Georgina Energy

GEX-GB | **Target**
13.50p | **124p**

Helium in the Outback

OAK Securities
90 Jermyn Street | London | SW1Y 6JD

30 July 2024

NAV:	$mm
Core	6.4
Dev. & Appraisal	-
Exploration	135.1
Total	**141.5**
Per Share	123p
From Current Price	811%

Stock Data

Market Cap:		£12.2mm
EV:		$15.5mm
Shares in Issue		90.1mm
Change:	1m	-
	3m	-
	12m	-

Georgina Energy plc's ("Georgina" or the "Company's") helium prospects, Mount Winter and Hussar, located in the Amadeus and Officer basins (Australia) respectively, provide investors with exposure to potentially world-scale strategic accumulations of helium, in a proven helium province. The risked valuation of $142mm (123p) is 9.1x the current price and underlines the potential of the assets.

Known Basins with Proven Helium

Both the Amadeus and Officer basins (the "Basins") have been subject to exploration, albeit relatively unexplored in comparison with other onshore basins globally.

Furthermore, **previous exploration data has proven the presence of helium ("He"), hydrogen ("H2") and natural gas ("CH4"), eliminating the key "Source" risk**.

Initial Programme Low Cost & High Impact

While a higher cost exploration well will be required on its Mount Winter Asset, the **costs associated with both wells will be offset to some extent by the fact that the Company intends to re-enter an existing exploration well.**

Pricing an Unknown, but Likely to be In Line with USGS Pricing

Australia does not produce He currently, with the Darwin LNG's production facility closing recently, so it is difficult to say what the pricing point will be. While we have taken our guidance from the USGS regulated prices (~$400/mcf), **we have conservatively assumed that helium pricing will be regulated by the government,** reducing the wellhead pricing, **meaning we base the valuation of the Company's helium sales on $337.50/mcf.**

However, **data has shown that pricing into Australia has exceeded $1,000/mcf**, providing a significant range of potential pricing points in the market.

We have reflected this range of potential prices in our valuations, which indicates that **there could be scenarios where the valuation exceeds $29bn (32,186p/share)**.

Valuation

Our valuation has leveraged DCF methodology, overlaying multi-nodal EMV analysis to accounts for the various risks associated with exploration and development.

Based on our proposed development concept, we estimate **the Company's P50 risked valuation to $142mm (£111mm – 124p), while the unrisked valuation is $2,060mm (£1,617mm – 1,795p).**

Initiation Note

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Contents

Valuation – $142mm (124p)

We have valued Georgina's assets at $142mm using DCF valuation methodology, adjusting for exploration risk using binomial EMV; the un-risked valuation is $2,060mm.

Summary

In valuing Georgina Energy plc (the "Company" or "GEP" or "Georgina"), Oak Securities ("OAK") has used discounted cash flow ("DCF") based on the net present value ("NPV") of the underlying assets as its primary valuation tool.

This is especially prescient where the quantities of value generating reservoir fluids have three degrees of freedom, such as with both Mount Winter and Hussar, as they are both estimated to contain helium ("He"), hydrogen ("H_2") and natural gas ("CH_4").

Consequently, in studying the valuation in this manner it allows the study of a range of the key factors impacting the value of a company's asset portfolio, including the risk to commerciality, which is corrected using the expected monetary value ("EMV") methodology we discuss this in more detail in the Appendix (Page 30). Georgina's valuation is summarised in Table 1.

Table 1 Georgina Energy 2U Valuation Summary

Asset	Prospective Resources (bcf)			Valuation ($mm)		Valuation (p/share)	
	Helium	Hydrogen	Natural Gas	Unrisked	EMV	Unrisked	EMV
Balance Sheet	-	-	-	6.4	6.4	6	6
Hussar	754.1	60.7	59.4	1,533.3	127.5	1,289	77
Mount Winter	182.5	15.6	14.5	332.0	37.0	500	41
Total	**936.6**	**76.3**	**73.9**	**1,871.7**	**170.9**	**1,795.0**	**124.0**

Source: Company and Oak Securities data

NAV Valuation

In valuing Georgina, OAK has adopted a discounted cash flow ("DCF") valuation methodology, the principal valuation technique used by the oil and gas industry to value production and appraisal assets, while multi-nodal EMV analysis was applied to exploration assets.

While two wells have been sunk into the Mount Winter prospect, reporting natural gas, helium, and hydrogen, OAK considers all the Company's assets to be at the exploration stage.

The prices applied during the valuation are summarised in Table 2, the risking applied is summarised in Table 3, while the breakdown of the $142mm valuation is summarised in Figure 1; a detailed breakdown of the variables applied in the valuation can be made available on request.

Table 2 Summary of Valuations

Parameter	Near Cycle	Mid Cycle	Comment
Hydrocarbon Prices	Forward Curve	Forward Curve	Forward Curve as of 15th March 2024
Helium Prices	$337.50/mcf	$337.50/mcf	Escalated at 1.75% per annum
Hydrogen Prices	Forward Curve	Forward Curve	Priced off of the Forward Curve using a thermal escalation of 35%.

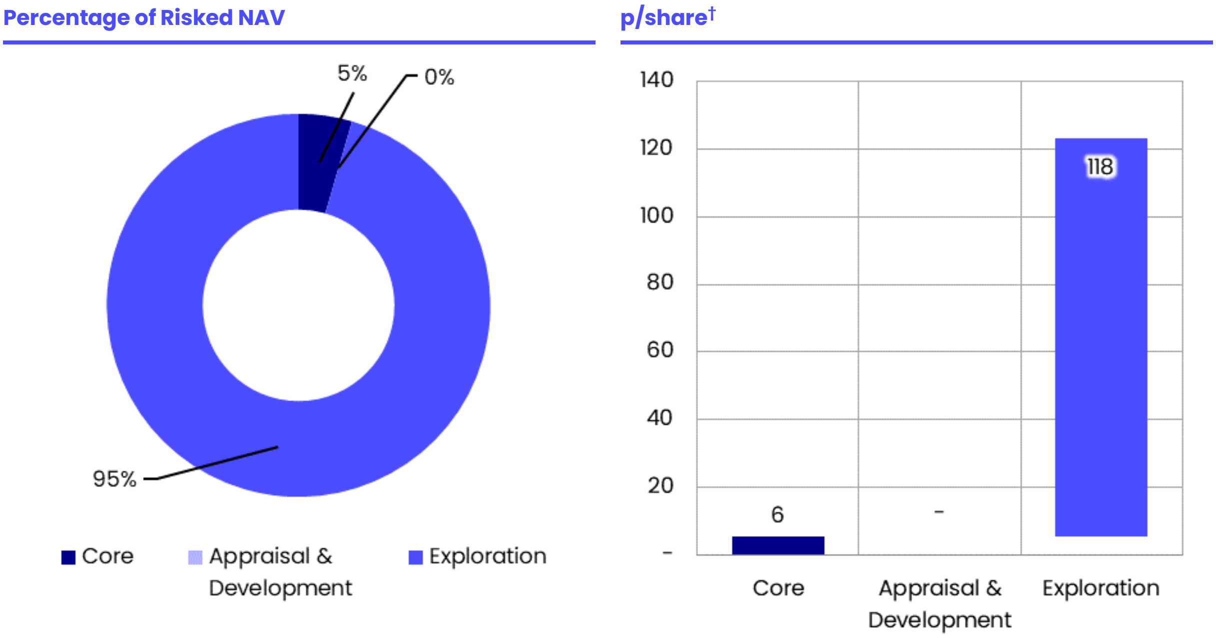
Source: Oak Securities data

Table 3 Summary of Risking Factors Applied in Determination of EMV

Risk Parameter	Hussar	Mount Winter	Comment
Geological CoS (CoS_G - %)	15.6%	15.8%	Weighted success by volume.
Technical to Commercial CoS (CoS_C - %)	55.0%	75.0%	Estimated to reflect the disparity between higher geological chance success of CH_4 and He's relatively larger impact on commerciality.
Overall CoS (CoS_T - %)	**8.6%**	**11.8%**	-

Source: Oak Securities data

Figure 1 NAV Summary



Source: Oak Securities data
Note: † Based on 90.1mm shares in issue

Key Variables Impacting Valuation

OAK values gas production assets using DCF for the period over which access to the economic benefits of the respective working interest can be reasonably deemed to apply.

In assessing the value of Georgina's interest in the Asset, we have assumed a base case (the "Base Case") and varied the key factors according to the range of potential inputs to arrive at a probabilistic valuation following multiple iterations ("Iterations") using Monte Carlo Simulation. From this, we capture the following:

1. **90% probability** ("Low" or P_{90}) that the quantities recovered will equal or exceed the associated estimate;
2. **50% probability** ("Best" or "P_{50}") that the quantities recovered will equal or exceed the associated estimate; and
3. **10% probability** ("High" or P_{10}) that the recovered quantities will equal or exceed the estimated estimate.

The *Valuation Approach* section (from Page 29) provides more details on how Oak Securities approaches valuation and details the full range of variables applied. However, OAK considers the critical elements in this valuation to be:

1. Helium market and pricing (Commodity Pricing);
2. SPE PRMS Assessment Category and chances of making a commercial discovery (Volumetrics and Risking);
3. The cost and timing of development (Work Programme); and
4. Costs associated with the Work Programme (Capex and Opex Costs).

We discuss each of these key elements in the following text.

Commodity Pricing

Helium Market

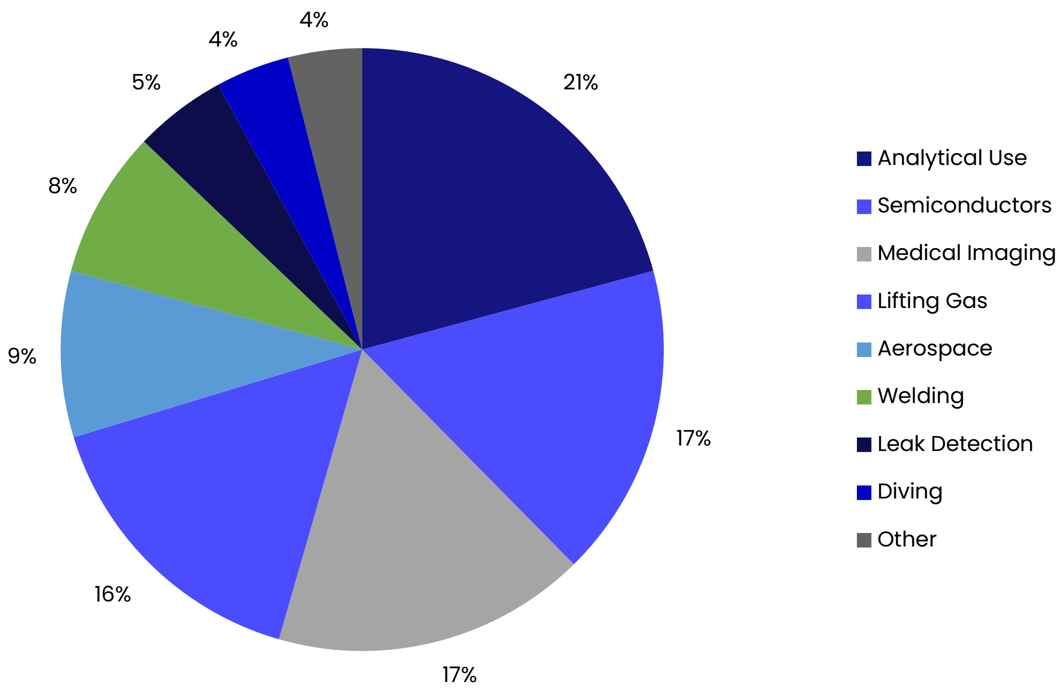
Helium is a non-toxic, colourless, odourless and unreactive gas with a density significantly lower than air (SG: 0.1380). Its physical properties make it ideal for use in a wide range of applications, from cooling superconductor magnets in medical instruments, through to displacing nitrogen and oxygen for saturation diving; Figure 2 provides a breakdown of the US' 2023 usage.

Globally, helium prices reflect the uniqueness of its physical and chemical properties and its scarcity. The global helium market is opaque, with few independently verified pricing sources. However, given that the US is a key exporter of helium, the US Department of Trade's ("USDOT's") monitors helium trade statistics, which is publishes regularly.

This underlines not only helium's strategic importance but also the pivotal role that the US plays in keeping the international helium market supplied, acting as a "strategic swing producer."

Figure 2 United States 2023 Helium Use

% Total US usage by Segment



Source: USGS and Oak Securities data

Helium Pricing

While helium trades globally, the lack of depth and liquidity means that prices often vary significantly and reflect the relative supply/demand balance between the supplier and purchaser when entering the supply agreement, which varies regionally and over time. This notwithstanding, the US market is the most transparent and in the absence of any other credible transparent sourcing, acts as a suitable proxy for international pricing.

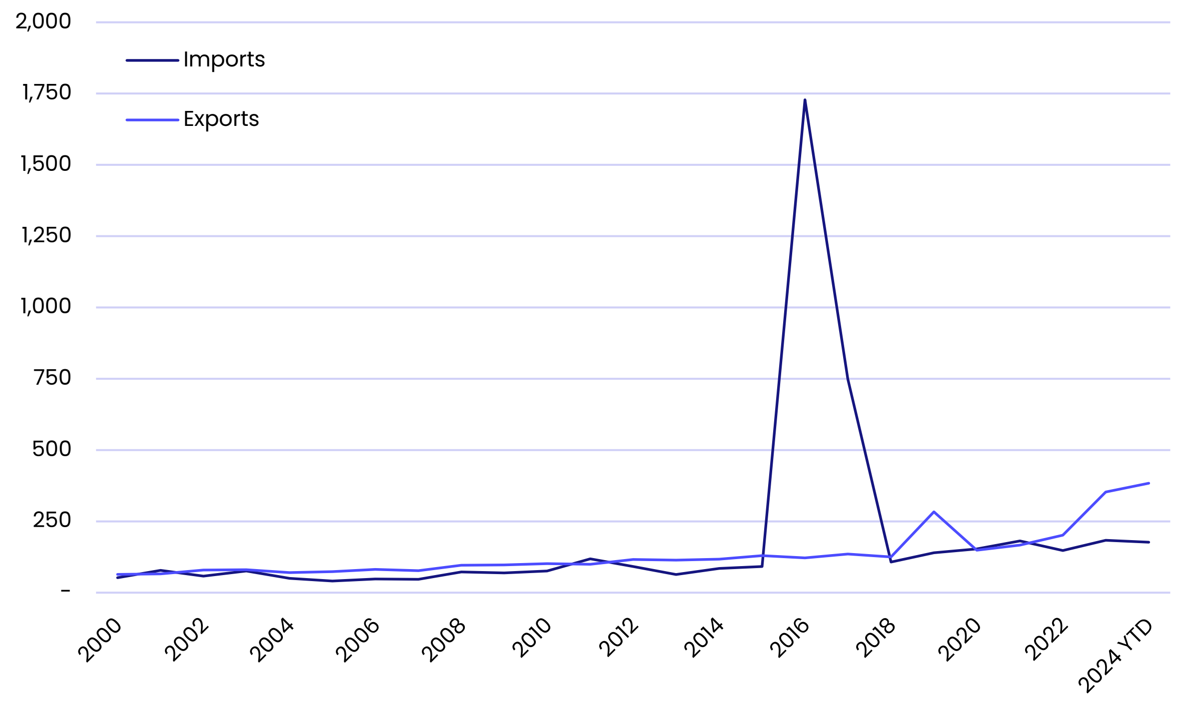
Nevertheless, the US market is distorted by the US Government's active participation, due principally to its near-monopoly status. no global helium price benchmark exists, the USDOT international helium trade statistics provide some insight into global pricing (Figure 3).

For sales outside of supply agreements, in the "Open Market," helium prices are driven by the supply/demand balance at the time of sale and the urgency with which the helium is required by the purchaser. While the US domestic helium market is opaque, the United States Geological Service's ("USGS's") annual minerals yearbook provides some insight into helium pricing in the US market (Figure 4).

This notwithstanding, not all volumes are met by releasing volumes from the US strategic reserve. Those volumes not met by sales from the US strategic reserve are met by private sales on the open market ("Private Sales").

Figure 3 **US Helium Import and Export Average Price**

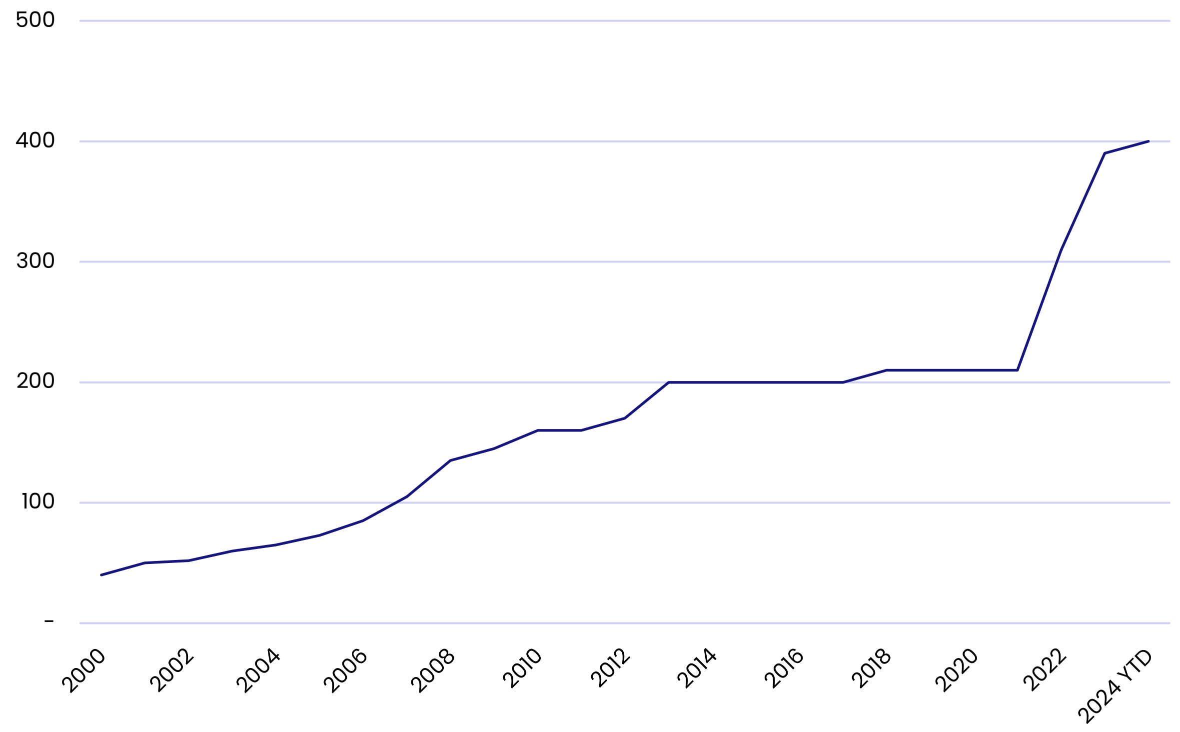
$/mcf



Source: US Department of Trade and Oak Securities data

Figure 4 **US Domestic Private Sale Helium Price**

$/mcf



Source: USGS and Oak Securities data

Open Market prices are often markedly higher prices than those recorded by the USGS (Figure 4 – Page 7), as they are accompanied by a supply surcharge for immediate delivery ("Supply Surcharge").

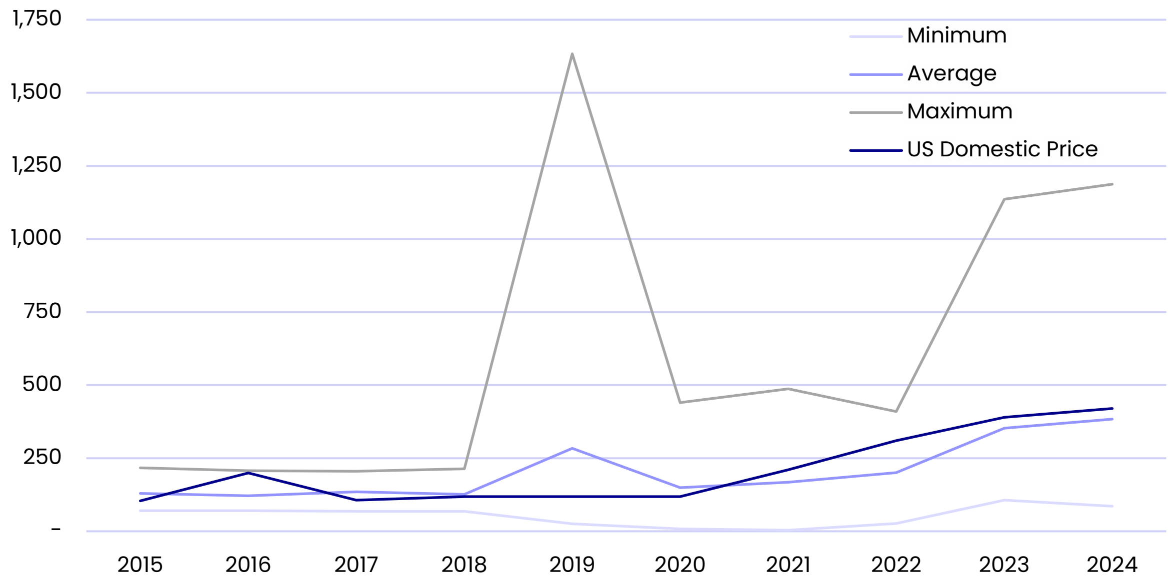
Generally, the helium prices depicted in Figure 3 and Figure 4 (both Page 7) reflect long-term supply contract pricing or strategic sales and are as a consequence, significantly lower than the Open Market helium price.

The most recent observation by the USGS, puts pricing at ~$420/mcf reflects this longer-term pricing framework. Consequently, this price excludes any contribution from the Open Market and the associated Supply Surcharges, significantly underestimating the true pricing in the Open Market.

To some degree, helium export prices (Figure 5) provide some indication of the extent of the Open Market pricing that can be achieved with Supply Surcharges. The maximum export price regularly exceeds that quoted by the USGS.

Figure 5 US Helium Export Prices

$/mcf



Source: US Department of Trade, USGS and Oak Securities data

Following the sale of the Federal Helium Reserve to Messer, helium prices have traded significantly above $1,000/mcf, suggesting that despite the USGS' recent observations of $420/mcf, the true pricing is more likely to be significantly higher.

The US Government's exit from the management of the Federal Helium Reserve, ends its direct market involvement. While it remains unclear how this shift to private stewardship of the Federal Helium Reserve will impact helium availability and pricing, both internationally and domestically, the transfer of stewardship to private hands will place greater emphasis on generating returns, leveraging the Federal Helium Reserve. Given this, we believe that Open Market prices are likely to strengthen still further, with surcharges for immediate delivery becoming reflected in standard prices.

Australia currently is a net importer of helium, and so any price it is likely to receive will unlikely be below that received in the Open Market. This has been supported by trade data from the USDOT which reports the last export of helium to Australia was conducted at $1,300/mcf.

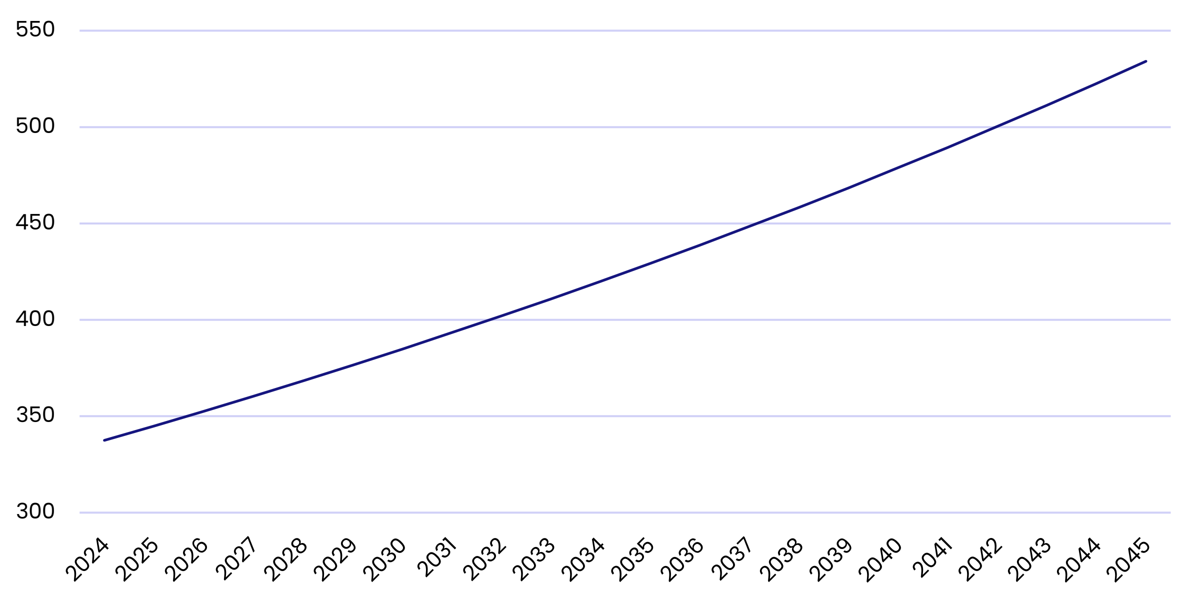
Nevertheless, and despite this backdrop, the Australian government has a track record of protectionism and limiting markets in situations that it believes are in its national interest. Consequently, it is feasible that the Australian government could intervene in the market to regulate helium pricing.

In such situations, we believe that in setting price controls, the Australian government will use the USGS' $420/mcf as a benchmark, and price back to the wellhead, irrespective of the costs incurred by the producer to bring the He to market.

In order to reflect this risk, OAK has assumed that the price will trade below the Open Market prices, starting at $337.50/mcf in 2024 for the purposes of the Valuation, escalating at 1.75% per year as our Base Case scenario. For the economic analysis we assume that the price will vary between $275 – 400/mcf and that the price inflates between zero and 3.50% per year; the Base Case helium price is illustrated in Figure 6.

Figure 6 Price Applied in the Valuation

$/mcf



Source: USGS and Oak Securities data
Note: Base case scenario

Natural Gas & Hydrogen Pricing

While OAK has its own expectations for the forward prices for oil and gas, which reflects our opinion of the outlook for the global supply/demand balance. For the purposes of valuation, however, OAK applies the forward curve as provided by the futures market, for both oil and gas pricing.

We elect not to inflate prices beyond the scope of the respective curve since commodity pricing is generally unlinked from inflation and is instead driven by a number of factors, including:

1. The relative balance between supply and demand; and
2. Perception of future availability.

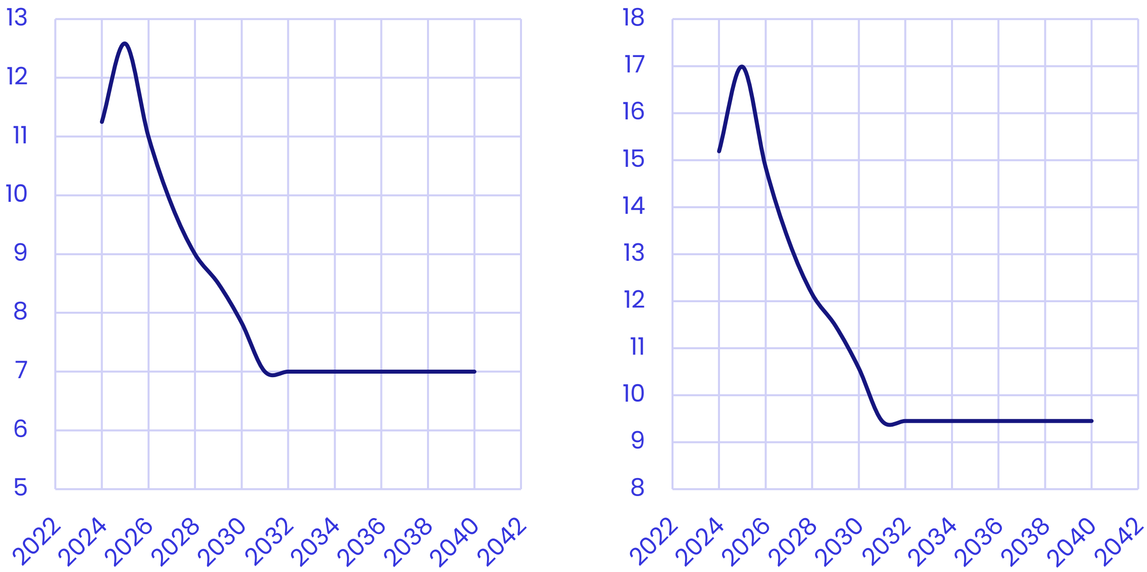
The gas market in Australia is regulated, which means that there are price controls. Nevertheless, we believe that delivered prices trade in line with the JKM LNG price, albeit without the volatility. While the delivered price might be in line with the JKM LNG price, the wellhead price is significantly below this.

For the purposes of the Valuation, OAK assumes that the wellhead price will reflect the JKM LNG price, less a 60% discount to allow for process and transport costs to market. The hydrogen pricing environment is neither deep nor liquid, and given that demand is usually met by the steam reformation of natural gas, in based on natural gas pricing, to some extent at least.

Consequently, we have based our pricing off the JKM LNG price. Given that the pricing will reflect the steam reforming costs, as well as raw material costs, we have assumed that it to trade at a 30% premium to the wellhead price for gas. The price curves applied in this valuation are illustrated in Figure 7.

Figure 7 Commodity Prices

JKM LNG Forward Curve ($/mm btu) | **H2 Pricing ($/mcf)**



Source: Oak Securities data

Volumetrics and Risking

Given the range of unknown factors that are generally considered when assessing potentially recoverable gas from an undrilled prospect, there will always be a range of uncertainty.

While the SPE PRMS system deals with both liquid and gaseous hydrocarbons, OAK believes it to be a suitable proxy to provide guidance as how best to address the range of uncertainty faced with helium in the absence of a dedicated approach.

Volumetrics

Gas Initially in Place

AL Maynard & Associates ("Maynard") has undertaken an audit of the estimates for the on the gas initially in place ("GIIP"), recoverability ("R_f"), helium content ("C_{HE}"), hydrogen content (C_{H2}) and natural gas content ("C_{CH4}") for each of Hussar and Mount Winter; we summarise the volumetric data in Table 4 (Page).

Table 4 GIIP Summary

SPE PRMS Category	Raw Gas (mm cf)	He Resources (mm cf)	H_2 Resources (mm cf)	CH_4 Resources (mm cf)
1U	991	26	5	356
2U	8,115	401	418	3,726
3U	35,132	3,162	3,865	18,620
Mean	14,083	756	774	6,357

Source: Maynard and Oak Securities data
Note: † - COS_G weighted by gross Raw Gas GIIP
A detailed breakdown of the variables applied in the valuation can be made available on request.

For the purposes of its valuation, OAK considers the content of the respective gas fractions to vary independently from the SPE PRMS Category, choosing instead to vary these parameters between the upper and lower value irrespective of which SPE PRMS Category is applied to the Iteration.

Risking of Gas Initially in Place

In assessing risk, OAK accepts that the risks to commercialisation are not limited to whether there is helium present in a reservoir but also whether it is recoverable and whether what is recovered is in sufficient quantities to be commercial.

Regional and local geochemical sampling and oil and gas drilling have suggested the presence of helium, which significantly lessens, but doesn't eliminate, a number of the risk parameters associated with exploration drilling; we discuss the risk parameters in *Chance of Success* (Page 30).

This notwithstanding, OAK has built on the work conducted by Maynard by overlaying an additional risk to account for the potential variability in the size of the GIIP contained within the respective formations ("GIIP Risk").

Oak Securities' GIIP Risk varies between zero to 100% of Maynard's GIIP for each od Mount Winter and Hussar, to which we overlay at technical to commercial success rate of 55%.

A detailed breakdown of the variables applied in the valuation can be made available on request.

Work Programme

For the purposes of the valuation, Oak Securities considers there to be two distinct phases in Georgina's work programme (the "Work Programme"), namely:

1. Exploration and Appraisal; and

2. Development.

We discuss each of these phases in the following text.

Exploration and Appraisal Programme

Historically, there has been significant slippage in work programme timetables due to (i) the lack of available rigs of suitable criteria; or (ii) the availability of funding. However, the US onshore rig market is both deep and liquid, such that rigs are a commoditised product, meaning that rig availability is transparent and marketed based on availability.

While we do not anticipate any particular issue in Australia, the significant distances between the key drilling activity centres and the respective assets' locations are significant.

The risk capital associated with the Hussar and Mount Winter programmes, however, is reduced by the fact that it is proposed that existing wells will be re-entered. We summarise our expectations for the Work Programme in Figure 10 (Page 17).

Development

Production Well Type Curve

While the first two wells will have been drilled by the time the development programme is initiated, the size of the gas plant and total number of wells will be determined by the deliverability of individual wells. The performance of a well is determined by a number of elements, notably: (i) the deliverability of the reservoir; (ii) the drive mechanism; and (iii) the individual well design.

While it is not possible to say with confidence what the deliverability of a well will be, OAK has derived a number of normalised production curves ("Well Types") using Arps type Decline Curve Analysis ("DCA"), applying the general Arps as in Equation 1. In the event that the "b" is zero, the effective decline rate becomes exponential and Equation 1 can be reduced to Equation 2.

Given the extent of the unknowns, a range of inputs to the DCA have been derived from analysis of a number of analogue wells, both in Montana and elsewhere. While these will be updated with engineering data gained from a successful exploration well, the inputs applied in OAK's assessment are summarised in Table 5.

$$Q_t = \frac{Q_i}{\left(1 + bD_i t\right)^{\left(\frac{1}{b}\right)}} \quad (1)$$

$$Q_t = Q_i e^{-D_i t} \quad (2)$$

Where:

Q_t	Production at Time "t"	bbl
Q_i	Initial Production	bbl
b	Arps Decline Factor	-
D_i	Initial Decline	%/month
t	Time	Months

Table 5 Input Parameters Applied in the Well Curve Development

Parameter	Units	P90	P10
Gas Recoverable per Well	mm cf/well	10,000	75,000
Plateau	Months	-	2
Decline Rate	% pa	35.0%	80.0%
b	Factor	-	1.00

Source: Oak Securities data

The inputs are varied over 50,000 iterations, resulting in four Well Types, namely: (i) P90 (Low); (ii) P50 (Best); (iii) P10 (High); and (iv) Mean. These probabilistic curves are illustrated in Figure 8.

The estimated ultimate recovery ("EUR") per well is similarly derived; these results are summarised in Table 6.

Table 6 Estimated Ultimate Recoverable Per Well

Parameter	Recoverability (mm cf/well)			
	Low	Best	High	Mean
Recovered	15,198	43,970	75,807	45,056

Source: Oak Securities data

A detailed breakdown of the variables applied in the valuation can be made available on request.

Projected Production Rate

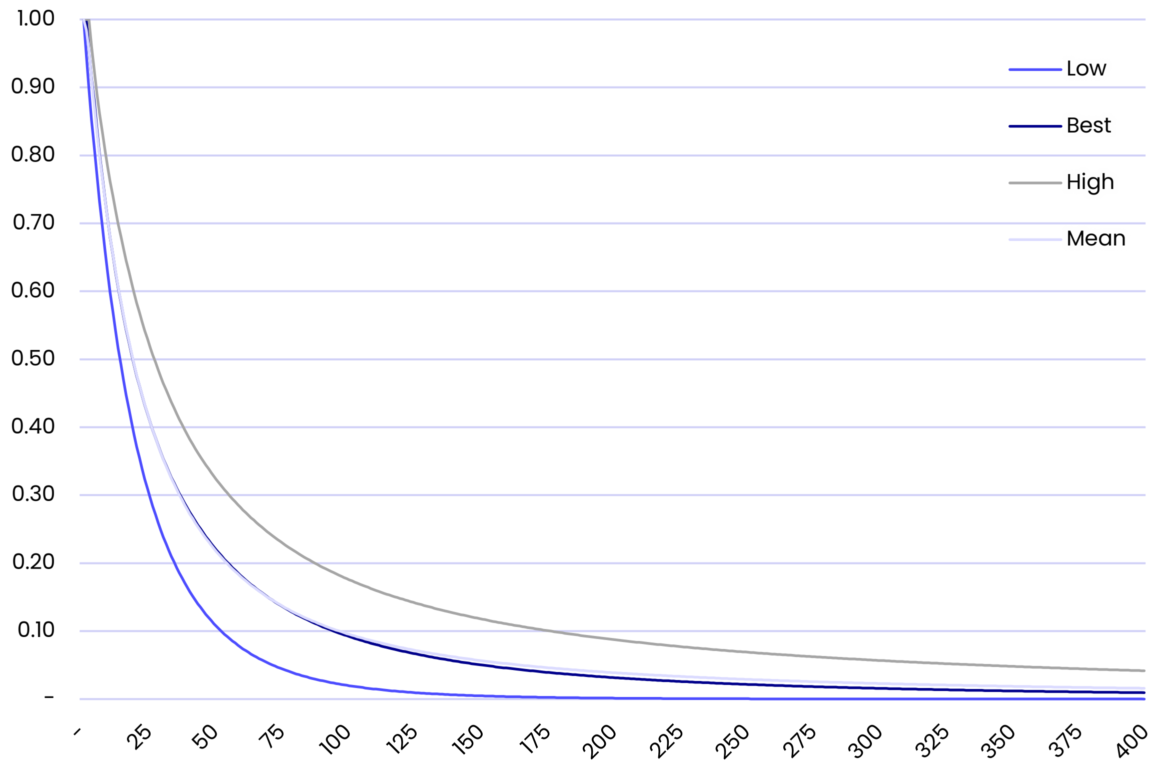
Combining the drilling rate and Well Type gives rise to an estimated production curve. OAK's valuation has assumed a development concept that focuses on maximising the rate of recovery of gas from the reservoir, optimised for the process plant rate; our production rate estimates are shown in Figure 9.

We discuss the impact of our modelling approach in *Capex and Opex Costs*.

A detailed breakdown of the variables applied in the valuation can be made available on request.

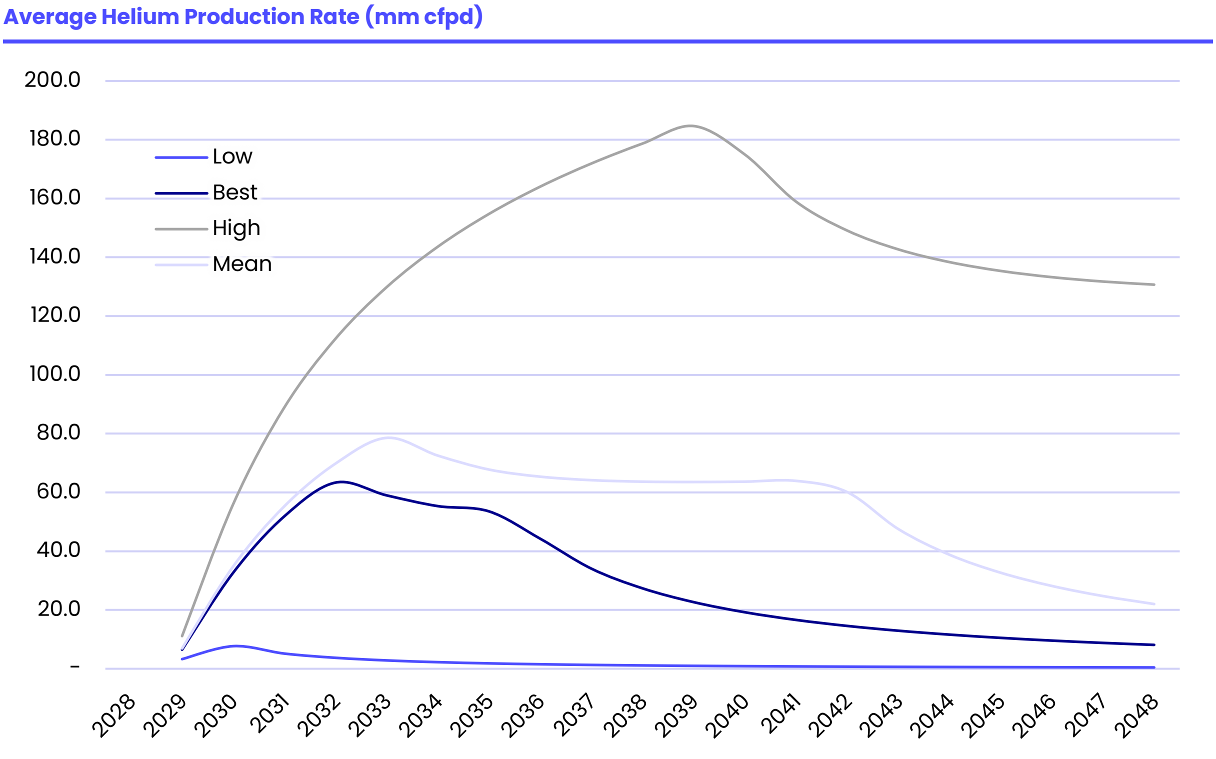
Figure 8 Normalised Decline Curve

-



Source: Montana Board of Oil & Gas Conservation & Oak Securities data

Figure 9 Deterministic Helium Production Rates



Source: Oak Securities data

Capex and Opex Costs

Capex

For the purposes of our economic modelling, the Well Type is varied randomly for each well. This in turn provides an estimate of the EUR, which is used to estimate the total number of wells in the development. When the drilling rate and decline rate are applied, this provides an estimate of production rate. It is from this resultant production rate that the gas processing plant is sized.

Given this approach, OAK's Base Case flow rates and gas plant sizing might be greater than would otherwise be expected. However, given that the majority of small-scale gas plants are scalable in as far as increasing capacity is achieved by increasing the number of "off the shelf" modular elements operating in parallel. As a result, we believe that the gas plant will be relatively easily scaled up and down as required.

While there is an impact on our capital cost element, this is offset by the fact that under a differing production scenario, one where the gas plant feed rate is the limiting boundary condition, while the associated costs will be smaller, this will be matched by a corresponding reduction in the cumulative volumes won and sold at any given time. While production will occur over a longer period, any benefits generated by lower capex costs are more than offset by discounting at 10%.

We assume that the costs per well are in line with the exploration and appraisal well, with additional cost benefits deriving from the "economy of scale" principle offsetting the additional infrastructure that accompanies development drilling.

We do not consider the separation of He, H_2 and CH_4 to require any specialist equipment or engineering support. Consequently, it is highly likely that "off the shelf" engineering solutions will be available, albeit subject to further modification for the specific composition of the feed gas and ambient conditions.

We have considered a number of differing development scenarios, including a range of individual He, H_2 and CH_4 solutions. Independent scoping studies have shown that incorporating an integrated solution allows engineers to optimise the heat and mass balance, to maximise yield and efficiency.

Given the remoteness of both Mount Winter and Hussar, we have looked at the cost and feasibility of a larger gas treatment facility that benefits from the efficiencies of scale. We have found that the construction of a combined gas treatment facility can cost up to $4.00mm/mm cfpd peak CH_4 and He gas flow rate, subject to a minimum flow rate of 10mm cfpd.

We further anticipate that to process sufficient gas to generate returns that a gas pipeline will need to be constructed, 300km in the case of the more remote Hussar, and 15mkm in the case of Mount Winter.

Given the respective sizes of Hussar and Mount Winter, the Base Case requires a significant number of wells in both cases. Given the assumed drill rate, this gives rise to differing peak flow rates; we summarise this in Table 7.

Table 7 P50 Total Well and Peak Flow Rate Summary

Asset	Total Wells	Peak CH_4 & He Flow Rate (mm cfpd)
Mount Winter	38	122
Hussar	78	431

Source: Oak Securities data

Our estimate for the timing and cost for the Base Case Work Programme through to first revenues is summarised in Figure 10 (Page 17), while the attendant cash flows are illustrated in Figure 11 (Page 18).

A detailed breakdown of the variables applied in the valuation can be made available on request.

Opex

Opex consists of two separate elements: (i) fixed opex and (ii) variable opex. The fixed opex is further comprised of the corporate running costs ("SG&A"), per-well costs, while the gas plant will also have fixed operating costs associated with it.

OAK considers variable Opex costs to be limited to the per unit processing cost of the helium and its subsequent transportation to the respective sales point. We summarise our Opex cost estimates in Table 8.

Table 8 Estimated Opex Costs

Item	Mount Winter	Hussar
Fixed Well Costs ($/month/well)	4,250	4,250
Gas Plant Fixed Costs ($mm pa/mm cfpd He Peak) (10mm cfpd Min)	0.63	0.50
CH4 Processing Costs ($/mcf Raw Gas)	0.30	0.30
He Processing Costs ($/mcf Raw Gas)	1.25	2.00
H2 Processing Costs ($/mcf Raw Gas)	0.30	0.50
CH4 Transport Costs ($/mcf)	0.63	0.63
He Transport Costs ($/mcf)	2.00	2.50
H2 Transport Costs ($/mcf)	2.00	2.00

Source: Oak Securities data

Our estimate for the timing and cost for the Base Case Work Programme through to first revenues is summarised in Figure 10, while the attendant cash flows are illustrated in Figure 11 (Page 18).

Figure 10 Exploration, Appraisal and Conceptual Development Work Programme

Activity	Period							
	2024	2025	2026	2027	2028	2029	2030	2031
Mount Winter								
Exploration								
Appraisal†								
Development								
First Gas						★		
Hussar								
Exploration								
Appraisal†								
Development								
First Gas						★		
Costs ($mm)								
Overall Costs	4	11	6	1,240	1,240	1,369	194	194
Cumulative Costs	**4**	**15**	**21**	**1,261**	**2,500**	**3,869**	**4,063**	**4,257**

Legend

Corporate	◆	Design		Colour	**Firm**
		Study			Contingent
		Infrastructure			
		Drilling			

Source: Company & Oak Securities data
Note: † - Wells drilled during the Exploration and Appraisal programme are assumed to be drilled and completed ready for production

A detailed breakdown of the variables applied in the valuation can be made available on request

Economic Analysis

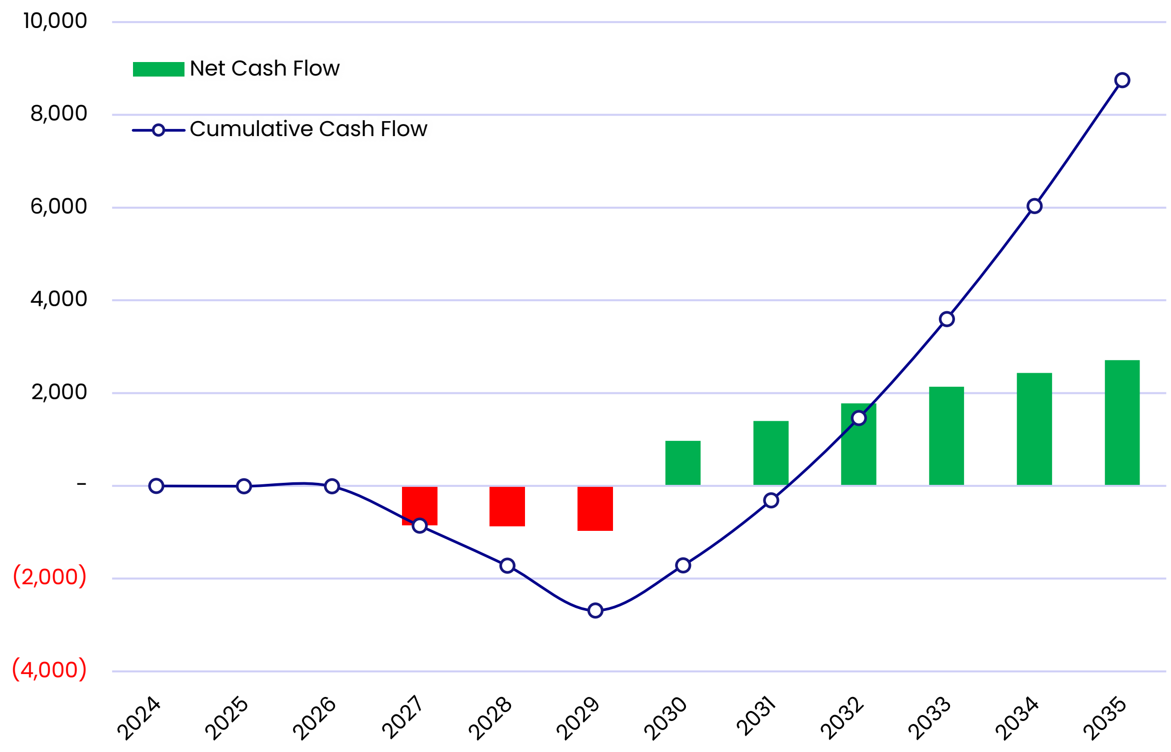
The results from the exploration and appraisal programme will be used to refine the well and gas plant design, as well as optimise the development programme. Consequently, it is impossible to say with certainty what the production rate and costs will be prior to the results of the exploration and appraisal programme.

Nevertheless, OAK has made certain estimates based on the assumption that the exploration and appraisal programme will be successful. Based on these initial assumptions, production rates and costs have been estimated from field and gas plant analogues, both in the US and globally. Combining these elements allows OAK to generate net cash profiles, which are then used in the economic analysis.

We have used Monte Carlo simulation using 1,500 Iterations to arrive at a range of values, from which a Low, Best, High and Mean case valuation has been derived. More detail on the Monte Carlo simulation approach can be found from Page 33; a detailed breakdown of the variables applied in the valuation can be made available on request.

Figure 11 Base Case Pre-Financing Cash Flow

Mount Winter & Hussar Combined Gross Net Cash Flow ($mm)



Source: Oak Securities data

The results of OAK's analysis (Table 9) demonstrate that the current market valuation of £12.2mm (13.5p), does not reflect the risk adjusted EMV valuation of $142mm (£111mm – 124p), or the significant potential of the Asset, which could exceed the P_{Mean} value of $9.4bn (£7.4bn – 10,409p), pending the extent of the success of the exploration and appraisal programme (Table 9).

Table 9 Total Success-Based NPV$_{(10\%)}$ ($mm)

Forecast Name	P90	P50	P10	Mean
Pre-Tax Undiscounted Net to Georgina	-	7,099.59	181,287.77	60,166.32
Pre-Tax NPV Net to Georgina	-	2,053.52	29,647.10	9,377.70
Post Tax NPV Net to Georgina	-	1,283.31	20,415.94	6,303.90

Source: Company & Oak Securities data

Furthermore, given the Asset's combination of low exploration and appraisal costs and high chance of success, the resultant EMVs (Table 10) demonstrate the robustness of the project.

Table 10 Total EMV ($mm)

Forecast Name	P90	P50	P10	Mean
Pre-Tax Undiscounted EMV Net to Georgina	(188.95)	458.34	11,158.86	3,750.82
Pre-Tax EMV Net to Georgina	(115.67)	135.09	1,914.96	605.74
Post Tax EMV Net to Georgina	(116.10)	81.19	1,321.30	403.94

Source: Company & Oak Securities data

It is important to note that the P90 scenario in Table 10 reflects the discounted costs associated with the exploration and appraisal programme that ultimately results in an uneconomic development.

Nevertheless, the risk-reward ratio favours exploration, and given the current market value, the current market price represents a keen entry point, and more than adequately captures the risk-reward balance. OAK believes the project to be robust, with high IRRs recorded for the project. We estimate that the IRR could be as high as 139%, with a P50 IRR of 81%. We summarise the IRRs in Table 11; a detailed breakdown of the variables applied in the valuation can be made available on request.

Table 11 Total Success-Based IRR

Forecast Name	P90	P50	P10	Mean
Pre-Tax IRR Net to Georgina	-	71%	182%	79%
Post Tax IRR Net to Georgina	-	56%	151%	65%

Source: Company & Oak Securities data

A detailed breakdown of the variables applied in the valuation can be made available on request.

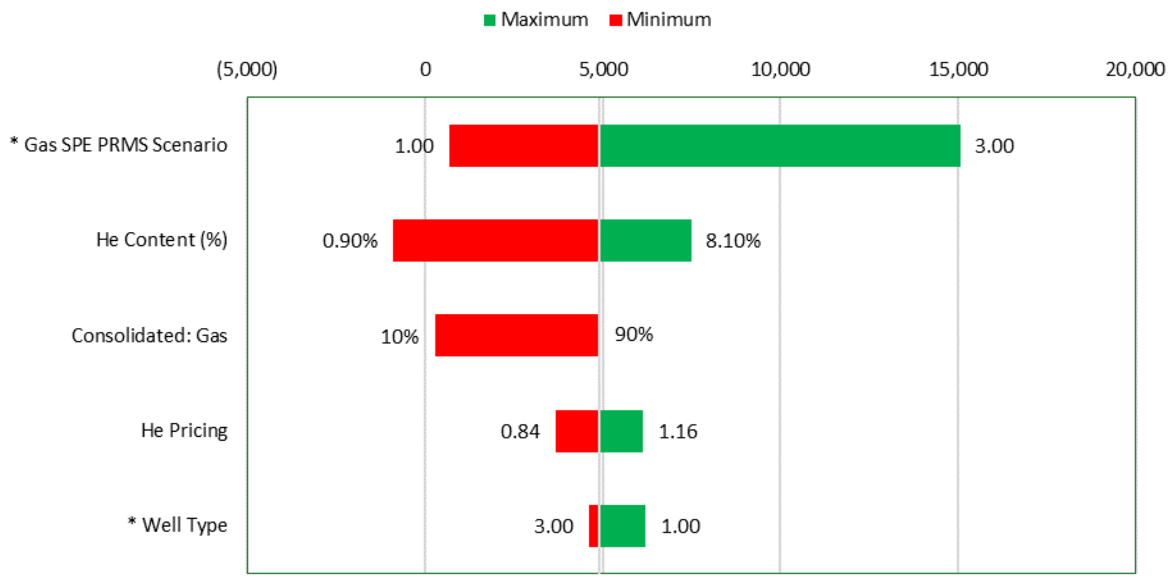
Tornado Risk Analysis

In analysing the risks associated with the development of the Asset, OAK has applied standard natural resources risk analysis techniques, assessing each input parameter to better understand the impact that they have on the overall valuation of the Asset.

OAK's analysis has identified the leading risks over the range that has been applied in the probabilistic valuation, ranking them using a tornado diagram ("Tornado Analysis"). Tornado Analysis evaluates the potential impact of different variables on a project to determine the biggest risks; the Tornado Analysis is illustrated in Figure 13 (Mount Winter) and Figure 13 (Hussar).

Figure 12 Mount Winter Tornado Analysis

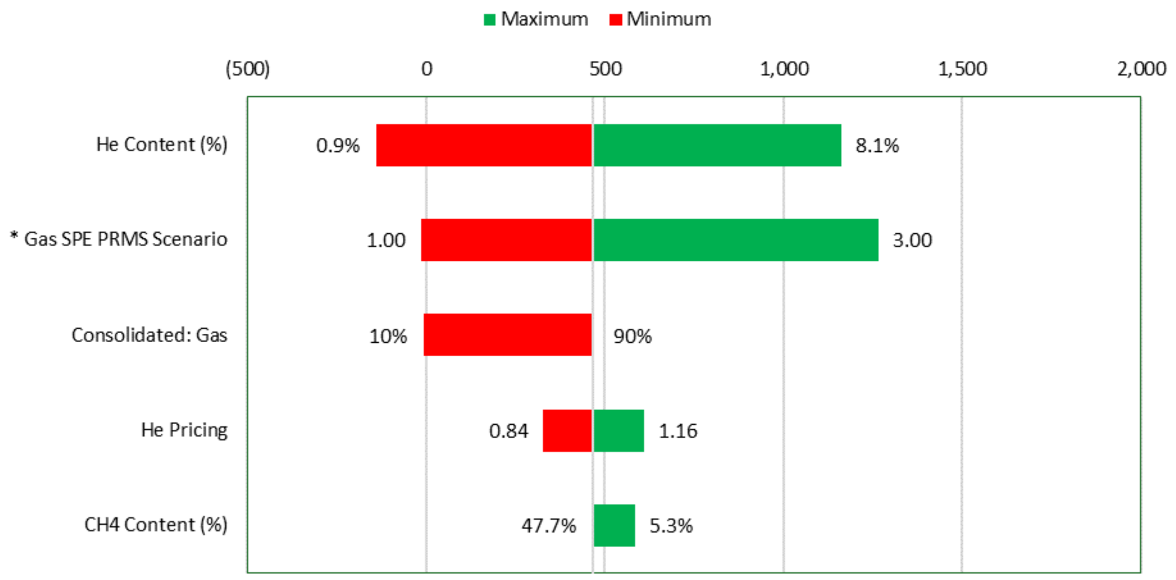
Impact of each Parameter on Pre-Tax NPV(10%) ($mm)



Source: Oak Securities data

Figure 13 Hussar Tornado Analysis

Impact of each Parameter on Pre-Tax NPV(10%) ($mm)



Source: Oak Securities data

Our analysis of Georgina's assets demonstrates that in both cases, SPE PRMS Category is the dominant risk for the asset, with other parameters such as helium content and costs secondary to the valuation. This underlines the general perception, that due to the strength of helium prices, even small quantities of helium can be commercially developed.

Interestingly this analysis suggests that having a better well, recovering more, quicker, is detrimental to the project economics. However, it is our opinion that this is a reflection the costs associated with the helium gas plant, which are directly proportional to the helium production rate.

Given this, it is highly likely that post the Exploration and Appraisal programme, that the development will be optimised, which will include the triangulation of the gas plant sizing, well design and drilling rate, in order to the maximise economic recovery.

Deterministic Scenario Analysis

The Tornado Analysis us useful as it provides an analysis of the most significant risks over the range of probabilistic inputs. However, it does not tend to allow for specific scenarios, or individual input parameters to be tested in isolation.

To that extent, undertaking a deterministic analysis of the Asset's economics allows for a better understanding of the potential scale of a limited number of parameters on valuation. We have studied the impact that three key variables have on the overall valuation; these are:

1. Commodity prices;
2. Capex; and
3. Opex.

We look at each of these in the following text.

Commodity Price

The CH_4, H_2 and He pricing environment all continue support higher prices, in some cases, significantly higher than the Base Case prices that we have applied in this valuation exercise. Furthermore, pricing in the Open Market, which Georgina could potentially sell into, is more likely to rise further and faster as a result of the effects that Messer's acquisition of US Federal Reserve has on the global supply/price balance.

Our economic analysis has assumed a conservative price deck so as to provide a baseline for valuations. However, as can be seen in Table 12 ($NPV_{(10\%)}$), the helium price has a significant impact on the economics.

Table 12 **Impact of change in Sales Prices on $NPV_{(10\%)}$**

SPE PRMS Category	Variation in Pricing (%Change from Base Case)				
	(20%)	(10%)	-	10%	20%
Low	(0.3%)	2.4%	5.2%	8.0%	10.9%
Best	62.7%	81.4%	100.0%	118.6%	137.4%
High	191.4%	236.2%	280.9%	325.6%	370.4%
Mean	104.2%	132.0%	160.0%	188.0%	215.8%

Source: USGS, Company & Oak Securities data
Note: A detailed breakdown of the variables applied in the valuation can be made available on request.

While higher prices upwardly impact the economics, it will also have the secondary benefit of lowering the threshold of commerciality, which consequently increases the chances of success.

Capex

OAK has estimated the cost of a gas plant based on the latest observation is the SE Asian markets, and given the size of the prospects, we have been able to leverage the impact that scale has on per unit costs. We have scaled those costs linearly with the peak CH_4, H_2 and He flow rate, subject to a minimum of 10mm cfpd of CH_4, H_2 and He; the economy of scale effects associated with larger capacity plants is reflected in our estimates.

While we inflate the Base Case Capex estimates (above) to the year that they incurred, we also recognise that the Base Case assumption may also suffer inflation; we study the impact that this has on the economics in Table 13 ($NPV_{(10\%)}$).

Table 13 **Impact of Capex Inflation on $NPV_{(10\%)}$**

SPE PRMS Category	Variation in Pricing (%Change from Base Case)				
	(20%)	(10%)	-	10%	20%
Low	7.7%	6.5%	5.2%	3.9%	2.7%
Best	105.5%	102.8%	100.0%	97.3%	94.5%
High	289.1%	285.0%	280.9%	276.8%	272.8%
Mean	166.6%	163.3%	160.0%	156.7%	153.4%

Source: USGS, Company & Oak Securities data
Note: A detailed breakdown of the variables applied in the valuation can be made available on request.

This data shows that while Capex has an impact on the economics, it is significantly less than that of the sales prices, which is principally due to the impact of the higher helium prices.

Additionally, and while not a significant factor in the economics due to discounting, any additional spend will be recovered in a similar offset in tax take, as the tax shield effect of the capex is recovered from net revenues.

Furthermore, we would anticipate that any inflation in capex costs will be outstripped by the upward inflation on the helium price, which will have the net effect of further improving economics.

Opex

OAK's estimates of fixed opex costs are considered to be directly linked to the peak feed flow rate of CH_4, H_2 and He, while variable opex costs are estimated to be dependent on each component, as we have disclosed previously (Table 8 - Page 17), all of which are based on global observation.

While we inflate the Base Case Opex estimates above for the year that they are incurred, we also recognise that the Base Case assumption may also suffer inflation; we study the impact that this has on the economics in Table 14 ($NPV_{(10\%)}$) (Page 23).

Table 14 Impact of Opex on $NPV_{(10\%)}$

SPE PRMS Category	Variation in Pricing (%Change from Base Case)				
	(20%)	(10%)	-	10%	20%
Low	7.1%	6.1%	5.2%	4.3%	3.4%
Best	111.7%	105.8%	100.0%	94.3%	88.4%
High	305.9%	293.3%	280.9%	268.6%	256.1%
Mean	176.9%	168.5%	160.0%	151.4%	143.0%

Source: Maynard, Company & Oak Securities data
Note: A detailed breakdown of the variables applied in the valuation can be made available on request.

This analysis underlines the fact that while Opex has an impact on the economics, it is outweighed by variation in the helium price and capex. This a reflection of the fact that they helium price, even using the conservative price of $337.50/mcf, is significantly greater than the is significantly greater than the opex.

Location and Operating Environment

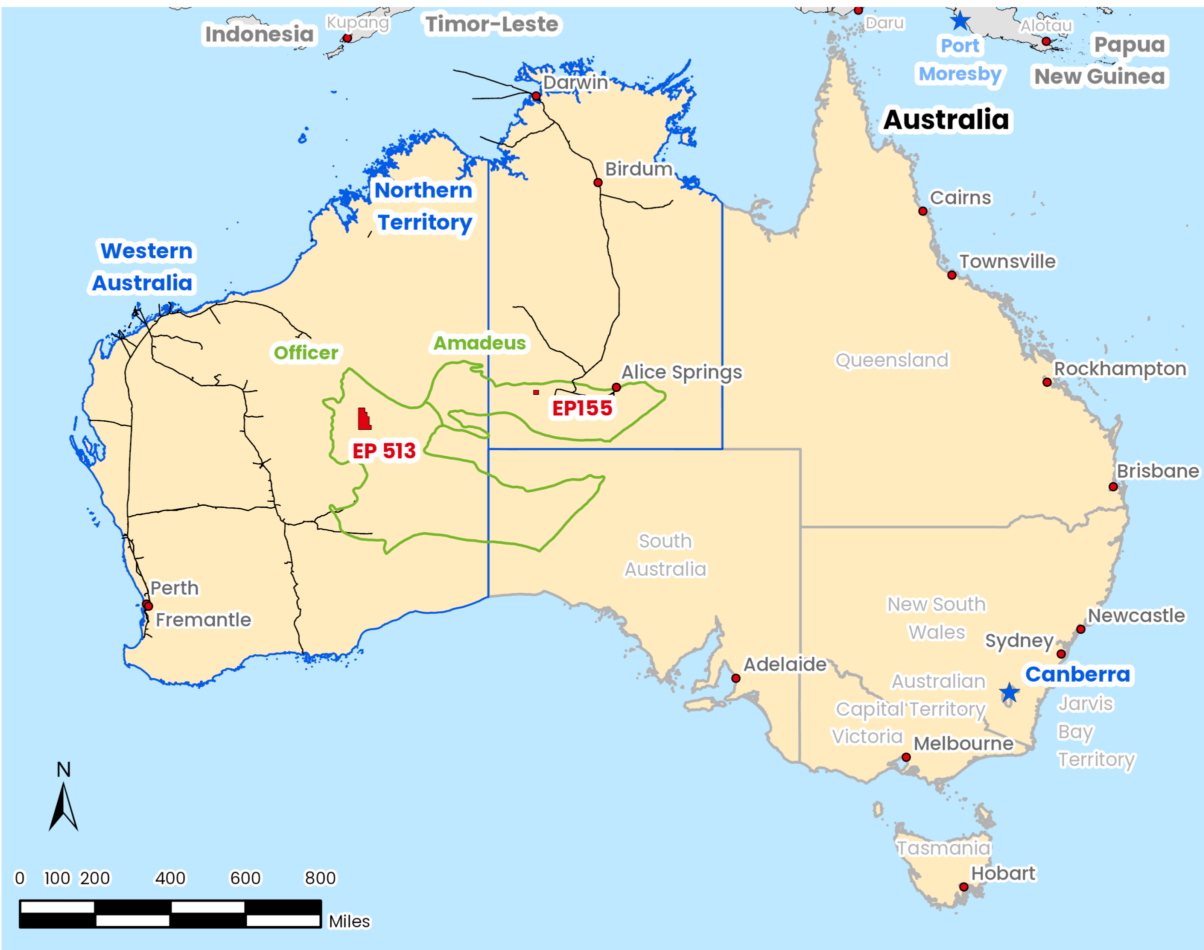
Mount Winter and Hussar are based in the Officer and Amadeus basins (Australia) respectively. While the operating environment is not as benign as it could be, it is significantly better than the hostile operating in the United Kingdom. Nevertheless, the strong rule of law and clear tax treatment is conducive to natural resources operations.

Location of Georgina's Asset

Georgina's Assets are located in the Officer and Amadeus basins, which are located in Australia. The Mount Winter licence (EP155 – Amadeus Basin) covers some 386km^2 and is located in the Northern Territories, while the Hussar licence (EP513 – Officer Basin) covers 3,195km^2 and is located in the Western Australia; the licences are shown in red in Figure 14.

Figure 14 Asset Locations

Map Showing the General Location of the Company's Assets



Source: State Government of Western Australia, State Government of Northern Territories, USGS, ESRI, & Oak Securities data

There has been relatively little helium exploration Australia, and helium, while detected regionally, has not been a routine test in the usual suite of tests conducted at the wellsite. In fact, unless a helium content is specifically requested, it is still standard oilfield practice to use helium as a carrier gas in chromatograph studies.

Consequently, there remains a significant number of potentially commercial helium discoveries to be made, even in already drilled structures, due solely to the fact that helium has historically been overlooked.

We don't propose to discuss the details on the formation of helium through natural radioactive decay, as this has been widely discussed elsewhere, and is available publicly, from sources such as the Royal Society of Chemistry.

Officer Basin

The AOB is located in Western Australia and South Australia and covers about 410,000 sq. km, containing a sediment thickness of up to 10,000m. There are several major depocenters which makes up a number of easily identifiable sub basins.

The Officer Basin is poorly explored, with only about 15,000km of 2D seismic coverage and less than 30 exploration wells. Numerous hydrocarbon shows from four distinct oil families are recorded from Neoproterozoic and Cambrian sediments, but there have been no commercial discoveries. Possible traps range from simple anticlinal closures, diapirs and fault-induced rollovers as well as stratigraphic traps.

Amadeus basins

The Amadeus Basin occupies much of the southern quarter of the Northern Territory and extends about 150km into Western Australia, covering about 170,000km^2 in total. It has a maximum sediment thickness of 14,000m with several major depocentres, which create a series of identifiable sub-basins and. Early Neoproterozoic volcanics and fluvial siliciclastics in the west form a rift sequence associated with an extensional event caused by the breakup of the Rodinia Supercontinent.

Despite a long exploration history, the Basin remains underexplored with only a handful of wells, as it has been overshadowed by the more prolific Eronamaga and Surat basins.

Fiscal Regime

The fiscal regime that applies in Australia to the petroleum industry consists of a combination of corporate income tax ("CIT"), a petroleum resource rent tax ("PRRT") and royalty-based taxation.

Operating Environment

Australia has a vibrant onshore oil and gas industry, if diminished from its heyday, and it is important to note that the winning and sale of helium is nominally identical to that of natural gas.

Consequently, we believe that there will be a range of suitable rigs and tubulars necessary to test and develop the Hussar and Mount Winter.

Nevertheless, the sheer size of Australia and the distances involved in mobilising rigs and long-lead items will make the planning phase for significant than would otherwise be expected.

Other than the distances and longer lead times than would be expected, we do not foresee any specific issues relating to availability of drilling rigs, tubulars and production infrastructure. Furthermore, given that no specialist engineering is likely to be required in the design, construction and operation of the gas plant, we consider it unlikely that there will be any extensive obstacles to the development.

Management

The management team has extensive experience in the helium sector, which more importantly crosses the technical and commercial divide. We consider the team at Georgina to be a feature that differentiates it from its peers.

We consider there to be two prerequisites required to navigate from the prospect definition, through exploration to delivery of commercial cash flow, namely: (i) a strong technical base in oil and gas; and (ii) an experienced commercial team able to access, navigate and leverage the oft opaque helium market.

Georgina Energy has a strong blend of technical and commercial experience, which we believe further bolsters the Company's offering to investors, beyond the value of the underlying asset. The management team are summarised in Table 15.

Table 15 Georgina Management

Role	Brief CV
Anthony Hamilton MD & CEO	Mr Hamilton is a Managing Partner, Westmarket Capital Plc, is a Fellow of the Institute of Directors in London and is an Accountant by profession with over 35 years of extensive experience in international business, from investment advisory to Oil & Gas, exploration and production of gold, diamonds, base metals and property development. Mr. Hamilton's experience has encompassed the role as CEO of an Oil & Gas company in South Texas, USA, raising US$55 million for the refurbishment and re-establishment of operations producing 28mm cfpd, managing both onshore and offshore operations. Mr. Hamilton is also accredited with developing Zimbabwe and North Americas first commercial diamond mines with hands on expertise to develop assets from discovery to production.
Peter Bradley Non-Executive Chairman	Peter Bradley is a corporate lawyer with over 35 years' experience advising corporate transactions including capital raising and mergers & acquisitions on private and public markets. He has advised start-ups to some of the world's largest listed companies. He has practised extensively in both Europe and Asia, both as a partner in City firms and in-house.
Mark Wallace Executive Finance Director	Mr Wallace is a Managing Partner, Westmarket Capital Plc, holds a Bachelor of Economics and Accounting, is a Chartered Accountant and has over 25 years expertise in the global financial markets having held positions with internationally renowned Investment Banks and advisory firms including Standard Chartered Capital Markets, Cantor Fitzgerald and Credit Lyonnais in London and Natwest Capital Markets in Sydney. Mr. Wallace has significant experience and expertise in funding for the development of production and operational assets across numerous commodities and extensive knowledge of off-take markets.

Role	Brief CV
John Heugh Executive Technical Director	Mr Heugh holds a BSc (Hons) in geology and has completed 6 units of drilling engineering from the University of Texas, Austin. He has extensive experience in oil and gas exploration geology, including wellsite geology, project generation, operations geology and engineering support. John was the founding Director and MD for 15 years of Central Petroleum Ltd., the biggest acreage holder in Australia of prime petroleum exploration and appraisal ground (70 million acres). Extensive helium exploration and target identification expertise. Orchestrated over $500 million of JV expenditure potential. Discovered over one trillion tons of coal, a 300 km2 tight gas sand prospect, generated the first horizontal well onshore in Australia, and delivered first commercial oil to surface in the western Amadeus ever. Pioneered the promotion of unconventional (shale gas and oil) in Australia in 2007.
Robin Fryer Non-Executive Director	Robin is a Financial consultant, experienced listed company director and audit committee chairman; former Partner with Deloitte, roles included Global Mining and Metals Industry Leader and Global Audit Managing Director; audit committee financial expert for regulatory requirements; many years of international experience advising major multinational companies in the mining, manufacturing, construction and service sectors in Europe, Australia, the Americas, and Africa; experience includes IPO's, mergers and acquisitions, financial reporting, internal control, risk management and internal audit.
Bob Liddle OAM Native Title & Indigenous Affairs Consultant	Mr Liddle has over 50 years of relevant experience in Australian indigenous and corporate relationship building and one of Australia's most experienced exponents. He has consulted for Central Petroleum, Santos, CRA limited, Western Mining Corporation, BHP Gold and Hexagon Energy to name but a few. He has also consulted to the US Government agencies on American Indian relationships. Bob was awarded the Order of Australia Medal (OAM) in 2013 for his services to the Oil & Gas exploration and production industry.
Roy Pitchford Non-Executive Director	Roy is currently the Non-Executive Chairman of MMM Plc. Roy was previously CEO of Vast Resources Plc listed on the London Stock Exchange. He brings over 30 years' executive and managerial expertise. During his career in the resource development arena. He has held the position of Chief Executive Officer for formerly AIM quoted African Minerals Limited, African Platinum plc and Zimbabwe Platinum Mines Ltd (listed on the ASX). Roy is a qualified Chartered Accountant (CA (Z)).

Source: Georgina Energy

Appendix

Valuation Approach

OAK values gas assets using discounted cash flow ("DCF") for the period over which access to the economic benefits of the respective working interest can be reasonably deemed to apply.

In this respect, OAK considers it reasonable to assume that assets are held to the end of the first producing period, if regulatory approval is required prior to the extension of the licence term, or decommissioning if the licence is held by production or the regulator has a strong track record of extending licence terms for producing assets.

Within any model, there are three key elements; these are:

1. A realistic assessment of the production of hydrocarbons which can be highly detailed, depending on the point in the E/P Cycle;
2. A hydrocarbon price, appropriate to the intention of the valuation; and
3. An adequate representation of the fiscal terms to the level required, including key tax shielding rules and regulations.

The valuation of exploration and production assets reflects not only the value of the cash flow from assets that have Reserves or Contingent Resources assigned to them but the "option" value to exploration assets, particularly when Contingent or Prospective Resources have been defined by drilling, seismic or other accepted technologies.

Valuation of Producing and Development Assets

For gas properties, expected future cash flows are estimated using future oil and natural gas prices and production and sales volumes. The estimated future level economic recoverability of ROPL's assets is based on a number of assumptions, including, but not limited to:

1. Future commodity prices;
2. Production and development costs;
3. Initial production rate and subsequent decline rate; and
4. Current fiscal regime.

For the purposes of the Valuation, OAK considers all SPE PRMS Categories, namely: (i) Low; (ii) Best; and (iii) High, for both Reserves and Resources. While we recognise that the valuation of gas assets can apply a broader scope than just the winning and sale of a respective assets' Reserves or Resources and commodity prices, for the purposes of the Valuation, we limit our scope to those cash flows resulting from sales, i.e., specifically eliminating that element of production that is either lost, consumed within the operation or has no sales value. Further, we do not consider there to be any tolling or processing revenues to be associated with Georgina's operation.

Valuing Appraisal and Exploration Assets

While it is accepted that the estimation of production curves and prices over long-dated projects is subject to uncertainty, some of these uncertainties can be mitigated through the use of hedging and other mechanisms.

The valuation of assets at the earlier stages of the exploration and production life cycle ("E/P Cycle") adds a further layer of complexity and uncertainty, which can only be addressed by making allowances for the greater risks associated with those assets at earlier stages.

OAK adjusts those assets at the early-stage development, appraisal and exploration stages using multi-nodal Expected Monetary Value ("EMV") methodology. We use this approach to reconcile the impact of a successful drilling campaign against the probability of success and the cost of reaching a position where the project's likelihood of success exceeds the probability of failure.

EMV returns the value of an asset based on the collective cost and probability outcomes for a range of factors. This values an asset ("NAV_D") as a risk adjustment to its success-based net present value ("NPV"), discounted at an appropriate discount rate (subscript "D") ("NPV_D"), corrected for the total chance of success and risk capital required to get the asset to the "go/no-go" decision (Equation 3).

$$NAV_{(D)} = (NPV_{(D)} \times CoS_T) - (C_R \times (1 - CoS_T)) \tag{3}$$

Where:

NAV_D	Net Asset Value	Currency Unit
NPV_D	Net Present Value	Currency Unit
CoS_T	Total Chance of Success	%
C_R	Risk Capital	Currency Unit

Chance of Success

OAK uses standard oil and gas multicomponent assessments in determining the CoS_T for estimation of EMV. CoS_T is considered to be comprised of two distinct and separate risk elements is a function of two distinct and separate risk elements; these are:

1. **Geological Chance of Success ("CoS_G"):** which measures the four elements required to have a technically successful accumulation of oil or gas, namely, source ("SR"), seal ("SL"), trap ("TP") and reservoir ("RV"); and

2. **Technical-to-Commercial Chance of Success (“CoS_C”):** which reflects the likelihood that once found, the accumulation proves commercial. OAK considers CoS_C to be further broken down into a number of elements, namely: economic deliverability (“ED”), threshold economic field size (“TF”), development design (“DD”), and development cost (“DC”).

It is often not possible to be precise in estimating the risks associated with those individual elements, as arriving at such estimates requires the application of qualitative judgements.

OAK considers the Geological Chance of Success (CoS_G) and its component elements to be driven by the results of geophysical and geochemical analyses and is hence quasi-scientific in its origin. Nevertheless, it is impossible to know with certainty prior to drilling the weight that can be assigned to each individual risk component.

Based on these principles, it is possible to apply judgements based upon a balance of probability and provide a qualitative determination of the risks; Oak Securities illustrates these qualitative risks in Table 16.

Table 16 Qualitative Risk Values

Risking (%)	Elements
5 – 30%	Unfavourable
30 – 50%	Questionable
50%	Neutral – Equal probability of positive or negative outcome or lack of data
50 – 70%	Encouraging
70 – 100%	Favourable

Source: Oak Securities data

Technical-to-Commercial Chance of Success (CoS_C) takes the concept of qualitative determination of risks a step further as the judgement of the chance of success is purely a function of the valuer’s perspective.

Furthermore, each component that makes up the CoS_C is interdependent on the other and is significantly impacted by other factors, such as prevailing hydrocarbon price, development strategy, hydrocarbon fluid (liquid or gas) and production rates.

For exploration assets, this can be especially problematic as very little is known about the performance of the hydrocarbon accumulation ahead of drilling. Nevertheless, of those exploration wells that have been deemed to be a technical success, i.e., those wells that are recorded as discovered hydrocarbons, 33% have been subsequently appraised and found to be commercial.

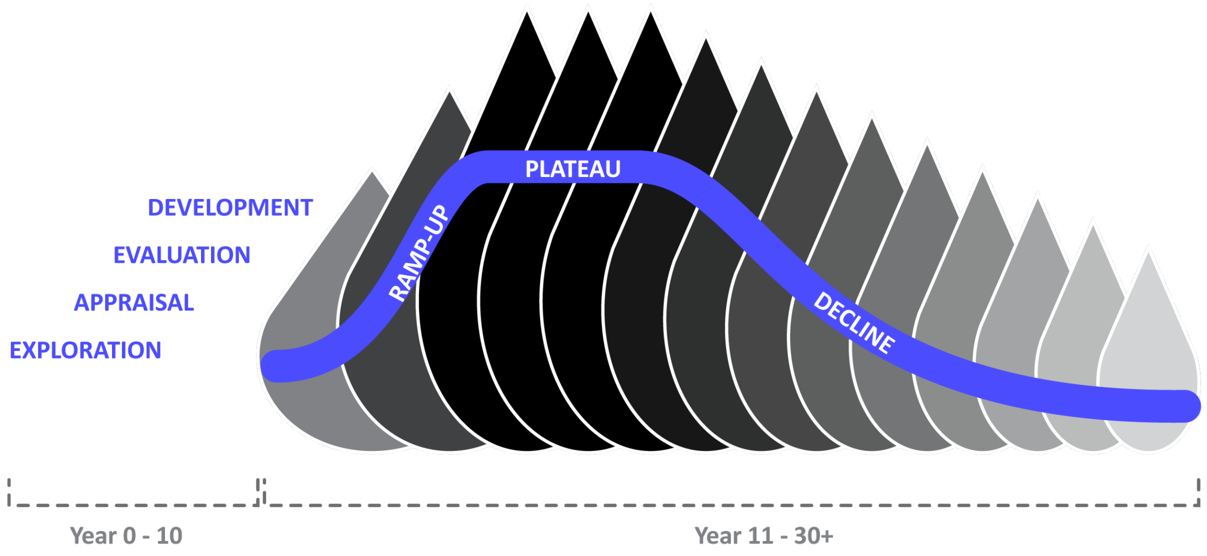
Consequently, for those assets at the exploration stage, OAK considers CoS_C to vary up to 33% and subject to change depending on a range of factors such as the prevalence of the sales gas in the respective basin, the prevalence of infrastructure and a ready market in which to valorise any gas won.

Production and Phasing Assumptions

The production profile applied to any prospective asset subject to assessment, such as that illustrated in Figure 15, will have a significant bearing on the overall value.

Figure 15 Generalised Production Profile

Illustrative Investment and Production Profile



Source: Oak Securities data

The contour that the production profile follows has an especially acute impact on the valuation at greater discount rates. Consequently, it is essential that the production profile that is applied is both fair and appropriate.

For early-stage appraisal assets that have not yet been subject to extensive direct measurement and engineering study, but the productive horizons are known and are located in mature hydrocarbon basins that contain analogue wells, it is possible to leverage historic production performance to produce a Type Curve.

For later-stage appraisal assets, or those pending development approvals, the production profile applied is often the result of direct measurement and engineering studies conducted on the productive horizons, often producing horizon specific production profiles, which can either be co-mingled, developed independently, or developed sequentially.

For exploration assets however, it is accepted that the geological and technical-to-commercial risk factors are the dominant contributors to the risk adjustment and variability in valuation. In these circumstances, therefore, it is acceptable to apply generalised production and investment profile, onshore or offshore, as illustrated by Figure 15.

Depending on what point in the E/P Cycle the particular asset is at, the period used to estimate the valuation can be long-term, in some cases up to 45 years. For DCF valuation modelling of exploration, development and appraisal assets, generalised capital investment and production profile can be adopted, made relatively longer or shorter for many factors, such as location, ease of doing business, etc.

Monte Carlo Simulation

In using a probabilistic valuation approach, OAK uses Monte Carlo analysis to assess the impact that one, or a range of engineering inputs, such as SPE PRMS Category, well productivity, recoverability, and project inputs such as timing and costs, have on valuation.

To study the impact that the variability in one or any number of inputs has, an estimate for the range of that variability around its base case estimate has been developed by Oak Securities, creating an input estimate envelope (the "Envelope"). Crystal Ball™ then varies each input randomly within the Envelope over a set number of Iterations, which are then reported.

From the results, the following can be captured:

1. **90% probability** ("Low" or P_{90}) that the quantities recovered will equal or exceed the associated estimate;
2. **50% probability** ("Best" or "P_{50}") that the quantities recovered will equal or exceed the associated estimate; and
3. **10% probability** ("High" or P_{10}) that the quantities recovered will equal or exceed the associated estimate.

In the assessment of oil and gas assets, OAK believes it appropriate that the valuation needs to reflect what has a high probability of being delivered and must offer a fair reflection of what will most likely be delivered. However, OAK also recognises that the High case can provide the reader with an understanding of what might be possible.

Nevertheless, OAK considers it appropriate to use those estimates associated with the Best case, which have at least a 50% probability (P_{50}), that the value realised will equal or exceed the Best estimate.

For the Valuation, Oak Securities reports the P50 (Proved plus Probable) SPE PRMS category for Reserves and Resources, being 2P (Best) for Reserves, 2C (P_{50}) for Contingent Resources and 2U (P_{50}) for Prospective Resources.

Research Analyst Disclosures

Dr Zac Phillips BEng (Hons.) MSc PhD MIChemE SPE AAPG

Zac has in excess of 29 years' experience in oil & gas and finance, working for companies such as BP, Chevron, Merrill Lynch and ING Barings. His wide experience base, allied with his deep background and experience in Chemical and Petroleum Engineering, has uniquely positioned him to undertake both finance and technical roles, enabling him to focus on the economics of investment in oil & gas, and its assessment, on a range of projects from process change implementation, to operating plants and companies.

Zac's extensive oil & gas financial and technical experience has ably lent itself to the valuation of exploration and producing Oil & Gas assets, especially where complex financial structures define companies' access to the economic benefits of ownership. Latterly, Zac was the CFO to Dubai World's Oil & Gas business (DB Petroleum), with responsibility for risk management, valuation and the authoring of investment proposals. During this time, Zac valued in excess of 152 transactions with a combined transaction value of in excess of $63bn.

Zac has an Honours Degree in Chemical Engineering from Wales, a PhD in Chemical Engineering from Bath University and a MSc in Petroleum Engineering from Heriot Watt. He is a member of the Society of Petroleum Engineers, Institute of Chemical Engineers, American Association of Petroleum Geologists and the Association of International Energy Negotiators.

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