

## ASX Release

23 March 2023

### Noble Helium to test two “company-making” targets in maiden drilling program in Q3 2023

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#### Highlights

- Priority drill targets finalised following successful completion of 3D seismic program
  - These first two targets host a globally significant, summed unrisks mean recoverable helium volume of 16.5 Bcf, selected for their high probability of discovering gas-phase helium
  - “Primary” helium potential represents an opportunity to secure global supply
  - Drilling program on track for Q3 2023 with farm-out discussions well underway
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**Noble Helium Limited (ASX:NHE) (“Noble Helium” or “the Company”)** is preparing for its maiden drilling campaign at its North Rukwa Helium Project in Tanzania in Q3 2023 after finalising its first targets along the project’s western flank.

The two wells, Mbelele-1 and Pegere-1, will target independent plays, selected from the Company’s North Rukwa prospect and lead inventory for their high probability of demonstrating gas phase helium. The Company estimates a combined unrisks mean recoverable helium volume of 16.5 billion cubic feet (Bcf) for these two wells, developed from its North Rukwa lead inventory of 9 leads with an unrisks summed mean of 176 Bcf. For reference, global annual helium production is approximately 6 Bcf and helium is selling on long-term wholesale contracts at a minimum US \$450 per thousand standard cubic feet (Mscf), or 50 times the price of LNG.

**Noble Helium Chief Executive and Co-founder, Mr Justyn Wood**, said the size of these first targets meant that either would be “company making” and discoveries of primary helium deposits of this scale, where helium is the primary economic resource, would be material to the world’s helium inventories.

“The Company has a high degree of confidence in the potential of these wells to discover gas-phase helium in the subsurface of the Rukwa Basin, one of Tanzania’s East African Rift System basins, which has the potential to be the world’s third largest helium reserve behind USA and Qatar and the largest primary reserve,” Mr Wood said.

The targeted mean prospective resource in these first two wells already equates to approximately half the US Federal Helium Reserve at its maximum fill, with a further 7 leads under review in North Rukwa.

“Interest in the project, as one would expect given its potential value and strategic implications, continues to be strong.”

Mbelele-1 will target a mean Prospective Helium Resource of 8.1Bcf in high quality Neogene reservoirs, trapped within a Basin Margin Fault Closure (BMFC) against basement. Total depth for the well is circa 800m true vertical depth (TVD).

With the benefit of the new exploration data, Mbelele is much larger in area than interpreted from legacy data. The Company has developed an internal resource estimate for Mbelele-1 based on the Neogene parameters used by NSAI, to provide a level of consistency between the two estimates (Table 1).

Mbelele-1	Recoverable Helium in gas phase (Bcf)			
	<i>P90</i>	<i>P50</i>	<i>Mean</i>	<i>P10</i>
Neogene Reservoirs	2.5	6.3	8.1	15.7

**Table 1:** Mbelele-1 Prospective Helium Resource range

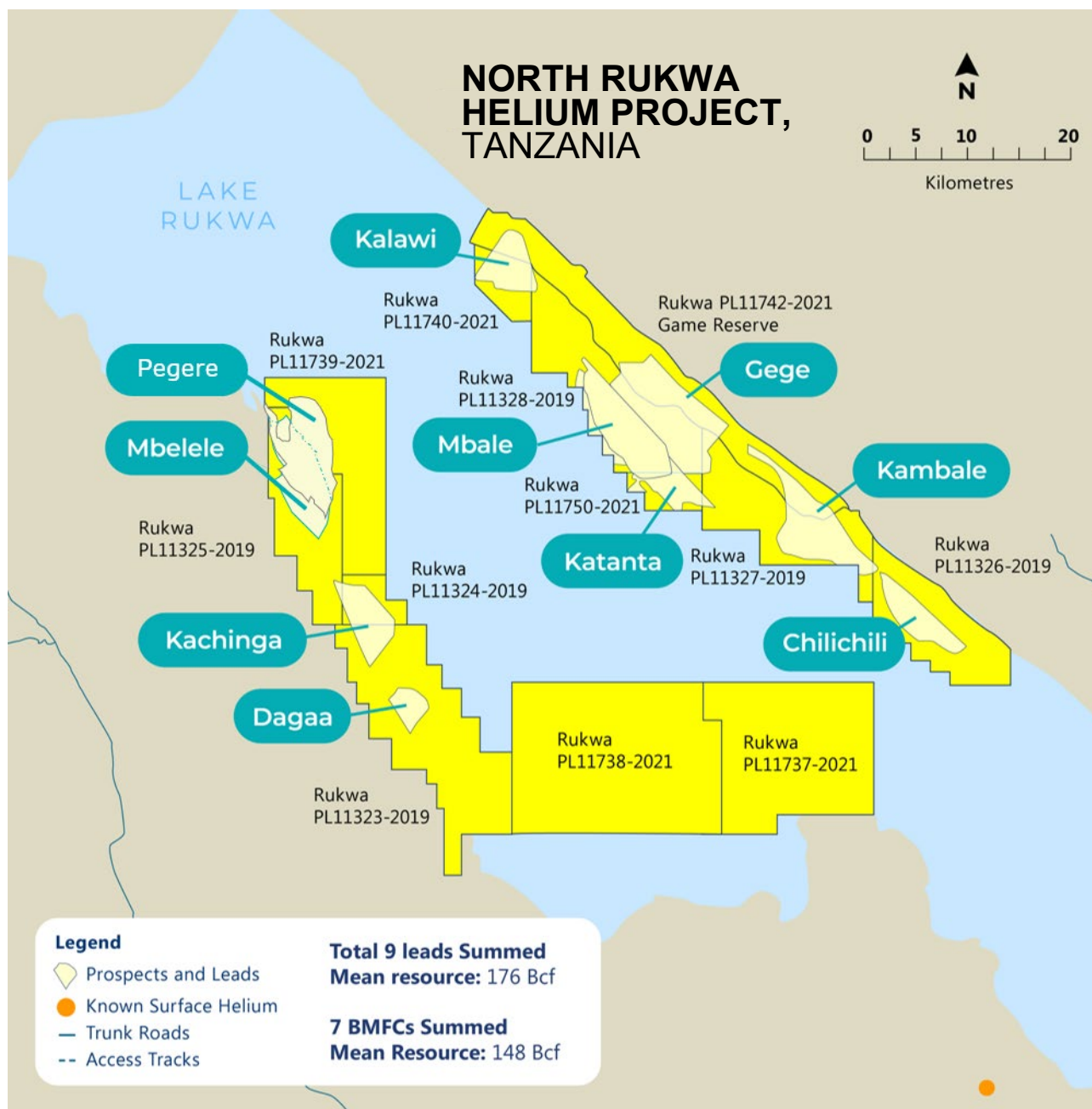
Pegere-1 will target a mean Prospective Helium Resource of 8.4 Bcf in deeper but also high quality Oligocene-aged Nsungwe and Cretaceous-aged Galula reservoirs, trapped within a combination BMFC/basement onlap play. This basement onlap play has also been successfully tested elsewhere in the East African Rift. Depth to basement is circa 1,200m TVD.

The Company has similarly developed internal resource estimates for the Pegere-1 targets (Table 2).

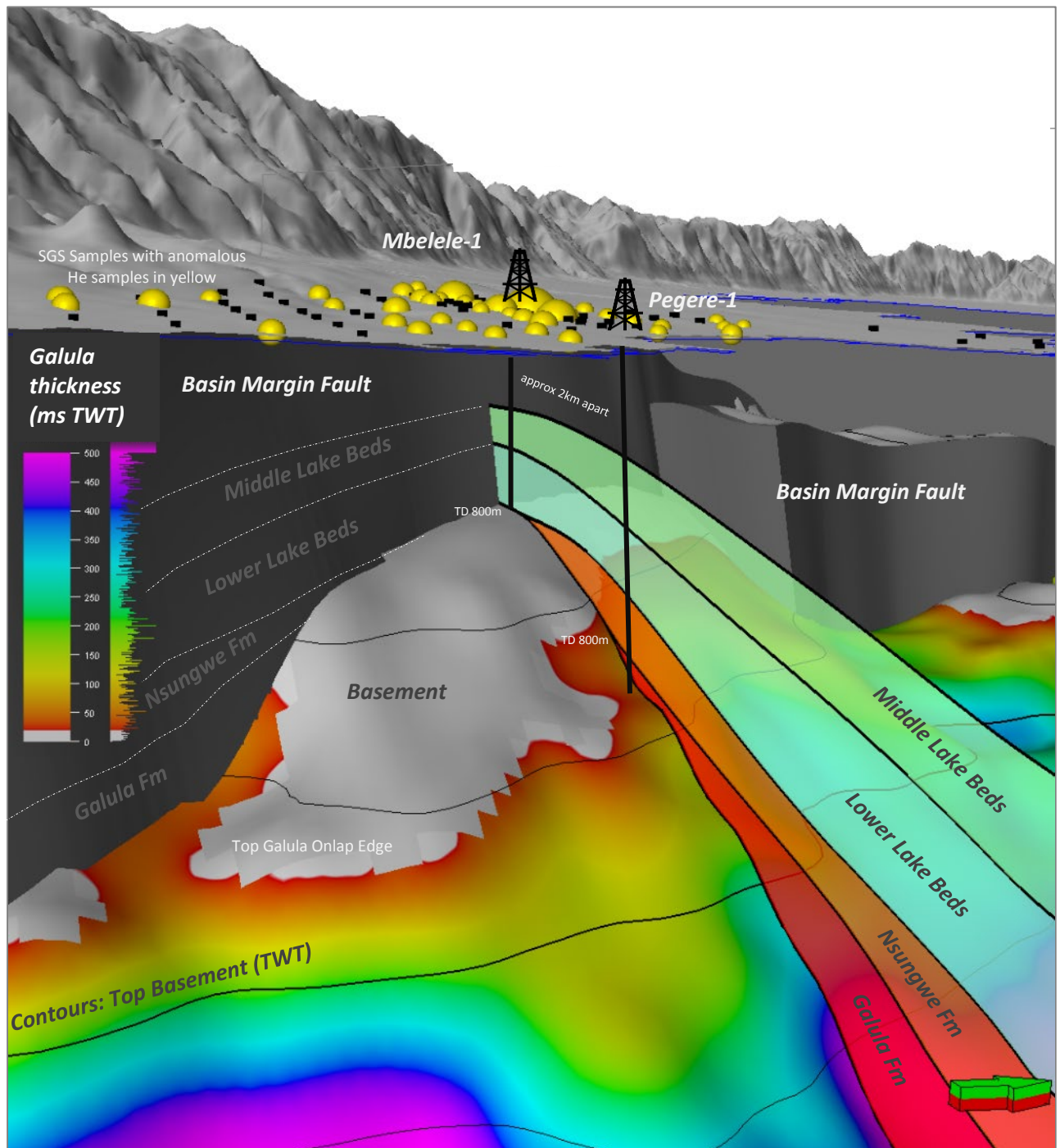
Pegere-1	Recoverable Helium in gas phase (Bcf)			
	<i>P90</i>	<i>P50</i>	<i>Mean</i>	<i>P10</i>
Nsungwe Fm	1.1	3.6	4.5	9.1
Galula Fm	0.7	2.6	3.9	9.9
Combined			8.4	

**Table 2:** Pegere-1 Prospective Helium Resource range

Noble Helium is well advanced in identification of a drill rig that is capable of efficiently and cost-effectively completing both wells as planned. Discussions around a farm-out are also progressing well under the management of Lab Advisors in the UK.



**Figure 1:** North Rukwa Project showing primary helium prospects.



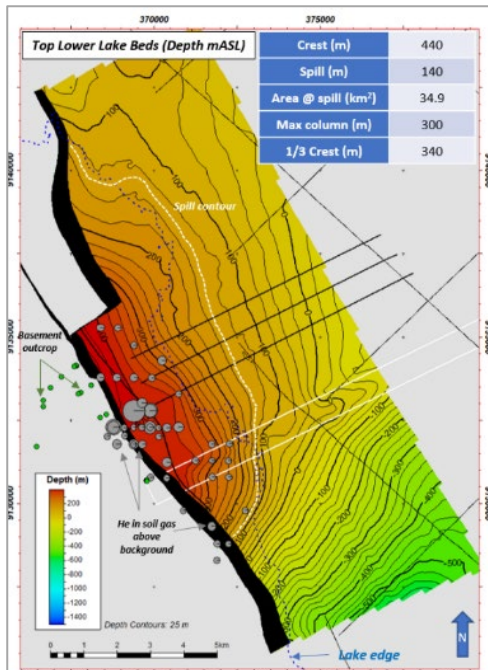
**Figure 2:** The two targets, Mbelele-1 and Pegere-1, host a combined unrisks mean recoverable helium volume of 16.5Bcf.

The planned drilling campaign follows a comprehensive de-risking program undertaken across the basin over the last 11 months, including soil gas surveys, airborne gravity gradiometry, reservoir and seal studies, 2D and 3D seismic surveys and leading-edge helium charge modelling. Individually and collectively, these studies point to a high probability of discovering gas phase helium in the subsurface at Mbelele and Pegere and proving a prolific and effective helium system in the north Rukwa Basin.

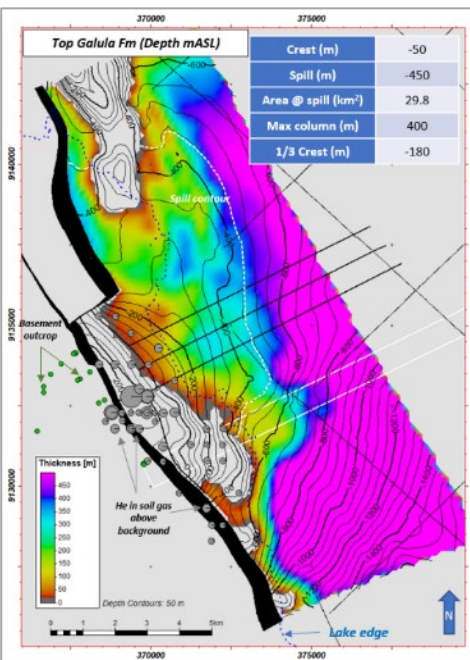
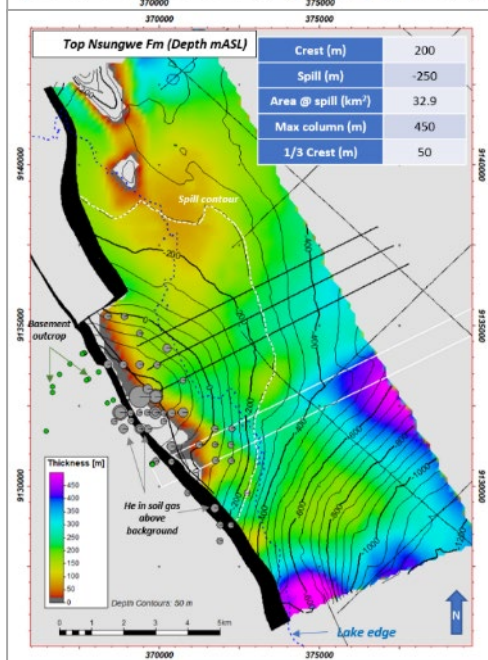
The price for liquid helium under long-term contracts had risen more than 200% over the past two years to US\$450 per thousand standard cubic feet (Mscf) for long term Tier 1 contracts, and a recent



short term NASA contract at over US\$1,100 / Mscf. The increasing and un-substitutable use of helium in MRI machines, manufacture of semiconductors and aerospace ensures strong demand. At the same time, supply-side constraints such as depletion of the US BLM helium system and the delayed and geopolitically challenged Amur supply from Russia continue to reduce helium's availability under Helium Shortage 4.0.



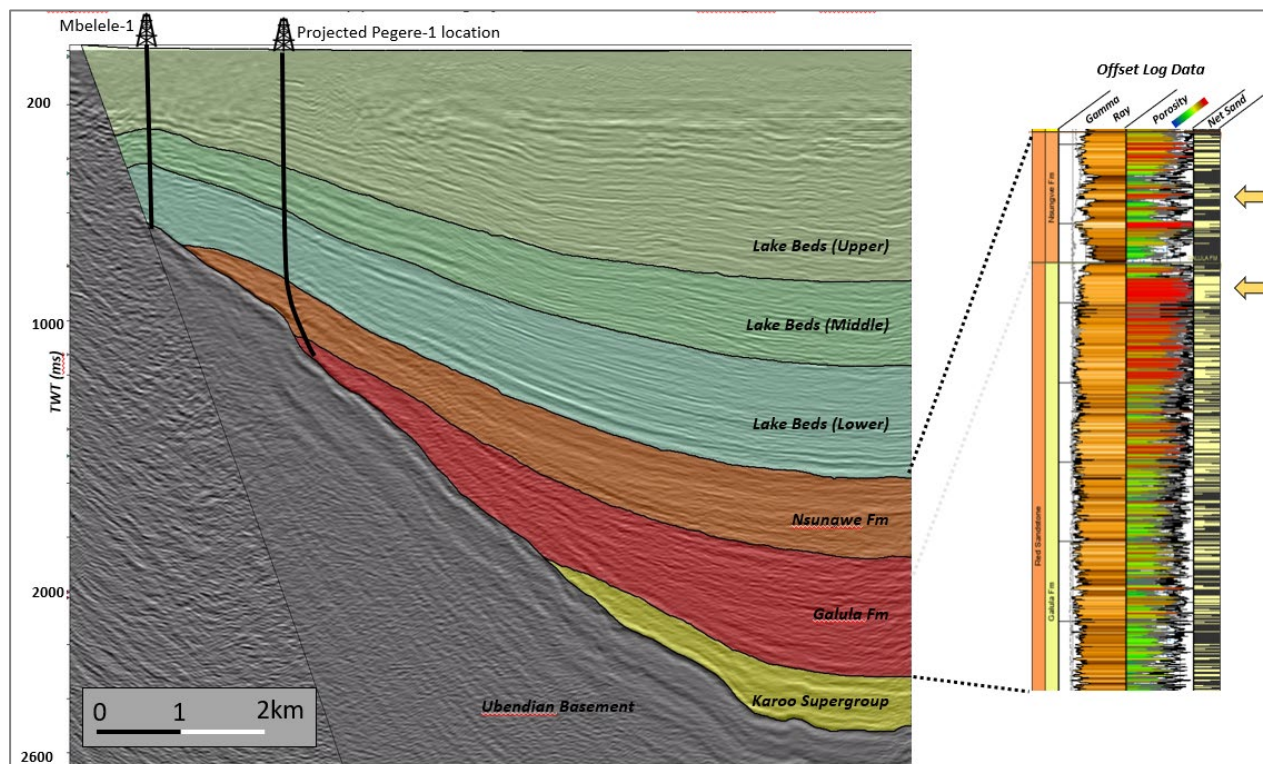
**Figure 3:** Mbelele will test a basin margin fault closure within the Lake Bed Group with potential for multiple, stacked, reservoirs.



**Figure 4:** Pegere will test a combination onlap / basin margin fault closure within the Nsungwe and Galula Formations.

Both wells will be near-vertical onshore wells, which the Company has intentionally selected to ensure operational success for maiden drilling. Mbelele-1 will be drilled close to the Basin Margin Fault while Pegere-1 will be drilled approximately 1.5km north-east of Mbelele to test the deeper reservoirs that are not reachable with the vertical Mbelele borehole.

Mbelele-1 will be drilled first and Pegere-1 second, and as such provides an immediate appraisal opportunity for a discovery at Mbelele-1, potentially accelerating development.



**Figure 5:** Mbelele-1 will test a basin margin fault closure in Neogene reservoirs and Pegere-1 will test a combination onlap / basin margin fault closure within the Nsungwe and Galula Formations.

These two Prospects in our Tanzanian rift basin licences closely mimic the first oil and gas discoveries in the East African Rift basins in 2006, made by Australia's Hardman Resources Ltd, targeting BMFCs in Neogene aged reservoirs of the Albertine Graben of Uganda.

Between 2006 and 2015, 14 of these BMFCs were drilled in the Rift basins of Uganda and Kenya with a 100% oil and gas discovery rate, demonstrating the extraordinary capacity of the BMFC play type to retain natural fluids in the subsurface. The first Ugandan discovery, Mputa-1 was later followed by the Mputa-2 discovery in a basement onlap play, with similar play characteristics to Pegere-1.

Following those frontier-opening wells, nearly 4 billion BOE of oil and gas 2P reserves have been discovered in the East African Rift and the Ugandan oil is now the basis of a multi-billion dollar development.

***This announcement has been authorised for release on ASX by Noble Helium's Board of Directors.***

### For further information:

Justyn Wood  
Co-Founder and CEO  
Noble Helium Limited  
justyn@noblehelium.com.au  
+61 410 626 261

Gareth Quinn  
Managing Director  
Republic PR  
gareth@republicpr.com.au  
+61 407 711 108

### Forward-looking statements

This announcement may contain certain "forward-looking statements". Forward looking statements can generally be identified by the use of forward-looking words such as, "expect", "should", "could", "may", "predict", "plan", "will", "believe", "forecast", "estimate", "target" and other similar expressions. Indications of, and guidance on, future earnings and financial position and performance are also forward-looking statements. Forward-looking statements, opinions and estimates provided in this presentation are based on assumptions and contingencies which are subject to change without notice, as are statements about market and industry trends, which are based on interpretations of current market conditions. Forward-looking statements including projections, guidance on future earnings and estimates are provided as a general guide only and should not be relied upon as an indication or guarantee of future performance.

### Competent Persons Statement

The technical information provided in this announcement has been compiled by Mr. Ashley Howlett, Exploration Manager, Professor Andrew Garnett, Non-Executive Director, and Mr. Justyn Wood, Chief Executive Officer, all of Noble Helium Limited. The resource estimates have been prepared in accordance with the definitions and guidelines set forth in the Petroleum Resources Management System, 2018, approved by the Society of Petroleum Engineers.

Mr Howlett is a qualified geologist with over 20 years technical, and management experience in exploration for, appraisal and development of, oil and gas resources. Mr Howlett has reviewed the results, procedures and data contained in this announcement and consents to the inclusion in this announcement of the matters based on the information in the form and context in which it appears.

Prof. Garnett is currently the Director of the University of Queensland's research Centre for Natural Gas (CNG). Prof. Garnett is a former Non-Executive Director of National Energy Resources Australia, an Australian government industry growth initiative and a former reviewer for natural gas for the IEA's World Energy Outlook series. Prof. Garnett is a current Non-Executive Director of the Australian Gas Industry Trust and has worked with the Queensland government, Petroleum and Gas Inspectorate on Well Construction Codes and Health and Safety and with Industry on Well Integrity Modelling.

Mr Wood is a petroleum geophysicist with over 25 years of E&P industry experience. Mr Wood has an outstanding track record of value creation with a global career in technical and managerial roles with majors and super-majors Chevron and Repsol and at juniors Hardman Resources and Jacka Resources Australia.

### Cautionary Statement for Prospective Resource Estimates

With respect to the Prospective Resource estimates contained within this report, it should be noted that the estimated quantities of gas that may potentially be recovered by the future application of a development project relate to undiscovered accumulations. These estimates have an associated risk of discovery and risk of development. Further exploration and appraisal is required to determine the existence of a significant quantity of potentially moveable helium.



## Green helium for a high-tech world.

Noble Helium is answering the world's growing need for a primary, ideally carbon-free, and geo-politically independent source of helium. Located along Tanzania's East African Rift System, the Company's four projects are being advanced according to the highest ESG benchmarks to serve the increasing supply chain fragility and supply-demand imbalance for this scarce, tech-critical and high-value industrial gas.

Our flagship North Rukwa Project has an independently certified, summed unrisks mean Prospective Helium Resource of 176 billion cubic feet (equivalent to approximately 30 years' supply). The project lies within the Rukwa Basin, which has the potential to be the world's third largest helium reserve behind USA and Qatar.

Priced at up to 50 times the price of LNG in liquid form, helium is now essential to many modern applications as an irreplaceable element in vital hi-tech products such as computer and smartphone components, MRI systems, medical treatments, superconducting magnets, fibre optic cables, microscopes, particle accelerators, and space rocket launches – NASA is a major consumer. Rising demand and constrained supply are fuelling growth prospects within the global marketplace, particularly for cleaner "green helium" sourced from non-carbon environments. At present, more than 95% of the world's helium is produced as a by-product of the processing of hydrocarbon-bearing gas.

Additionally, Noble Helium has commissioned the first ever Helium Atlas, with an exclusive five-year agreement allowing the Company to identify additional prospective areas to target for diversification. The Atlas uniquely positions Noble Helium as a world leading helium explorer.

