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PlasmaLeap raises $30M to rewire fertiliser supply chain as geopolitical risks bite

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The round drew a coalition of agribusiness heavyweights and climate-focused investors, including the Grains Research and Development Corporation (GRDC), Hort Innovation, GrainCorpâ??s venture arm, New Zealandâ??s Agnition Ventures (Ravensdownâ??s corporate VC), the Gates Foundation, Investible, Yara Growth Ventures, UniSuper and Twynam.

Founded as a spin-out from the University of Sydney, PlasmaLeap is developing a reactor that produces ammonia and nitric acidâ??core ingredients in nitrogen fertiliserâ??using only air, water and renewable electricity. The company argues the system could decentralise a sector long dominated by large, energy-intensive industrial plants and fragile global supply routes.

That pitch is gaining urgency. Roughly 45 per cent of globally traded nitrogen fertiliser is linked to supply chains passing through the Middle East, with about a third of global flows routed via the Strait of Hormuz. Disruptions linked to regional conflict have already pushed prices higher, adding pressure on farmersâ?? input costs.

PlasmaLeap CEO Frere Byrne framed the technology as a buffer against that volatility. â??The conflict in the Gulf has highlighted the risks to nitrogen fertiliser supply and the very real risks to farmersâ??and consumersâ??from price shocks,â? he said. The companyâ??s model, he added, could allow fertiliser to be produced closer to where it is used, reducing exposure to global shocks while cutting emissions.

Backers are positioning the investment as both an economic and strategic hedge for agriculture.

GRDC managing director Nigel Hart said decentralised production could strengthen supply resilience while supporting sustainability goals, calling it â??strategically important for the Australian grains sector.â?

GrainCorp Ventures highlighted the potential to reduce emissions and improve cost stability for growers, while Hort Innovation emphasised the importance of reliable fertiliser access for horticulture amid rising input costs and supply chain strain.

The funding will support construction of early fertiliser production hubs in New South Wales and Tasmania, along with expanded field trials and continued development of the core reactor technology. Longer-term ambitions extend beyond agriculture, with potential applications in synthetic fuels and energy systems.

For now, though, the focus is firmly on fertiliserâ??a sector where geopolitical shocks are increasingly being felt in farm budgets, and where investors are betting that localisation could become the next major industrial shift.