



Message from our Executive Vice President

2020 and 2021 have been challenging and rewarding years for Lystek as we navigated the highly dynamic global context associated with COVID-19. I am humbled by the response of our operations and management team. They quickly responded to our changing work environments and new measures required to ensure our customers' biosolids and organics management service needs were met without interruption.

Our team continues to build on our strong foundation of consistent technological and commercial development as we've experienced substantial growth through this period, including our first deployment in Asia. We are extremely appreciative we remain well positioned to address the expanding urgencies associated with effective resource recovery, responsible nutrient management, and tangible greenhouse gas reduction progress. We continue to be motivated by our customers' desires to enhance their facility operations, reduce costs, and minimize their carbon footprint. We look forward to meeting with many utilities in the coming year to discuss sustainable solutions to their solids management challenges.

Our project team is currently working on four new facilities as well as the expansion of one of our existing on-site deployments. Our OMRC facilities are busier than ever and under increasing pressure to continue to expand to address local resource recovery needs.

In the past five years we have successfully produced and sold more than 1,200,000 tons of our industry leading Class A LysteGro fertilizer, with demand consistently outpacing supply.

Our LysteMize renewable energy projects continue to show impressive results at full-scale with attractive returns on investment and input energy.

We wish to send our sincere thanks to our customers, engineering consulting and project partners, and all others in the industry who have contributed to making Lystek a global resource recovery success story. Together we have proven that with determination, hard-work, and a relentless positive attitude towards sustainable opportunities, quick, efficient, and real environmental progress can be made. We are excited to continue to work with you to drive this mission forward in the coming year.

Sincerely,

Michael Beswick, MASc, PEng
Executive Vice President

4 NEW PLANTS
in Design /
Construction

LYSTEK THP
Modules
Installed **16**

55 GENERATORS
Serviced

1.7+
MILLION TONS
of LYSTEGRO
Sold & Applied

100,000
ACRES FERTILIZED

more than
Agricultural
Customers **350**

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NEW FACILITY UPDATES

MICHIGAN EXPANSION

We are very excited to be expanding our technology and **LystekGro®** fertilizer programs into the state of Michigan with our first facility coming online this year.

SOUTH HURON VALLEY UTILITY AUTHORITY



The South Huron Valley Utility Authority needed a solution to substantially reduce biosolids volumes at their wastewater plant. The existing low-solids liquid, lime-stabilized Class B biosolids program was stressed for winter storage and the WWTP was required to implement a costly contingency option of dewatering and hauling to landfill. By implementing **Lystek THP®**, SHVUA will eliminate the use of lime, reduce their offsite biosolids volumes by over 50%, vastly extend storage capacity at the plant, reduce program expenses and control future costs, all while producing an enhanced Class A biosolids product for local agricultural use.

This project has been in design and construction throughout 2021 and is expected to commission before the end of the year.

COMMERCE TOWNSHIP WASTEWATER TREATMENT PLANT

The Commerce Township Wastewater Treatment Plant experienced exponential cost increases for landfill disposal of their dewatered biosolids in recent years, leading project managers to question the viability of their program. To address this growing concern the Township and Oakland County operations staff were looking for cost effective and sustainable solutions to address their biosolids management needs.

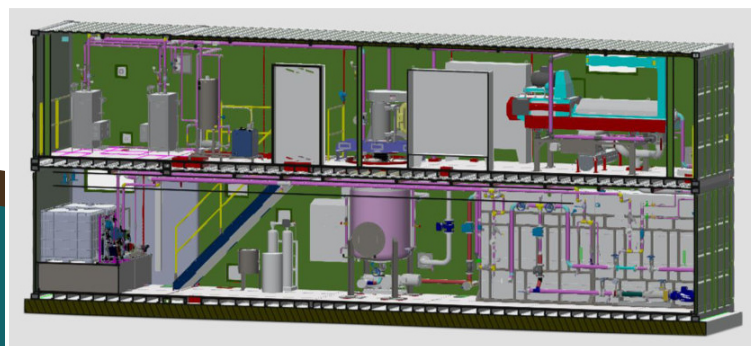
With the announcement of \$2,000,000 in state funding to contribute to the project the Commerce Board of Trustees decided to move forward with design and permitting of an onsite Class A **LystekGro** biosolids fertilizer solution. This project leverages previous investments in the wastewater treatment plant, including their newly constructed biosolids dewatering and loading facility, and their existing concrete storage tanks. This project will enable the Township to transition the Commerce WWTP to a resource recovery facility with 100% landfill diversion achieved and will provide the long-term operational and price security associated with a value-added, low-volume Class A biosolids fertilizer program.

GLOBAL EXPANSION

SHARJAH MUNICIPALITY, UNITED ARAB EMIRATES

With Sharjah Municipality as our partner we are embarking on our first project in the Middle East. Sharjah Municipality was looking for practical means to take control of their biosolids management program and reduce their reliance on third parties as they currently used a costly off-site processing option for their biosolids management needs.

Lystek will be deploying a **Package® THP** system. This project includes an integrated dewatering process alongside a fully electric LY3 Module.



GOLETA SANITARY DISTRICT BIOGAS PRODUCTION PROJECT

As part of our multi-year partnership with the Goleta Sanitary District and the California Energy Commission we have successfully completed our demonstration scale Source Separated Organics (SSO) digestion research project. This SSO project represents our first project pre-processing organic residuals to enhance digestion.

When **Lystek THP** was used to pre-treat difficult-to-digest source separated organics it was found biodegradability of the substrate improved from 18% to 77%, and the biogas yield increased by 470% vs. the untreated organics.

LysteMize
Digestion Enhancement

In the second phase **LysteMize**® anaerobic digestion re-feed project we have proven the significant increases in biogas production possible with the **LysteMize** technology. We observed soluble COD in recalcitrant biosolids increased an average of 580% following **Lystek THP**. Overall digester VSR improved from a baseline of 59% to 67%.

We look forward to completing our data analysis and write up for the project – stay tuned for future publications and presentations.



PROVEN RESULTS

- ✔ *Substrate biodegradability improved from 18% to 77%*
- ✔ *Biogas yield increased by 470%*
- ✔ *Soluble COD increased an average of 580% in recalcitrant biosolids*
- ✔ *Overall digester VSR improved 59% to 67%*

INNISFIL LYTEK THP EXPANSION

A single LY3 process train was installed in 2019 at the Innisfil, ON Wastewater Treatment Plant to support population growth and associated demands on their dilute Class B biosolids program.

Now, with even more rapid community growth experienced throughout the pandemic, the plant has initiated a tender to install the planned second LY3 Module in 2022. We are excited to continue to service the community's growing population with our modular and readily expandable **Lystek THP** process train.



UPDATES FROM OUR ORGANIC MATERIAL RECOVERY CENTERS



FAIRFIELD OMRC

The Fairfield OMRC, originally commissioned in 2016, has quickly become a cornerstone of Lystek's international operating base. Servicing 11 generators across the Bay Area and Northern California we have quickly emerged as the leading sustainable biosolids management provider in the region.

2021 was a big year for Fairfield as we completed our Phase 2 **LysteGro** storage project – bringing an additional 8,000,000 gallons of available product storage to the site. We have also

brought on new feedstocks such as biosolids from the local Budweiser brewery over the past year.

We are excited to share that due to Lystek's impressive and secure operating record, the Fairfield Suisan Sewer District has extended our onsite Lease Agreement an additional 5 years – ensuring operations to 2041, with operations further extendable to 2051.



SOUTHGATE OMRC

The Southgate OMRC is Lystek's flagship resource recovery operation. Since commissioning in 2012 it has reliably serviced the biosolids management needs of Southern Ontario's largest communities including City of Toronto, Halton Region, Region of Waterloo, City of Guelph, City of Orangeville, Muskoka, and others.



As we close in on 1 million tons of **LysteGro** produced and sold at this facility we are thankful for the strength of support from our customers, employees, and local stakeholders. Expansion planning for this facility is currently underway and looks to tap into emerging circular economy market opportunities. We are excited for what this next chapter will bring as we approach our 10-year operations anniversary!

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