PURE RESOURCES LIMITED | ASX:PR1

Pure Resources Partners with US Department of Energy (DOE) Oak Ridge National Laboratory on Rare Earth Recovery from Garnet Hill

Strategic Partnership Projects Agreement executed with UT Battelle, LLC, operator of Oak Ridge National Laboratory (ORNL) under U.S. Department of Energy (DOE) Prime Contract, to develop an economical method for recovery of Heavy Rare Earth Elements and Yttrium from Garnet Hill industrial garnet.

HIGHLIGHTS

- Pure has executed a formal Strategic Partnership Projects (SPP) Agreement (No. NFE 25 10985) with UT Battelle, LLC, the facility management contractor operating Oak Ridge National Laboratory (ORNL) under U.S. Department of Energy Prime Contract DE AC05 00OR22725.
- Program titled "Development of an Economical Method for the Recovery of REE Values from Industrial Garnet" will develop a commercial flowsheet for extraction of Heavy Rare Earth Elements plus Yttrium (HREE+Y) from Garnet Hills andradite garnet.
- Rare earth separation sits at a critical value inflection point in supply chains serving permanent magnets, electrification, defence systems and advanced manufacturing.
- Partnership complements the Rice University IP Research and Development Collaboration to research carbon nanotube fibre (CNTF) thermal management systems for advanced electronics with a focus on Garnet Hills graphite.
- Pure will continue to refine its US downstream strategy focusing on the downstream applications within the defence industry for garnet derived from the Company's 100% owned Garnet Hills Project.

ANNOUNCEMENT

DOE National Laboratory Partnership to Unlock Rare Earth Recovery from Garnet Hill

Pure Resources Limited (ASX: PR1) ("Pure" or the "Company") advises that it has entered into a formal Strategic Partnership Projects (SPP) Agreement (No. NFE 25 10985) with UT Battelle, LLC, the facility management contractor operating Oak Ridge National Laboratory (ORNL) on behalf of the U.S. Department of Energy under Prime Contract DE AC05 00OR22725 ("Agreement"). Under the Agreement, ORNL will undertake a research and development program titled "Development of an Economical Method for the Recovery of REE Values from Industrial Garnet", targeting the extraction and purification of Heavy Rare Earth Elements plus Yttrium (HREE+Y) from Garnet Hills andradite garnet.

Pursuant to the key material terms of the Agreement, the program comprises four research tasks utilising andradite garnet from the Garnet Hills Project over a fixed term concluding 31 March 2027. The four research tasks comprise (1) identification of high HREE+Y garnet feedstock, (2) digestion experiments to liberate REE+Y values into aqueous solution, (3) application of selected separation and purification protocols, and (4) final reporting. Pure's total financial commitment under the Agreement is capped at US$100,000 for the term of the Agreement, which is consistent with the Company's ordinary course operational spend on chemical and metallurgical test work on the garnet derived from the Company's Garnet Hills Project, does not result in any change in the Company's anticipated expenditure and is not material in the context of the Company's market capitalisation.

Pure may retain title to Subject Inventions it makes under the engagement, subject to the United States Government retaining an irrevocable, paid up, non exclusive, non transferable, worldwide licence to practice the invention on behalf of the United States, and subject to Pure's reporting and DOE patent waiver policy obligations. Subject Inventions made by ORNL remain governed by ORNL's prime contract with the DOE.

COMMENTARY

> *"Executing a Strategic Partnership Projects Agreement with Oak Ridge National Laboratory strategically positions Pure Resources inside the US Department of Energy's (DoE) critical materials ecosystem and establishes a second value pathway for Garnet Hill.*
>
> *We are stacking rare earth recovery on top of our MIL SPEC abrasive program, delivering a complete US downstream strategy from a single Australian hard rock source.*
>
> *Our mine to market strategy continues to strengthen as we extend Pure's participation further downstream, with the clear objective of maximising returns for shareholders."*
>
> **— Rocco Tassone, Interim CEO** Pure Resources Limited

DETAIL

Overview of the ORNL and DOE Relationship and Program Scope

Oak Ridge National Laboratory is the U.S. Department of Energy's largest multi program science and energy laboratory, operated on behalf of the DOE by UT Battelle, LLC. ORNL is a central node in the DOE's critical materials agenda and co hosts the Critical Materials Innovation Hub (formerly the Critical Materials Institute), which has generated numerous licensed technologies for REE recovery from alternative feedstocks including coal fly ash, magnet swarf and end of life permanent magnets.

The Strategic Partnership Projects framework is the formal mechanism under which U.S. DOE laboratories partner with non-DOE sponsors where the work complements the DOE mission and leverages specialist laboratory capability not available in the domestic private sector. The ORNL Statement of Work expressly confirms that this project does not compete with the U.S. private sector, as no domestic companies are currently pursuing garnet as a REE+Y resource. The program principal investigator is Dr N. Alex Zirakparvar of ORNL's Chemical Science Division, a published specialist in garnet geochemistry whose prior research independently identified the HREE+Y endowment of certain garnet populations.

- Task 1, identification of garnet deposit(s) with elevated REE+Y suitable for extraction experiments, delivering high precision REE+Y concentration data.
- Task 2, digestion experiments to assess the economics of REE+Y liberation into aqueous solution, delivering cost estimates and effectiveness evaluation.
- Task 3, application of selected existing REE+Y separation protocols to digested garnet solutions.
- Task 4, final project report and industrial design pathway suitable for patent and commercialisation.

DETAIL – SECTION B

Overview of Rare Earth Importance, Value Add for Garnet Hill and U.S. DoD Strategy

The DOE 2023 Critical Materials Assessment and the USGS 2022 Critical Minerals List both classify the Heavy Rare Earth Elements (Dysprosium, Terbium, Erbium, Thulium, Ytterbium and Lutetium) together with Yttrium as high supply risk critical materials in both near and long term horizons. HREE+Y are essential inputs to the neodymium iron boron (NdFeB) permanent magnets that underpin electric vehicle traction motors, offshore wind turbines, precision guided munitions, radar, sonar and submarine main propulsion drives. Dysprosium and Terbium in particular confer the high temperature coercivity required in defence and aerospace magnet applications. Global HREE+Y production is heavily concentrated in a single foreign jurisdiction, with the United States currently importing substantially all of its HREE+Y requirement.

For Pure the material point is geological and commercial. Andradite ($Ca_3Fe_2(SiO_4)_3$) is structurally receptive to the substitution of HREE into its dodecahedral site and, in skarn hosted settings such as Garnet Hill[1], may carry anomalous HREE+Y grades reflecting the calc silicate host geochemistry and the fluid pathways associated with skarn mineralisation. Economically viable HREE+Y recovery, if achieved under the ORNL program, may transform Garnet Hill from a single commodity industrial minerals asset into a dual pathway industrial and critical minerals asset, without reallocating resource between end markets.

The HREE+Y targeted under the program are mission critical inputs to U.S. DoD platforms and munitions including the F 35 Lightning II, Virginia class and Columbia class nuclear powered submarines, precision guided munitions, AESA phased array radar, electronic warfare suites and directed energy weapons. The Company intends to commence a structured U.S. Department of Defense engagement program, running in parallel with the NAVSEA abrasive qualification pathway, with a view to identifying grant, co investment, offtake and qualification pathways across the Department of Defense (including Defense Production Act Title III, the Office of Strategic Capital, and the Industrial Base Analysis and Sustainment program), the Department of Energy, and via the U.S. Australia Critical Minerals Framework and AUKUS Pillar 2, the Australian Department of Defence and Department of Industry, Science and Resources.

- Mobilisation of representative Garnet Hill feedstock to ORNL for Task 1 characterisation and Task 2 digestion.
- Initiation of formal U.S. Department of Defense engagement, leveraging the ORNL relationship as the technical anchor.
- Parallel engagement with the U.S. Australia Critical Minerals Framework working group and Austrade.
- Ongoing market updates as material milestones are achieved.

AUTHORISATION

Approval & Release

This announcement is approved for release by the Board of Pure Resources Limited.

Mr Quinton Meyers
Non-Executive Chairman
Pure Resources Limited

INVESTOR & MEDIA CONTACTS

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[1] Extends Outcropping Garnet Trend to 3.3km on Mining Lease – 11 December 2024

ABOUT

Pure Resources Limited is an ASX-listed advanced materials and critical minerals company pursuing an integrated mine-to-market strategy - pairing 100% ownership of an upstream graphite and garnet asset in Western Australia with a funded downstream R&D collaboration in high-performance carbon nanotube fibre.

> ***"CNTFs are not just an incremental improvement — they represent a step change in materials capability. Through advanced materials science, they unlock lighter, stronger and more conductive systems that redefine performance across defence, energy and advanced manufacturing. This is not evolution; it is a fundamental revolution in what materials can do."***

01 UPSTREAM · GARNET HILLS

The Company's 100% owned **Garnet Hills Project** provides upstream exposure to graphite and garnet under a granted mining lease in Western Australia.

The tenement package at Reedy Creek (M80/416, E80/3906, E80/4732, E80/3864) hosts mapped graphite sample locations, rock chip and garnet petrology samples, garneliferous outcrops and identified garnet skarns — supported by historical diamond, RAB and RC drilling.

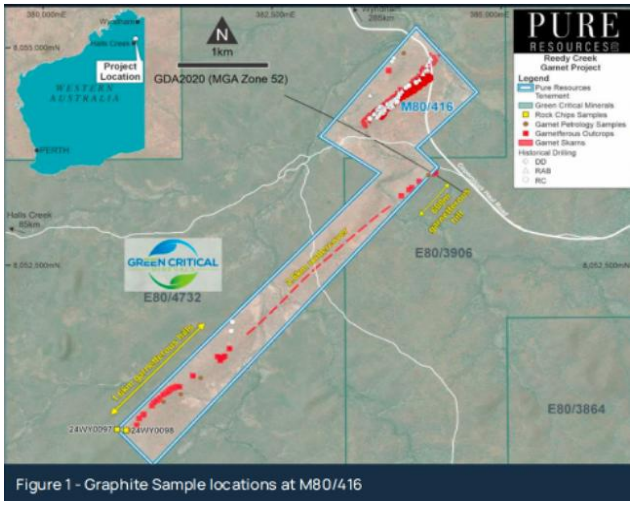

Fig. 1: *M80/416, Reedy Creek Garnet & Graphite Project*

● WESTERN AUSTRALIA · GRANTED MINING LEASE

02 DOWNSTREAM · CNTF WITH RICE UNIVERSITY

Pure is executing a downstream strategy anchored by a funded R&D collaboration with **Rice University**, focused on Carbon Nanotube Fibre (CNTF) thermal management technology for AI data centre infrastructure and defence applications.

The programme targets hierarchically structured textile heat exchangers — weaving and knitting CNTF technical yarn into multi-ply cores, braided sheaths and woven or knit spacer fabrics capable of step-change thermal performance.

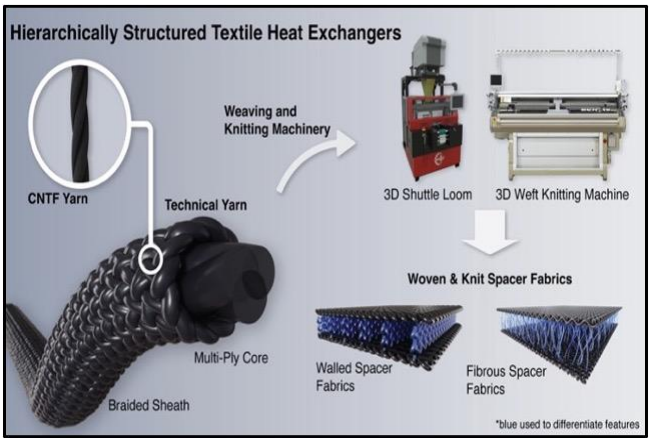

Fig. 2: *Hierarchically structured textile heat exchangers — CNTF yarn to woven & knit spacer fabrics.*

● RICE UNIVERSITY · FUNDED R&D COLLABORATION

DISCLAIMER

FORWARD-LOOKING STATEMENTS

*This announcement contains forward-looking statements concerning Pure Resources Limited (ASX: PR1) (**"Pure"** or the **"Company"**) and its current expectations, intentions and projections regarding the Company's future operating and financial performance, business plans, projects, strategies, prospects and the markets in which it operates. Forward-looking statements can generally be identified by the use of words such as "anticipate", "believe", "expect", "intend", "may", "plan", "project", "potential", "estimate", "target", "forecast", "guidance", "should", "will" and similar expressions.*

PREVIOUSLY REPORTED INFORMATION

This announcement contains references to Exploration Results and related geological information for the Garnet Hills Project that have been previously reported by the Company in accordance with the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the "JORC Code 2012"). The relevant prior market announcements are:

- *"Extends Outcropping Garnet Trend to 3.3km on Mining Lease" – 11 December 2024*

In accordance with ASX Listing Rule 5.23, the Company confirms that:

a) *it is not aware of any new information or data that materially affects the information included in the relevant original market announcements;*

b) *all material assumptions and technical parameters underpinning the Exploration Results in those market announcements continue to apply and have not materially changed; and*

c) *the form and context in which the Competent Person's findings are presented in this announcement have not been materially modified from those original market announcements.*

Copies of the relevant market announcements are available on the Company's ASX platform under ASX code PR1 and on the Company's website at www.pureresources.com.au.