

From Lab Breakthrough to Commercial Deployment: turning carbon emissions into critical chemicals

Subtitle:

An Inside Look at Dioxycle's Journey

Dioxycle is building a new industrial standard to electrify chemical production and unlock cheaper, cleaner, and sovereign production of critical chemicals. Dioxycle's breakthrough technology is a modular electrolyzer that produces a full range of essential everyday chemicals from waste industrial carbon emissions, including e-ethylene.

e-Ethylene is key to sustainable making:

- **Fabrics:** Ethylene is a core feedstock in the production of polyester fabrics; strong, versatile materials used for applications like clothing and home furnishings.
- **Plastics:** Ethylene is essential to produce everyday plastics used in consumer goods, car interiors, and packaging materials.
- **Construction materials:** Ethylene is used to produce high-density polyethylene (HDPE) or polyvinyl chloride (PVC), used in long-lasting materials like pipes, window frames, flooring.

After demonstrating 1000+ hours of continuous, stable, high-performance operation (within +/- 5% of lab-scale performance) at the final industrial-module scale (a 3,000x scale-up since 2021) and signing major commercial partnerships (including a publicly-announced multi-year deal with L'Oréal), Dioxycle is now starting development of a first commercial site for 2027.

CEO of Dioxycle, Sarah Lamaison, shares an inside look at Dioxycle's journey - and why this is the right time to reinvent chemical production.



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