

(CASE STUDY)

# Lystek

## ECOSYS

INTEGRATED SOLUTIONS



## Utility Implements Containerized Solution to Generate Sustainable Class A Fertilizer Products

### ABOUT

Sharjah is the third-most populated city in the United Arab Emirates (UAE) and is regarded as the cultural capital of the UAE. [www.shjmun.gov.ae](http://www.shjmun.gov.ae)

### CHALLENGES

- Dewatered sludge was being hauled offsite for expensive composting or unsustainable landfill disposal
- Sharjah was looking to trial a treatment technology to diversify their solids management program with the potential for larger scale expansion

### PROJECT DRIVERS

The Sharjah Municipality Drainage Department selected Lystek's Package THP solution, providing these benefits:

- Treat a portion of the facility's wastewater sludge, with no disruption to plant processes
- Rapid deployment of a stand-alone solution
- Opportunity to produce multiple Class A products
- Demonstrate compatibility with local operations

### RESULT

- Creates a marketable Class A quality fertilizer
- Augment to existing plants – does not disrupt process flow

### PROJECT PARTNERS

- Lystek partnered with Ecosys Integrated Solutions, a wastewater treatment solutions firm based out of Dubai, UAE, to deliver this project.

## Sharjah Wastewater Treatment Plant Sharjah, UAE



### KEY METRICS

Population Served: 1,685,000

WWTP Rating: 50,000 m<sup>3</sup> / day (13 MGD)

Lystek THP Processing Footprint: 37 m<sup>2</sup> (398 ft<sup>2</sup>)

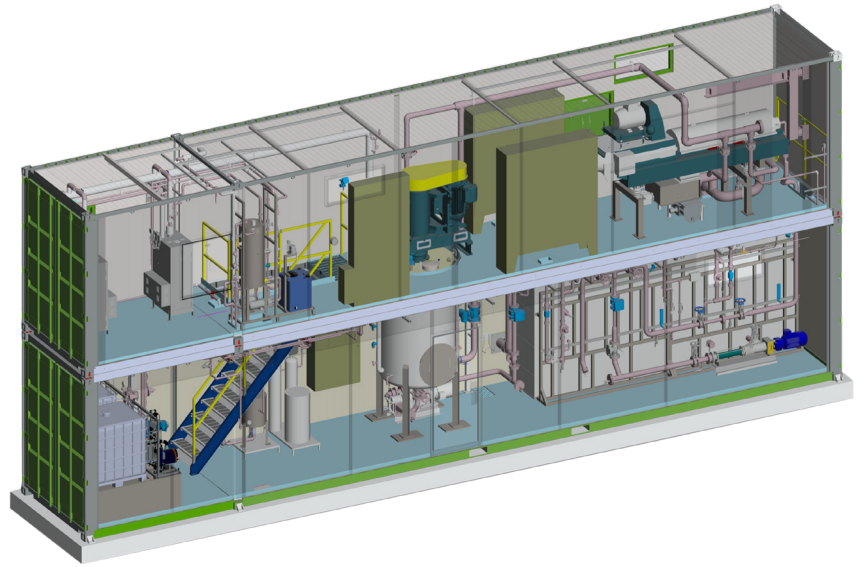
Lystek THP Module Size: 1 x LY3 (0.3 dry tonnes / hr)

Feedstock: Municipal biosolids (undigested)

Project Delivery Model: Package THP Module

Sharjah Municipality was looking to implement a technology that could produce a fertilizer product on site and eliminate reliance on offsite disposal. Lystek International partnered with Ecosys Integrated Solutions and engaged with Sharjah Municipality to deliver this packaged solution. This project builds on Lystek's proven experience across 13 successful projects in North America and is their first installation in Asia.

The scope included the deployment of an LY3 Module, dewatering centrifuge, and all associated ancillary systems required to produce Class A quality LysteGro fertilizer. The packaged solution processes about 0.3 dry tonnes per hour. This unit provides a complete solution operating entirely within two vertically stacked 50' containers.



Package THP extends the proven advantages of the in-plant Lystek THP solution by offering a compact, cost effective solution that is capable of rapid implementation. The container was designed and manufactured in Canada by Lystek's experienced team of engineers. The containers were received, integrated with Sharjah's WWTP, and commissioned by Lystek and Ecosys before being handed over to Sharjah Municipality Drainage Department.

This containerized solution provided Sharjah with the ability to rapidly deploy a technology to treat a portion of wastewater flows with no disruption to plant processes. The container receives undigested dewatered sludge, processes it using Lystek THP, and has capabilities to dewater the Class A fertilizer. The resulting product has been utilized as a Class A

fertilizer locally. This project also demonstrated the enhanced dewaterability of the hydrolyzed fertilizer for beneficial use as a dewatered product. Liquid LysteGro can also be easily solar dried to greater than 90% total solids while maintaining its pathogen free properties.

The Sharjah Municipality Agriculture Department has been successfully using the dewatered Class A quality solar dried LysteGro as a fertilizer.

Next steps of the project include continuing to develop additional product markets and expand processing capacity.



### About Lystek

Lystek International is the leading provider of thermal-alkaline hydrolysis solutions, servicing over 60 Utilities globally. Lystek offers turnkey solutions including technology supply, design-build and installation services, regional processing solutions, and comprehensive LysteGro sales and management. The **Lystek THP**® technology is proven across a range of small, medium, and large communities. Lystek works with public and private sector clients to enhance operations, reduce GHG emissions, and recover valuable nutrients and carbon from biosolids and organic feedstocks through the optimized production of renewable biogas with **LysteMize**® and **LysteGro**® Class A quality biosolids fertilizers.

### About Ecosys

Ecosys Integrated Solutions is a team of experienced engineers from diverse disciplines delivering efficiency in advanced wastewater, biosolids treatment, and nutrient recovery solutions. Ecosys takes a holistic approach. In collaboration with global partners, Ecosys delivers reliable and customizable solutions with a comprehensive understanding of equipment and process perspectives. Ecosys supports clients with technology and equipment selection and offers turnkey project management solutions.