

12 February 2024

Significant lab results, flow rate testing next

NEED TO KNOW

- Lab and log results from the Mbelele1 & 2 wells, at the North Rukwa project in Tanzania, show high concentrations of helium in multiple, thick, porous and permeable reservoirs.
- Next steps are to test the wells for flow, confirm lab results of core samples and shape development plans.
- The recent capital raising funds the next phase of appraisal, in parallel with commercial and design activities leading to production.

NHE's initial two wells have discovered helium in several thick and permeable reservoirs. Lab results from samples taken in deeper parts of the wells, have returned an average He concentration of 2.46%, along with other inert gases, predominantly nitrogen. Reservoir thickness has been revised 3X higher at Mbelele1 and 2X higher at Mbelele2.

Results to date are very encouraging and justify the next phase of activity, which is flow rate testing at both wells. A \$14M capital raising completed on 30 January 2024 funds this phase in addition to advancing commercial and design aspects required for production.

The helium market is small, but valuable. Historical supply is as by-product of LNG is constrained. Naturally occurring helium not associated with fossil fuels, is globally rare, but demonstrated by NHE (and other explorers) in Tanzania.

Investment Thesis

NHE's helium prospect inventory is large in a global context. Potential revenue from production would be transformational. Initial drilling results and lab results are positive and justify further investment to appraise and plan for development.

Exploration to date has been successful with positive reservoir parameters and very good helium concentrations. The results to date de-risk the geological model, and justify the additional investment required to advance the project.

Helium prices are high and very small production volumes from production wells can generate large cashflows.

Valuation: A\$0.56 (Prev A\$0.79)

MST's valuation is a risked-assessed cash flow from a potential Mbelele Helium project, which is speculative at this time. Our valuation change is due to the increase in shares on issue.

Risks

The upcoming testing phase may not deliver commercial results. NHE will require funding after the current exploration phase which may not be available. The Helium market is volatile. There is operational risk in Tanzania.

Equities Research Australia

Energy

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Noble Helium Limited (ASX:NHE) is an exploration company focused on discovery and development of naturally occurring Helium in the Tanzania. The size of the prospective resource would be transformational for Noble in the success case.

<https://noblehelium.com.au>

Valuation	A\$0.56 (previously A\$0.79)
Current price	A\$0.099
Market cap	A\$51M
Cash on hand	A\$15.2M (est. 30 Jan 2024)

Upcoming Catalysts / Next News

Period

1H CY24	Flow rate testing & development planning
1H CY24	Discussions with helium off-takers

Share Price A\$



Figure 1: Financial summary. Year end June 30, all figures in A\$ unless otherwise stated.

Market Data	Y/E Jun 30	A\$	Lo	Hi
Share price	A\$/sh	0.125		
52 week range	A\$/sh		0.085	0.29
Shares on issue	M	467		
Perf shrs + Options	M	0		
Market Cap	A\$M	58		
Net Cash	A\$M	15		
Enterprise Value	A\$M	43		

Valuation multiples	2022A	2023A	2024e	2025e	2026e
EPS (us cents)	0.00	0.00	0.000	0.000	0.000
PE	-	-	-	-	-
DPS	-	-	-	-	-
Yield-%	-	-	-	-	-
EBITDAX/sh (US cents)	-	-	-	-	-
P/FCF	-	-	-	-	-
EV/EBITDAX	-	-	-	-	-
EV/(2P+2C)- A\$/ GJ	1.1				
Revenue/MM boe	-	-	-	-	-
EBITDAX/Sales-%	-	-	-	-	-
Net cash (US\$M)	8.5	4.0	9.4	12.2	0.0
ND/(ND+E)	-	-	-	-	-

Realised prices	2022A	2023A	2024e	2025e	2026e
Gas- A\$/ GJ	na	na	na	na	na
Oil-US\$/bbl	na	na	na	na	na
A\$/US\$ rate	0.700	0.650	0.650	0.650	0.650
Helium- US\$/mcf			450	450	450

Production (Net)	2022A	2023A	2024e	2025e	2026e
Gas- Bcf	0.00	0.00	0.00	0.00	0.00
Liquids (MMbbl)	0.00	0.00	0.00	0.00	0.00
Helium	0.0	0.0	0.0	0.0	0.0

Prosp. Resource (Bc)	Best	High	Mean
Helium (100% basis)			
Mboe (100%)	8.2	36.8	15.7

Valuation-A\$	Unrisked	Risk	Bcf	A\$/mcf	Value
Mbelele Dev	251	50%	15.7		193
Other			160.0	0.33	53
Total Helium assets					246
Cash (Est)					16
Provisions					0
Debt					0
Total equity value					262
Shares					467
Value Per share					0.56

Chart

Income statement	2022A	2023A	2024e	2025e	2026e
Gas Revenue	0.0	0.0	0.0	0.0	0.0
Oil Revenue	0.0	0.0	0.0	0.0	0.0
Total sales	0.0	0.0	0.0	0.0	0.0
Sales Revenue	0.0	0.1	0.0	0.0	0.0
Opex	0.0	0.0	0.0	0.0	0.0
Royalties	0.0	0.0	0.0	0.0	0.0
G&A	2.7	2.4	2.0	2.0	2.0
EBITDAX	-2.7	-2.4	-2.0	-2.0	-2.0
Exploration exp.	0.0	0.0	0.0	0.0	0.0
Depreciation	0.0	0.1	0.1	0.1	0.1
EBIT u/l	-2.7	-2.4	-2.1	-2.1	-2.1
Finance charges	0.0	0.0	0.0	0.0	0.0
Tax	0.0	0.0	0.0	0.0	0.0
NPAT-underlying	-2.7	-2.4	-2.1	-2.1	-2.1
Significant items	0.0	-0.3	0.0	0.0	0.0
Reported NPAT	-2.8	-2.7	-2.1	-2.1	-2.1
Share count at EOP (M)	183	267	467	567	567

Cash flow	2022A	2023A	2024e	2025e	2026e
Receipts	0.0	0.0	0.0	0.0	0.0
Payments	-1.4	-3.4	-2.5	-2.0	-2.0
Payments for E&A	0.0	0.0	0.0	0.0	0.0
Interest & other	0.0	0.1	0.0	0.0	0.0
Net cash from ops.	-1.4	-3.3	-2.5	-2.0	-2.0
Exp & Devb capex	-1.6	-14.0	-30.8	-10.2	-10.2
Acquisitions / other	0.0	0.0	0.0	0.0	0.0
Net investing	-1.6	-14.0	-30.8	-10.2	-10.2
Equity issuance	11.3	12.9	38.7	15.0	0.0
Debt Issue	0.0	0.0	0.0	0.0	0.0
Divs / other	0.0	0.0	0.0	0.0	0.0
Net cash Financing	11.5	12.9	38.7	15.0	0.0
Increase in cash	8.4	-4.4	5.4	2.8	-12.2
Cash at EOP	8.5	4.0	9.4	12.2	0.0

Balance sheet	2022A	2023A	2024e	2025e	2026e
Cash	8.5	4.0	9.4	12.2	0.0
Rcvbils / Inventory	0.4	1.8	9.0	11.0	11.0
P, P & E	1.6	15.2	15.3	15.5	15.7
Exploration & eval	0.3	0.2	30.8	40.8	50.7
other	0.0	0.9	0.9	0.9	0.9
Total Assets	10.8	22.3	65.6	80.5	78.4
Payables	0.2	1.2	1.5	2.3	2.3
Debt	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	7.0	9.7	9.7
Total liabilities	0.2	1.2	8.5	12.0	12.0
Total equity	10.5	21.0	57.0	68.5	66.4

Source: MST Access

Post drilling lab results justify more field activity.

The North Rukwa project lies within the East African Risk System (EARS) in Tanzania and has the potential to host the world's largest naturally occurring helium resource. The drilling of wells at Mbelele#1 and #2 in October & November 2023 was the culmination of seven years of exploration endeavour and background activity in Tanzania.

NHE has invested ~\$40M to date, into drilling two wells, and evaluation with tier one companies for logging, sampling and lab testing. It hasn't been a cheap exercise, but the results at this point justify the investment to date in our opinion and justify further work to advance the North Rukwa project.

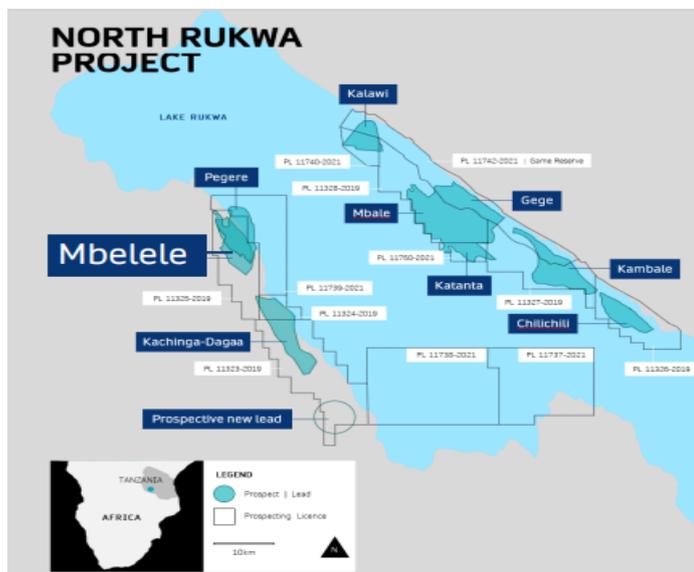
To be clear. This is still an exploration and data gathering phase. The next steps are to test the wells for their potential to flow naturally from the free gas cap, and deeper zones. This phase will inform concepts for production and shape economics.

A locational recap

NHE's Mbelele well sites and drilling camp serving its North Rukwa project are about 1000 km from Tanzania's main city, Dar Es Salaam. Figures 2 & 3 show the location.

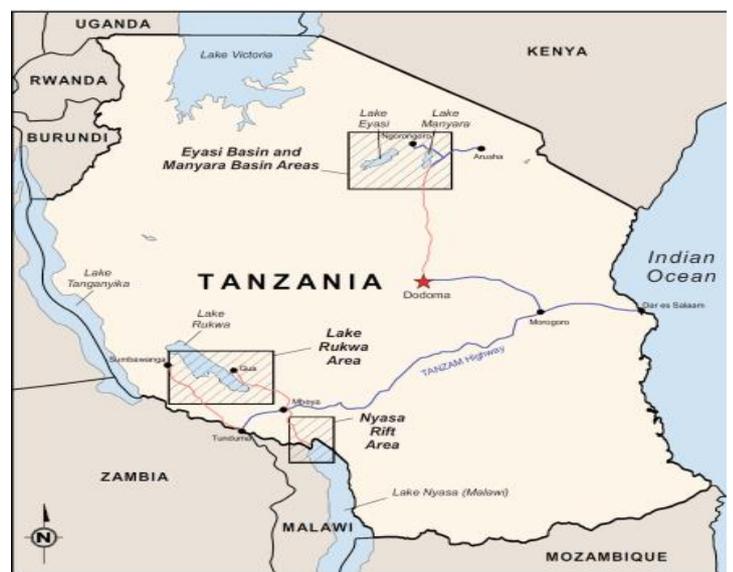
Operating in this part of the world is not cheap, as NHE has to import equipment, labour and fund camps and staging areas. A significant investment has already been made by NHE to establish and operate in this remote part of the world. Although a sunk cost, it's a foundation for a larger presence that will be required in the event of a future development.

Figure 2: North Rukwa Project area.



Source: NHE ASX Presentation, 18 August 2023

Figure 3: NHE project areas in Tanzania



Source: NHE ASX Presentation 18 August 2023

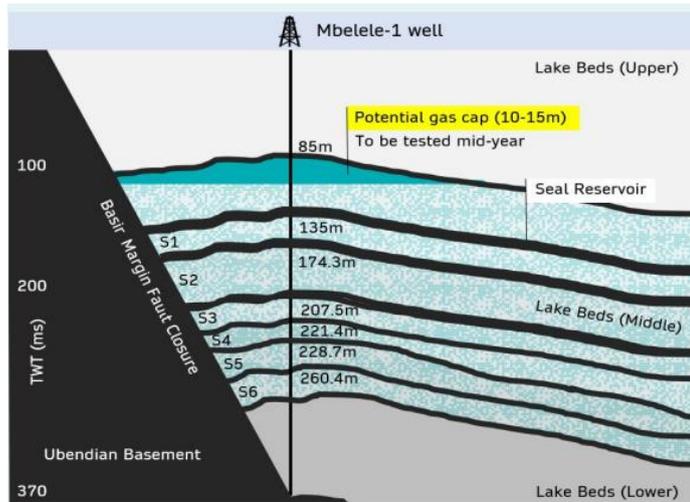
Mbelele #1 was drilled to a total depth of 450m and penetrated numerous prospective zones with gross reservoir which was initially interpreted to be 48m, but subsequent data analysis has increased this to 148m, a ~3X increase.

Mbelele#2 was drilled to a depth of 850m and encountered 163m of reservoir, which has been subsequently increased after further analysis to .271m, a 2X increase.

Laboratory results reported on 7 February 2024 have returned helium concentrations which average 2.5%, along with other inert gases, predominantly nitrogen, and oxygen and traces of hydrogen. There is an absence of hydrocarbons. The concentration figure in isolation is not meaningful, but obviously the higher the better because that entails fewer wells and surface facilities in a future development. For context, commercial operations around the world typically have <<1% helium (figure 5) however these operations are not "green" because the helium is a by-product of natural gas production.

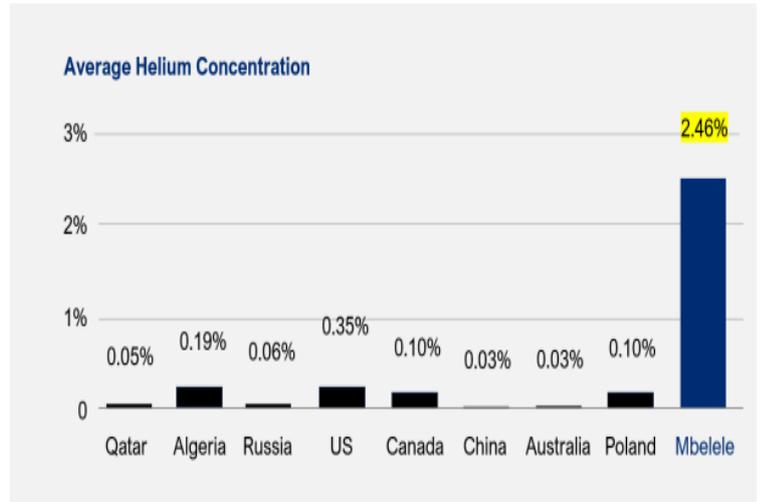
NHE states the reservoirs exhibit high permeability and porosity, which are positive attributes for production and recovery of reservoir fluids, either naturally or via pumping. The next phase of activity is to test the two wells for production potential. The interpreted free-gas cap in Mbelele1 may flow naturally to surface, but the deeper reservoirs which are water saturated may require pumping to lower reservoir pressure and aid the dissolution of the valuable gases contained there-in.

Figure 4: Section of the “Lake Bed” reservoirs



Source: NHE

Figure 5: NHE’s lab results in a global commercial context



Source: NHE and US Geological survey

Valuation: A\$0.56 (A\$0.79 previously)

Our principal valuation tool is a DCF of expected future cash-flows from a proposed commercial helium development, in the event the helium resource is proven, at the Mbebele location, appropriately risked for exploration and development risk. Refer to figure 6.

We have developed project cashflow forecasts and there are many scenarios depending upon input factors, with the key ones and our assumptions outlined as followed:

- Helium prices ex-field. We have reviewed several public company corporate presentations for pricing guidance. Figures indicated by NHE and Helium One are perhaps the most relevant and are in the range US\$350-450/Mcf. We choose US\$450 as a base case. At this time, prices for ex-field helium are higher at ~\$650/Mcf.
- Capital costs. We have reviewed a sample of projects in the USA where small projects of <0.1 Bcf p.a. can be erected for US\$40-60M. We assume US\$50M for an initial plant with throughput capacity of 20MMcfd of raw gas p.a.
- Opex costs. We have reviewed a sample of projects that disclose annual per-unit opex in the range US\$15-40/mcf.
- Timing of start-up: We assume at the earliest, 2026.
- Project capacity. Helium plants are typically modular, so production rates come in blocks. We assume initial production of 0.18 Bcf p.a. from gross gas production of 20 MMcfd of raw gas yielding 2.5% helium.
- Financing. NHE would need to fund project capex beyond the size of the current balance sheet. We make no assumptions as to the funding mechanisms.
- We assume Tanzania fiscal terms of a 16% carry, 4% royalty +export levy, and 30% corporate tax.
- Cash-flows are discounted at a post-tax WACC of 12%.
- The US\$ per-share valuation is converted to A\$/share at a spot rate of 65c.
- Our recast valuation reflects the recent issuance of an additional 107M shares at 13cps.

Cash-flow Model results

Our preliminary modelling for a helium project to exploit approximately 2 Bcf p.a. of helium resource over >15 years Mbebele resource returns a project NPV of US\$251M, and an IRR of 49%. This figure is risked at 50% in our valuation to account for uncertainty in financing and construction.

Figure 6: SoP Valuation

Asset Value (A\$M)	Unrisked	Risk	Volume-Bcf	A\$M	Basis
North Rukw a Basin					
Initial development - Mbebele	251	50%	15.7	193	DCF Risked at PoG
Other prospects			160	53	\$0.33/mcf
Total Helium assets				246	
Cash				16	Est Jan 30, 2024
Total equity value				262	
Shares on issue				467	
Value Per share				0.56	

Source: MST Access.

Risk Factors

- **Exploration and geology.** NHE's acreage has very little historical well data, and the geological understanding to now is derived from surface samples, aeromagnetic and gravity surveys, and interpretation of 2D and seismic surveys, as well as two "conventional" oil and gas wells drilled in the 1980's. Drilling, and the application of the latest well-data measurement and interpretation tools are required to confirm the geology and presence of helium in sub-surface traps.
- **Helium prices.** The Helium market is small, and over the past 10 years there have been periods of oversupply and under supply and volatile prices. Prices currently at record highs, and there is significant downside risk if the spate of new entrants, including NHE, find too much Helium and glut the market.
- **Sovereign risk.** Tanzania is a developing nation and previous administrations have not been as open to foreign investment and mining as the current. Fiscal terms could change.
- **Economics.** Compared to the USA or Canada, mobilising equipment and operating in Tanzania is higher cost. There are not many established oil and gas service providers, the inland is remote and well costs, process plant capital costs, and operating costs are likely to be higher than those in North America.
- **Capital availability.** NHE is a small company, does not have an income stream and will need ongoing support from equity investors and joint venture partners for continuity of operations through the exploration phase. External funding may be difficult and / or expensive to source.
- **Operational risk.** NHE has not previously developed a helium project and has no historical operational experience.

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