

ECT Secures Initial MAX Phase Feedstock, Commencing MXene Scale-Up Programme

Initial precursor supply secured, unlocking the next phase of ECT's MXene strategy

Highlights:

- ECT has secured an initial 4kg supply of MAX phase precursor material, enabling the commencement of scale-up optimisation testing of its Flash Joule Heating-based MXene production process with Metallium Limited (ASX: MTM) at its Gator Point Technology Campus in Chambers County, Texas, USA.
- ECT has identified supply sourced with ECT's target military end-use applications in mind, and the Company continues to progress discussions with additional parties to diversify and expand precursor supply relationships.
- Securing feedstock enables ECT to commence scale-up optimisation testing pursuant to the engineering agreement with Metallium, targeting a near-term production rate capability of approximately 1kg of MXene per day (once fully optimised).
- Published research supporting ECT's Flash Joule Heating ("FJH") pathway reports MXene purity above 90% and processing costs up to approximately 74% lower than conventional chemical etching.
- ECT will utilise Metallium's existing FJH reactor infrastructure, process models and engineering expertise to accelerate optimisation and scale-up, without the need for ECT to independently develop equivalent reactor infrastructure.
- MXenes combine high conductivity with light weight, corrosion resistance, and the ability to be processed onto complex surfaces, making them well suited to EMI shielding and defence applications. ECT views the market's current modest size as a supply-side constraint, rather than limited demand, and sees this as a structural opportunity for FJH.

Environmental Clean Technologies Limited (ASX: **ECT**) ("**ECT**" or "**Company**") is pleased to announce that it has secured an initial 4kg supply of MAX phase precursor material, marking the commencement of scale-up optimisation testing for its MXene production process pursuant to the engineering agreement with Metallium previously announced on 4 August 2026.

The MAX phase is the layered ceramic precursor from which MXenes are made. It is the essential input to the process, and securing supply is the gating step for the programme to advance. With dedicated feedstock now secured, the programme moves into a structured campaign of repeated production.

Chief Scientist and CTO, Justin Sharp, said: *"Securing the MAX phase feedstock lets us move straight into scale-up optimisation with Metallium, without the lead time that would normally come with commissioning new reactor capacity. This is a meaningful step up from the feasibility work we completed earlier this year. Metallium's decision to dedicate reactors to this program, combined with the process models they've already built up through their own operational campaigns, means we can move at a pace that isn't typical for this industry, and without ECT having to fund or build that reactor infrastructure ourselves."*

"The procurement of the MAX phase powder on-site is an important practical step in that process. What makes this material compelling is its tunability, MXenes can be tailored across a range of properties, which is what gives them relevance across defence, electronics and other advanced materials markets, not just one application. Validating quality with the US Army is one important proof point on that path, but we're building this program with that broader commercial opportunity in view as we scale."

Supply Secured

The initial 4kg supply has been secured at a delivered cost of US\$3,475 per kilogram with quantity sufficient to support approximately 15-40 production runs through the initial phase of the programme.

Supply has been sourced with ECT's target military end-use applications in mind, with source and specification requirements for defence applications forming part of the Company's supplier selection criteria. In parallel, ECT is progressing discussions with additional parties with a view to diversifying and expanding its precursor supply relationships as the programme scales up. Precursor supply is the largest single input to MXene production, and building a secure, well-priced supply base is a necessary foundation for the Company's commercialisation strategy.

Programme and Next Steps

The material feedstock will be processed at Metallium's Gator Point Technology Campus in Chambers County, Texas. Pursuant to the engineering agreement, ECT retains ownership of all MXene products generated, while Metallium provides its FJH reactor infrastructure and engineering support on a processing-as-a-service basis. This gives ECT immediate access to a commissioned and validated reactor platform without the time, capital and execution risk of developing an equivalent capability independently, consistent with the Company's capital-light commercialisation model.

Published research supporting the FJH pathway (Nature Synthesis) reports MXene purity above 90%, yields of approximately 56–72% and processing costs up to approximately 74% lower than conventional chemical etching methods. First synthesis runs are expected to commence by October 2026.

Commercial Opportunity

MXenes are a high-value advanced material for which demand has long outstripped supply. For more than a decade the market has been constrained not by appetite for the material but by the industry's inability to manufacture it economically at scale.

Defence remains ECT's initial target market. As announced on 4 August 2026, MXene production is protected by various patents and Xenica is progressing discussions to obtain a licence to enable production of MXenes for military end use, which is expected to provide an important initial commercialisation pathway into one of the highest-value markets. Once scaled batches have been optimised, the Company also intends to work with the US Army to validate MXene quality against defence-grade requirements; this engagement has not

yet been formalised, and there is no assurance validation will proceed on the timeframe or terms currently anticipated. Completion of the Xenica acquisition remains subject to shareholder approval, which will be sought at the Company's shareholder meeting expected to be held in or around October 2026.

With the FJH production route, access to a commissioned commercial reactor platform and precursor supply now secured, ECT is assembling each of the elements required to address the industry's production constraint.

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