

STUDY CONFIRMS POTENTIAL TO TURN PILBARA WASTE-WATER INTO NEW BILLION DOLLAR EXPORT INDUSTRY

An innovative Australian project to produce high-value magnesium carbonate from existing waste-water streams from salt production in the Pilbara has the potential to establish a lucrative new export industry in the region, modelling has shown.

Emerging Australian specialty chemicals producer EcoMag Ltd ("EcoMag") plans to recycle waste-water streams (known as bitterns) generated by Pilbara sea-salt producer Dampier Salt, to extract valuable hydrated magnesium carbonate (HMC). HMC is a high purity, high value magnesium product with multiple applications, including in smart phones and as a flame retardant, and currently fetches circa US\$1,250/tonne.

EcoMag's proposed processing facility at Karratha, better known as the capital of WA's multi-billion dollar LNG export industry, is expected to initially produce approximately 80,000 tonnes of HMC per year. Construction will cost approximately \$130m according to feasibility study estimates.

However, modelling undertaken as part of a recently completed study by EcoMag has confirmed the volume of bitterns available for processing is much larger than initially considered, and could potentially support vastly higher production levels.

"We always knew there was substantial potential to expand production," EcoMag General Manager Shaun Triner said. "Now we know how much, and it's better than we thought."

As part of the ongoing regulatory approval process, EcoMag is providing bitterns dispersal modelling to the W.A. Department of Water and Environmental Regulation, taking into account 45 years of data for evaporation rates, rainfall patterns, tides, and extreme weather events such as the cyclones that occasionally strike the area.

"On average, we utilise only ten percent of the total waste stream," Mr. Triner said. "That's not to say we could reliably expand production ten-fold because there is significant variability from year to year, but it looks like the resource could support production levels around six to eight times the initial plant."

Mr Triner noted that magnesium is the third most abundant element dissolved in seawater. The first two, sodium and chlorine are removed (as sodium chloride) by sea-salt producers and Dampier Salt is only one of five such sea-salt producers in Northern Western Australia. Given that bittern resources are continually replenished by the ocean, their potential for exploitation is practically uncapped.

EcoMag Chief Executive Officer Tony Crimmins said that even at the initial proposed plant capacity, the project would add significantly to Karratha's manufacturing output, generating around \$130 million of revenue per year, almost all of it from exports.

"Karratha's annual manufacturing output is around \$740 million, so our initial plant would represent a significant boost," he said. "But if, down the track, we were able to expand eight times, it could more than double current manufacturing output. It could potentially bring the region a billion dollars in annual revenue, not to mention raising around \$25 million annually in royalties for Western Australia."



Every year*
a billion dollars
worth of magnesium is
flushed down this channel
just north of Karratha into the
Indian Ocean.

*on average

Media contact:
Walter Munro, Executive Director, Communications,
on +61 401 345 687

Registered office:
Unit 23 / 376-380 Eastern Valley Way
Chatswood NSW 2067

Telephone: +61 476 201 056

Email: walter@ecomagnesium.com

"However, it's not all about the money. The potential social and community benefits are equally important."

Initial plant construction is expected to generate 110 jobs and the company has a strong policy of preferring local suppliers.

"This reflects EcoMag's commitment to the regional community," Mr Crimmins said. "It also ensures that local expertise and specific knowledge of EcoMag's operation is available for maintenance and expansion."

Ongoing operation of the initial plant is expected to provide 25 direct full-time jobs for permanent residents of the nearby city of Karratha and this number would increase substantially as production expands. EcoMag's project would also represent a new source of business for Pilbara ports, importing bulk shipments of processing re-agents and exporting magnesium carbonate.

"Any new project offers regional benefits of course," Mr. Crimmins said. "What sets EcoMag apart is that our business is entirely outside the boom and bust cycle and the fly-in-fly-out employment practices of the resources industry that dominates the region. We would offer both permanent employment and economic diversification."

The City of Karratha has long recognised the benefits of resource related investment but has also stressed the importance of diversifying the region's economic base.

Specialty chemicals is a trillion dollar industry worldwide, but there are very few specialty chemicals businesses in Australia. EcoMag's magnesium recycling plant utilises a proprietary process developed in South Korea to produce magnesium carbonate at extremely high purity levels.

"That's important in two ways," Mr Crimmins said. "Firstly, in speciality chemicals markets, price is driven by purity, and we produce the highest levels available. Secondly, our product is unusually flexible. The more you understand international magnesium markets the more astonishing you realise this metal is. Most people know that it goes into human health supplements but they don't realise it's used in plastics and rubber, steelmaking, fertilisers, toughened glass, water treatment, and a wide variety of foods and beverages, just to name a few applications.

"Critically, magnesium buyers don't just want magnesium. They look for a particular compound of magnesium with minimal impurities and specific particle sizes, surface areas, etcetera. Most producers find it very difficult to meet these requirements but we've been providing samples to distributors for a year now, verifying that we can meet their stringent requirements with relative ease. This is partly because of the nature of our process and partly because our Chief Technology Officer, Professor Tam Tran is a world leader in hydrometallurgy."

Australia is the third largest sea-salt producer in the world and EcoMag's process has been optimised to extract magnesium from the discarded brines and produce specialty magnesium chemicals with characteristics demanded by a broad range of buyers in a mature international market.

"That's why we see such scope for expansion," Mr Crimmins said. "It's why we're see EcoMag as conceivably a billion dollar business in the making with the potential to drive a specialty chemicals renaissance in Australia."

Media contact:
Walter Munro, Executive Director, Communications,
on +61 401 345 687

Registered office:
Unit 23 / 376-380 Eastern Valley Way
Chatswood NSW 2067

Telephone: +61 476 201 056

Email: walter@ecomagnesium.com

