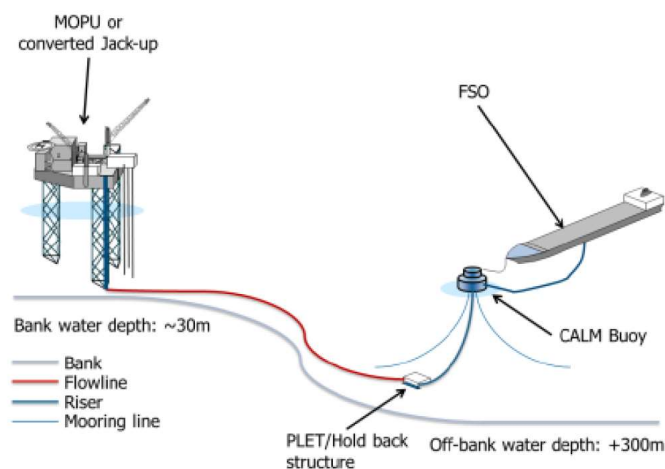
The high nameplate capacity and prolific reservoir will allow the Buffalo partners to maximise cashflow in the early years, with more than 60% of the total production expected to be extracted in the first two years. The development wells will be either deviated or horizontal, which will maximise flow rates (initial rates of up to 20,000 bopd per well) and, with the strong aquifer in mind, will allow for the most efficient drainage of the field.

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**Figure 6: Buffalo field development plan**

Source: RISC

## 2.2 FORWARD WORK PROGRAMME

In preparation for drilling in H2 this year, Carnarvon has already awarded the drilling management services contract to Petrofac, and has initiated the tender process to secure a rig. The reservoir itself is at a depth of just over 3,000m, but lies in very shallow water (c.25m), meaning that a relatively inexpensive jack up rig is sufficient.

The appraisal well, Buffalo-10, is being designed as a vertical well, which will pass through a previously unpenetrated crest (of the proven Elang reservoir – see Figure 5 above). The well is also designed to be sufficiently deep to establish the current oil water contact. This will provide valuable information as to the homogeneity of the reservoir and de-risk the ultimate recovery factor estimates.

The well is expected to take in the region of 27 days to reach total depth and conclude evaluation logging. A full production test will be unnecessary given the extensive reservoir data available from the past. On completion, the well will be suspended in preparation for development drilling. On full development, the appraisal well will be re-entered, with a horizontal sidetrack kicking off and running along the top of the reservoir section.

In terms of timing, we expect the well to spud in early Q4, implying initial drilling results in November. These results will allow for Advance to book commercial reserves which in turn should unlock development finance for the project. We expect FID in early 2022.

## 2.3 FUNDING AND VALUATION

The recent US\$30m equity raise will cover Advance's share of drilling expenses (US\$20m), as well as provision for cost overruns and working capital to comfortably see the company through to FID on the project.

In terms of development costs, we expect a substantial portion of the remaining c.US\$125m (gross) costs to be debt funded. To this end, we understand that Advance has already had scoping discussions with several potential lenders (including traditional RBL lenders and oil trading houses), which have indicated strong levels of demand.

For prudence our model is ungeared, however we would expect that as much as 70% of the gross development costs will be debt funded. Advance has committed to arranging the

finance for the balancing c.US\$35-40m of equity required, which is likely to be in the form of debt to the project, which can be fully recovered from 100% of field cashflow until paid back.

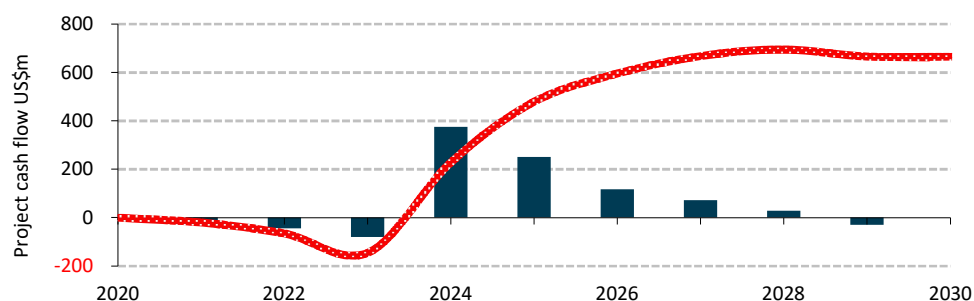
We have modelled a development scenario assuming the CPR audited 2C resource base of 34 mmbbls. We have assumed peak production of just under 40,000 bopd (gross) in year one, with the resource drained over the course of five years. Leasing costs will account for the bulk of operating expenses, and we have assumed a day rate of US\$165k/d all-in, implying annual fixed costs of US\$60m and equivalent to US\$8.8/bbl over the life of the field. We have assumed first oil by the beginning of 2024.

The quality of the crude at Buffalo is high, with the API grade in excess of 50°. Accordingly, we would expect Advance to receive a premium price to Brent. To account for marketing fees and for conservatism however, our model assumes crude is sold from the FPSO at par.

The fiscal regime in Timor-Leste is attractive. The licence is held under a production sharing contract with the contractor entitled to 65% of profit oil. There is a flat 5% royalty rate. After costs are recovered, we calculate a total government take of just 45%.

Based on a flat oil price assumption of US\$60/bbl, during the first full year our model suggests gross annual cash flow of c.US\$375m net to the contractors (US\$187m net to 50% interest). Due to its exceptional reservoir productivity, the field cash flows decline relatively sharply, with all c.US\$840m of project cash flow recovered over a five-year period (see contractor cash flow profile in Figure 7). This results in an impressive project IRR of 106%, with gross NPV10 of US\$418m (US\$12.2/bbl). At 50% interest, this is worth c.US\$209m unrisks, or 12.6p/shr net to Advance.

**Figure 7: Buffalo project cashflow (gross)**



Source: Tennyson Securities

Our NPV includes a geological risking of 95% as well as a commercial risking of 50% predominantly to account for future dilution in raising the US\$35-40m of equity to finance the full development. After accounting for cash, and proceeds from the exercising of near-money options and warrants, we calculate a risked Total NAV of US\$132m, or 8p/shr.

**Figure 8: NAV table**

	Gross mmboe	Interest %	Net mmboe	US\$/boe	Unrisks		CoS	Risked	
					US\$m	p/shr		US\$m	p/shr
Buffalo	34.3	50%	17.2	12.2	208.9	12.6	48%	99.2	6.0
Net cash (debt)					27.6	1.7		27.6	1.7
Options & warrants proceeds					5.6	0.3		5.6	0.3
<b>Total NAV</b>	<b>34.3</b>		<b>17.2</b>		<b>242.1</b>	<b>14.6</b>		<b>132.4</b>	<b>8.0</b>

Source: Tennyson Securities

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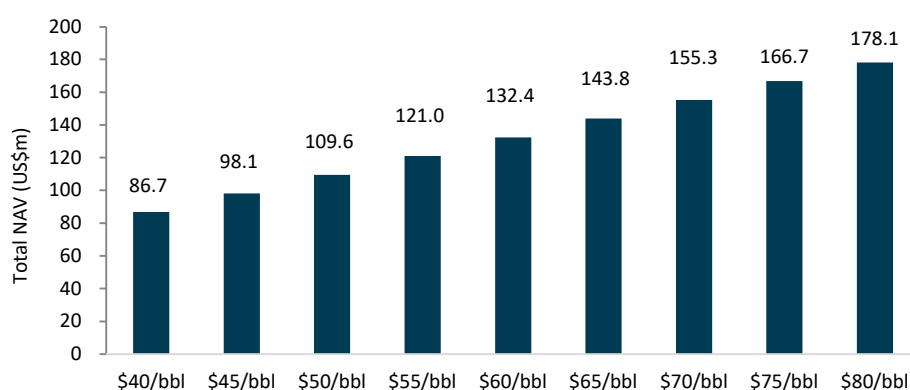
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## 2.4 SENSITIVITY ANALYSIS

Naturally, with the early year cash flow and project IRRs so high, two key variables in our model to which Buffalo is most sensitive include peak production and oil price.

Our model shows Buffalo remaining robust at very low oil prices, with a project breakeven price of US\$18/bbl. From our base case of US\$60/bbl however, oil price increases and decreases impact our NAV in a broadly linear fashion. Essentially, each US\$5/bbl move deducts, or adds slightly over US\$10m to our Total NAV. Therefore, at current Brent levels of around US\$66/bbl, our Total NAV would rise to just over US\$146m (8.8p/shr). Conversely, a reduction in Brent oil prices to around US\$55/bbl would reduce Total NAV to just over US\$120m, or 7.3p/shr.

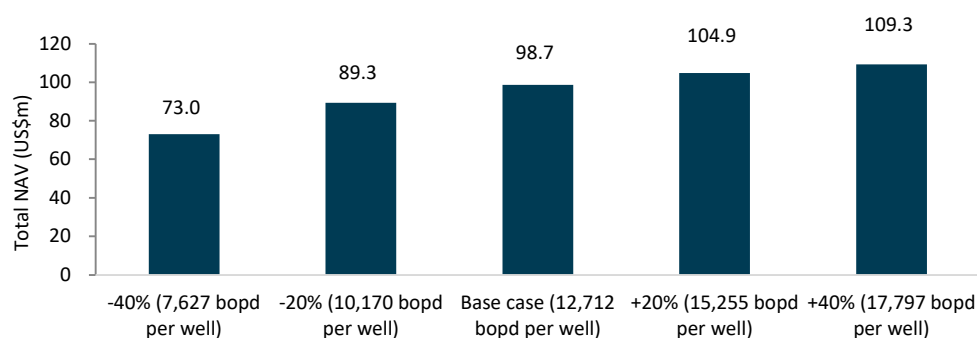
**Figure 9: Advance Energy NAV sensitivity to Brent Oil prices**



Source: Tennyson Securities

The predominantly fixed operating costs also makes any increase or decrease in production directly impact profitability, assuming that capital costs are unaffected (i.e. the same number of wells are required for the project). Our model assumes three development wells produce a combined 38 kbopd at peak (annual average). Simplistically, this implies that each well averages just under 13,000 bopd. The chart in Figure 10 shows the sensitivity to production rates per well (which we assume is directly linked to the ultimate recoverable volumes). Even at peak rates of just 7,627 bopd per well (declining thereafter), i.e. 40% lower than anticipated, the project is robust, with an NPV10 of US\$73m net to Advance (at US\$60/bbl oil). Should the wells produce more than expected, for example 40% more at around 18 kbopd per well, the NPV10 rises to US\$109m, net to Advance. On our numbers the project breaks even at a peak field production rate of just over 10 kbopd, or around 3,500 bopd per well.

**Figure 10: Advance Energy NAV sensitivity to reservoir productivity, at 50% interest**



Source: Tennyson Securities

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## BOARD AND MANAGEMENT

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### **Mark Rollins, Non-Executive Chairman**

Mark was until recently Chairman and CEO of Ukrnafta, the publicly-listed company responsible for a significant proportion of oil production in Ukraine, with over 20,000 employees. Between 2008 and 2015, he was a senior executive at BG Group plc, the former international E&P company; his final positions being Senior Vice President within the COO's office and managing BG's interests in Kazakhstan. His other experiences have included senior leadership positions across international E&P, midstream and downstream oil and gas, and deregulated utility sectors. Beginning his career as a Petroleum Engineer with Shell International, Mark holds a doctorate in Engineering Science from Oxford University, as well as a Masters in Mathematics from Cambridge University.

### **Leslie Peterkin, CEO**

Leslie has served the E&P sector during the past two decades as a senior Interim Manager and Advisor, initially in Australasia and more recently, based in Geneva, covering Europe, MENA, Central Asia and Africa. Key roles were as Woodside's Director Browse LNG Development and MOL's SVP Operations & Development. He entered the sector joining Shell International's Petroleum Engineering stream in the early '80s with a variety of international postings. A decade with international independent oil companies followed and exposed him to both General Management and M&A, of which the latter has formed an important aspect of his ongoing E&P activities. Leslie's career has been defined by the ability to transform development assets and their values. He studied Physics at St. Andrews University, where a 1st Class Honours was followed by a PhD.

### **Stephen West, CFO**

Stephen holds a Bachelor of Commerce (Accounting and Business Law) and is a highly experienced Fellow Chartered Accountant (CA ANZ) and CA (ICAEW) with over 26 years of financial and corporate experience gained in public practice, oil and gas, mining and investment banking. Stephen has held several senior positions in oil and gas, and mining companies including most recently at PetroNor E&P Limited (OSE: PNOR) where he was Executive Director and Chief Financial Officer until his resignation in February 2020 after being instrumental in the successful US\$100 million merger of African Petroleum Corporation Ltd and PetroNor E&P Limited in August 2019 and the subsequent integration of the two companies. He is co-founder and current Non-Executive Chairman of Zeta Petroleum. Prior to 2002 Stephen worked in the banking sector including Barclays Capital London where he managed Global Finance Projects.

### **Ross Warner, Non-Exec Director**

Ross is a lawyer and experienced company director of both private and public resource companies listed on AIM and the Australian Securities Exchange. He has also held senior corporate roles with Mallesons Stephen Jaques in Australia and Clifford Chance in the UK. He is currently Executive Director of Zarmadan Gold Ltd and has previously been chairman of Uranium Resources plc and Northcote. He holds a Bachelor of Laws from University of Western Australia, and Master of Laws, University of Melbourne.

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### RECOMMENDATIONS HISTORY

**Market index** : FTSE AIM ENERGY

Date	Market Index level	Share Price (p)	Target Price (p)	Opinion
20/04/2021	1,592	2.4	8.0	BUY

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65 Petty France, London SW1H 9EU | [www.tennysonsecurities.co.uk](http://www.tennysonsecurities.co.uk)