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ASX Announcement

25 September 2025

Acquisition of Rice University's Flash Joule Heating Technology for PFAS

Highlights:

- ECT has entered into a binding agreement to acquire 100% of the issued shares in Terrajoule**.**
- Terrajoule holds an exclusive option with William Marsh Rice University (**Rice University**) to licence Rice University's proprietary flash joule heating (**FJH**) technology for the purposes of remediating soil which has been contaminated by Per- and polyfluoroalkyl substances (**PFAS)** and/or heavy metals.
- Due to their carbon-fluorine bond, PFAS are very slow to degrade in the environment and have been referred to as "forever chemicals".
- Laboratory testing has demonstrated >96% defluorination efficiency and 99.98% removal of perfluorooctanoic acid (**PFOA**), one of the most persistent and harmful PFAS pollutants.
- Exposure to PFAS has been shown to be harmful to the environment and to human health, and as such, the remediation of PFAS-contaminated soil and water is a large and growing market.
- Terrajoule's FJH technology —known as **Rapid Electrothermal Mineralisation** (REM)—uses a high-intensity electric pulse to rapidly heat soil to extreme temperatures, breaking down PFAS into harmless by-products such as calcium fluoride (CaF_2).
- The Company has also received firm commitments from sophisticated, professional and institutional investors to raise $3M (before costs) through a strongly supported placement of 50M Shares at an issue price of $0.06 per Share. Peloton Capital acted as the sole Lead Manager to the Placement.

Environmental Clean Technologies Limited (ASX: **ECT**) ("**ECT**" or "**Company**") is pleased to announce it has entered into a binding share purchase agreement (**SPA**) to acquire 100% of the issued shares in Terrajoule Pty Ltd (**Terrajoule**) (the **Acquisition**). Terrajoule is a private Australian company which holds an exclusive option with Rice University, based in Houston, to licence Rice's FJH technology for the purpose of remediating soil contaminated by PFAS and/or heavy metals. Completion of the Acquisition is subject to the satisfaction of a number of conditions precedent, including Terrajoule entering into a formal binding licence agreement with Rice University on the terms and conditions detailed in Schedule 2 (**Licence Agreement**).

Following completion of the Acquisition, ECT will secure access to Rice University's PFAS remediation technology. Developed by Professor James Tour and Rice University, the FJH process, known as Rapid Electrothermal Mineralisation (REM), applies a powerful, short electric pulse to soil mixed with a conductive material, rapidly heating it to 1,000°C within seconds. This extreme but controlled heat breaks the strong carbon-fluorine bonds in PFAS, destroying them and converting them into harmless calcium fluoride (CaF_2) from calcium naturally present in soil. Laboratory studies have shown over 96% defluorination efficiency and 99.98% removal of perfluorooctanoic acid (PFOA), one of the most persistent and harmful PFAS pollutants.

Unlike conventional methods that merely remove or transfer contaminants, REM delivers near-complete destruction without secondary aqueous waste, enhances soil quality, and is cost and energy-efficient.

On the announcement, ECT's Chairman, Faldi Ismail, said:

"This Acquisition marks a significant strategic move for ECT as we aim to expand our innovative solutions. ECT is focused on developing a diverse portfolio of high-impact and disruptive technologies, with our PFAS remediation solution leading the way in close collaboration with Professor Tour and Rice University, whose groundbreaking work has already delivered successful outcomes for several companies.

"The Company is committed to creating scalable and innovative processes that demonstrate substantial commercial potential across various high-growth markets. PFAS, heavy metal contamination and other toxic organics are pressing global environmental issues that require effective solutions. Following completion of the Acquisition, ECT will have the opportunity to leverage world-class expertise, scale and commercialise technology that restores soil health and contributes to a cleaner and safer environment."

The technology's inventor, Professor James Tour, commented:

"Transforming scientific discovery into practical solutions is one of the most gratifying parts of research and it is incredibly rewarding to see this technology progress from lab development by my team at Rice University to the capable hands of ECT, whose resources and vision have the potential to bring it to scale. PFAS and heavy metals are among some of the most pressing environmental challenges that we face, and under ECT's stewardship, I believe this innovation has the potential to redefine soil remediation standards.

"Our laboratory results have been extremely positive, achieving 99.98% removal of perfluorooctanoic acid (PFOA), one of the most common PFAS pollutants. I look forward to collaborating with ECT, alongside my research team, to guide its commercialisation into markets where it can make a significant impact."

Corporate Strategy

The proposed Acquisition of Terrajoule is directly in line with ECT's strategy of investing in and developing innovative and scalable technologies with significant potential commercial applications. The Company's long-term strategy is to build a diverse portfolio of these technologies. The Company's recent focus has been on the development of a fertiliser product using its patented COLDry technology. The proposed acquisition of an exclusive licence to use Rice University's FJH technology for the purposes of remediating PFAS and heavy metals contaminated soil directly complements the ECT's existing development of its fertiliser product and diversifies and adds to the Company's technology portfolio in line with its broader long-term strategy.

The Company remains committed to the development of its existing COLDry technology, and estimates that over the next 12 months, it will spend approximately $471,000 on development of its existing technology and approximately $400,000 on development of the FJH technology. As with any budget, this spend will be continually assessed by the Company and is subject to change.

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The Company has recently completed a consolidation of its issued capital and restructured its Board, and following the Acquisition will look to continue to add technical and corporate expertise as it looks to fast-track the continued development of both its existing COLDry technology and the new FJH technology. The Acquisition also enables ECT to establish a relationship with renowned scientist Professor James Tour and his team at Rice University. The Company intends to draw on this relationship as it seeks to develop and commercialise the FJH technology.

Rapid Electrothermal Mineralisation in PFAS

PFAS (known as 'forever chemicals') are long-lasting, hazardous chemicals which pose a momentous health risk to all living organisms. They are used in a wide range of products, from cookware and food packaging to firefighting foam and have a unique chemical structure, which makes it extremely difficult to isolate and destroy them.

PFAS are found in trace amounts in water and soil in many locales due to widespread use and environmental persistence. There is typically a higher concentration near industrial sites, airports, and landfills. Traditional PFAS disposal methods are costly, energy-intensive and often generate secondary pollutants, prompting the need for innovative solutions.

However, Rice University's primary PFAS soil remediation technology, Rapid Electrothermal Mineralisation (REM), uses flash joule heating to fundamentally transform PFAS into harmless, naturally occurring minerals while preserving the soil's ability to support life.

The REM process works by inserting graphite or metal electrodes into the soil and applying a high-voltage, high-power current through the soil between the electrodes, generating temperatures exceeding 1,000 degrees Celsius in 1 to 60 seconds, depending on the size of the treated soil area. The intense heat breaks down the strong carbon-fluorine bonds in PFAS, converting them into inert, nontoxic fluoride salts, such as calcium fluoride, the natural and non-toxic mineralised form of fluoride in the environment. A conductive additive such as biochar, an environmentally friendly fertiliser, may also be mixed into non-conductive soils to facilitate the REM process.

Laboratory results demonstrated over 96% defluorination efficiency and 99.98% removal of perfluorooctanoic acid (PFOA), one of the most common PFAS pollutants. Analytical tests have confirmed the reaction produced undetectable amounts of harmful volatile organic fluorides, a common byproduct of other PFAS treatments, and eliminated the secondary waste typically associated with traditional methods such as incineration or landfill disposal. Additionally, the digging and transportation of exorbitant amounts of soil to remediation facilities is eliminated with on-site soil remediation.

The laboratory work conducted by Rice University has been published in the journal Nature Communications: https://doi.org/10.1038/s41467-024-49809-6. In accordance with protocol for publication in academic journals, Rice University's work has been peer reviewed internally by three independent reviewers (in accordance with industry standards). Further, multiple rounds of additional experiments were conducted before the work was accepted for publication.

The laboratory work conducted by Rice University initially involved proof-of-concept soil testing before and after REM treatment and showed that various PFAS mineralise with calcium. This analysis was proven using various analytical techniques, including liquid chromatography-mass spectrometry (LC-MS), nuclear magnetic resonance (NMR), x-ray diffraction (XRD), x-ray photoelectron spectroscopy (XPS), and infrared (IR) spectroscopy. The proof-of-concept testing used sample sizes of 10 g of PFAS-contaminated soil mixed with

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biochar as a conductive additive. For the 10 g samples, 1 second of REM treatment destroyed the PFAS and made calcium fluoride.

Following successful proof-of-concept testing, a kilogram-scale REM treatment was done to show the process's potential to scale to the commercial level. Scale-up testing used over 2 kg of PFAS-contaminated soil, and within 40 seconds of REM treatment, the PFAS was destroyed.

The proof-of-concept testing and kilogram-scale testing took place over a ~12-month period, where capacitor-based FJH systems were used for the REM treatment process. The current work being undertaken involves the development of a more efficient FJH power supply for REM, which will enable REM treatment to be conducted with significantly less energy and less biochar conductive additive in soil to reduce remediation costs.

The laboratory work has been conducted by Professor James Tour and his team at the Rice University. Initial QA/QC control measures were taken by laboratory PhDs at Rice University, who meet with Professor Tour on a weekly basis to review progress and data analysis. These measures were implemented with the FJH systems used as the power source, and with all analytical testing results on samples before and after REM treatment. As detailed above, Rice University's work was subject to an internal peer review prior to being published in Nature Communications.

The Board considers this technology to be highly complementary to ECT's existing portfolio, which is focused on commercialising innovative, sustainable solutions that transform problematic resources into valuable products. Just as ECT has advanced pathways for upgrading brown coal, recovering critical minerals and reducing emissions, the addition of PFAS remediation broadens the Company's reach into the global environmental remediation market.

Share Purchase Agreement

Under the terms of the SPA, ECT will acquire 100% of the issued shares in Terrajoule from third-party sellers (none of whom are related parties of the Company) in consideration for:

- 73,333,332 fully paid ordinary shares (**Consideration Shares**); and
- 66,666,666 performance rights (**Consideration Performance Rights**) comprising:
    - 33,333,333 performance rights which will vest and convert into Shares if, within 12 months, ECT announces that it has developed the FJH Technology such that it is able to remediate 5kg of soil within 30 minutes using a sustained electrothermal system; and
    - 33,333,333 performance rights, which will vest and convert into Shares if, within 24 months:
        - ECT announces the completion of the construction of an electrothermal remediation system, and demonstrates in-situ usability with a pilot demonstration; and
        - ECT announces that it has entered into a commercial contract with a third party under which it will generate at least US$2.5 million in revenue from the contract, or it receives non-dilutive project funding of at least US$2.5M.

Completion of the Acquisition is subject to (amongst other matters) ECT obtaining shareholder approval to issue the Consideration Shares, Consideration Performance Right and Shares under the Placement, ECT receiving firm commitments in respect to the Placement (refer below for details) and Terrajoule and Rice University executing the Licence Agreement (on the terms detailed in Schedule 2). The parties will utilise their best endeavours to satisfy the conditions precedent under the SPA by the end of 31 December 2025 (this date may be extended by agreement between the parties), and ECT intends to seek shareholder

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approval for the issue of the Consideration Shares and Consideration Performance Rights at a shareholders' meeting to be held in November 2025 (**EGM**).

The Consideration Shares, and Shares issued upon the vesting of the Consideration Performance Rights, will be subject to a six-month escrow period from the date of issue.

A summary of the material terms of the SPA are detailed in Schedule 1 of this announcement.

Placement

The Company is pleased to announce that it has received binding firm commitments from sophisticated, professional and institutional investors to raise $3M (before costs) through a strongly supported two-tranche placement of a total of 50M Shares at an issue price of $0.06 per Share (**Placement**).

The Placement will be completed in two tranches as follows:

- Tranche 1 – 8,333,333 Shares will be issued under the Company's existing Listing Rule 7.1 capacity at an issue price of $0.06 to raise $500,000 (before costs).
- Tranche 2 – subject to the Company obtaining shareholder approval, 41,666,667 Shares will be issued at an issue price of $0.06 to raise $2.5M (before costs).

Completion of the Tranche 1 Placement is expected to occur on or around 30 September 2025. Completion of the Tranche 2 Placement is subject to the Company obtaining shareholder approval to be sought at the EGM.

The Shares to be issued under the Placement will, upon their issue, rank equally with existing fully paid ordinary shares in the Company.

Funds raised from the Placement will be utilised primarily for the development of the FJH technology and the Company's existing technologies (refer above in respect to the Company's planned expenditures on its existing project and the FJH Technology), to repay the Company's outstanding convertible loan arrangements (if required) and for working capital purposes.

Peloton Capital acted as the sole lead manager to the Placement. The Company will pay Peloton a capital raising fee of 6% of the amount raised and, subject to shareholder approval, will issue to Peloton (and/or its nominees) 35M options each with an exercise price of $0.12 expiring three years from the date of issue (**Placement Options**). If the Placement Options are exercised within the first 12 months from the date of issue, in addition to the issue of Shares, option holders will also be entitled to receive an additional Option, each with an exercise price of $0.18 and expiring on the date that is 3 years from the date of issue of the Placement Options.

Appointment of Executive Chairman

The Company advises that Mr Faldi Ismail will transition from the role of Non-Executive Chairman to Executive Chairman, effective 1 October 2025. The change reflects the Board's view that Mr Ismail's increased involvement is appropriate as the Company advances its current strategic initiatives and operational priorities.

Mr Ismail brings significant experience in capital markets and business development, and has been actively engaged with the Company to date. His appointment as Executive Chairman will provide continuity of leadership and enable a more direct contribution to the execution of the Company's strategy.

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Mr Ismail's remuneration and incentives are included in Annexure A of this announcement.

Small Shareholding Sale Facility

The Company refers to the ASX announcement lodged on 23 September and advises that it is also seeking to conduct a Small Shareholding Sale Facility for shareholders whose holding of fully paid ordinary shares in the Company (**Shares**) has a market value of less than A$500 (**Small Parcel Holding**) at 7.00pm (Melbourne time) on 17 September 2025 (**Record Date**).

Refer to the ASX announcement dated 23 September 2025 for further details, including the key dates to the Small Shareholding Sale Facility and the letter to be sent to eligible shareholders.

This announcement is authorised for release to the ASX by the Board.

For further information, please contact:

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Forward-looking Statement

This announcement may contain forward-looking statements regarding future events or performance, including but not limited to projections of financial results, anticipated growth, and business strategies. These forward-looking statements are based on current expectations, assumptions, and projections that involve inherent risks and uncertainties. Actual results may differ materially from those anticipated due to various factors, including market conditions, regulatory changes, technological advancements, and economic conditions.

Investors are cautioned not to place undue reliance on forward-looking statements, which speak only as of the date of this announcement. The Company undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by applicable securities laws.

Investors should carefully consider the risks and uncertainties disclosed in the Company's periodic reports filed with the Australian Securities Exchange (ASX) and other regulatory authorities. Forward-looking statements are provided as of the date of this announcement, and the Company disclaims any obligation to update them, except as required by law.

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Schedule 1 – Material Terms of the SPA

Sellers	Third party sellers (none of whom are related parties of the Company), including Terrajoule shares held by Rice University and the lead professor of the FJH technology (which have been issued in advance of the parties entering into the Licence Agreement and will be acquired under the Acquisition)
Buyer	Environmental Clean Technologies Limited
Conditions Precedent	The conditions precedent to completion are (amongst other matters) as follows: ▪ ECT obtaining shareholder approval for the issue of the Consideration Shares, Consideration Performance Rights and Shares to be issued under the Placement; ▪ there having been no circumstances arising or existing as at the date of the SPA and at any time from that date until completion which would constitute or give rise to a breach of any of the Sellers' warranties; ▪ the execution of the Licence Agreement by Terrajoule and Rice University; and ▪ the Company undertaking, and receiving, valid applications and/or firm commitments in respect to the Placement, **(Conditions Precedent).**
Completion	Completion will occur five (5) Business Days after the satisfaction or waiver of the last of any outstanding Conditions Precedent.
Consideration	The consideration payable by the Company to the Sellers for the shares in Terrajoule comprises the issue of: ▪ **73,**333,332 Consideration Shares; and ▪ 66,666,666 Consideration Performance Rights with the following vesting conditions ○ 33,333,333 performance rights which will vest and convert into Shares if, within 12 months, ECT announces that it has developed the FJH Technology such that it is able to remediate 5kg of soil within 30 minutes using a sustained electrothermal system; and ○ 33,333,333 performance rights, which will vest and convert into Shares if, within 24 months: ▪ ECT announces the completion of the construction of an electrothermal remediation system, and demonstrates in-situ usability with a pilot demonstration; and

	▪ ECT announces that it has entered into a commercial contract with a third party under which it will generate at least US$2.5 million in revenue from the contract, or it receives non-dilutive project funding of at least US$2.5M.
Escrow	The Consideration Shares will be escrowed for a six month period commencing on the issue date of the Consideration Shares and the Shares issued following the vesting of the Consideration Performance Rights will be escrowed for a six month period commencing on the date of issue.
Exclusivity	Terrajoule and the Sellers must not: ▪ directly or indirectly solicit or encourage any expression of interest, offer or proposal by any person in relation to any competing transaction to the transaction contemplated by the SPA, including by way of a share sale, the sale or purchase of assets, a joint venture or another transaction or arrangement (Competing Proposal); or ▪ directly or indirectly participate in any negotiations or discussions or provide or make available any information (including by the provision of access to information to perform due diligence) in relation to, or in response to, any Competing Proposal.
Other Terms	Customary terms for an agreement of this nature, including in relation to representations and warranties.

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Schedule 2 – Indicative Material Terms of the Licence Agreement

Licensor	William Marsh Rice University (Rice University)
Licensee	Terrajoule Pty Ltd (Terrajoule)
Fees	Rice University will be entitled to fees as follows: ▪ an upfront licencing fee of USD$50,000; ▪ an annual licence maintenance fees of USD$10,000 per annum; ▪ an option sale fee of USD$3,000; ▪ a technology research fee of USD$350,000 over a 24-month period; and ▪ an assignment fee of USD$100,000 (if applicable).
Royalties	Rice will also be entitled to a royalty of 1.5% of gross sales attributable to the licence (subject to minimum payments of USD$10,000 in years 1 to 2, USD$20,000 in years 3 to 5 and US$30,000 from year six onwards).
Non-Sale Based Sublicence Consideration	Rice will be entitled to a non-sale-based sublicence consideration as follows: ▪ 30% from 0 to 24 months; ▪ 25% from 25 to 72 months; and ▪ 15% from 73 months onwards.
Milestone Payment	Rice will be entitled to a milestone payments as follows: ▪ USD$50,000 upon receipt of at least USD$7,500,000 funding for the development and commercialisation of licenced products; ▪ USD$75,000 upon achieving sales of USD$15,000,000 in cumulative worldwide gross sales of licenced products; and ▪ USD$150,000 upon achieving sales of USD$50,000,000 in cumulative worldwide gross sales of licenced products.
Exit Fee	Rice will be entitled to an exit fee of 0.5% of the aggregate consideration for a liquidation event, with respect to Licensee, or the pre-money valuation for an initial public offering with respect to Licensee.
Other Terms	Customary terms for an agreement of this nature.

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Annexure A - Terms of Executive Services Agreement

Commencement Date and Term	The appointment will commence on 1 October 2025.
FTE:	Full time
Base Salary:	A$10,000 per month
Termination provisions:	Either party may terminate the employment by giving 3 months' written notice.
Incentives:	Subject to shareholder approval under ASX Listing Rule 10.11, to grant Mr Ismail (and/or his nominee) 7,500,000 performance rights with the terms and conditions: • 3,750,000 performance rights will vest and convert into Shares upon the Company achieving a 30-day VWAP of $0.15 within two (2) years from the date of issue; and • 3,750,000 performance rights will vest and convert into Shares upon the Company achieving a 30-day VWAP of $0.25 within two (3) years from the date of issue; and The Board considers these incentive arrangements to be appropriate and will align Mr Ismail's interests with those of shareholders by rewarding the achievement of key market-based milestones. The Company intends to seek shareholder approval for the issue of these performance rights to Mr Ismail at the EGM.