

PYREG heads “Down Under” with Carbonisation Systems for Sydney Water to recycle sludge in a closed loop

North West Hub Alliance and PYREG sign Supply Contract to deploy Carbonisation Systems for the North West Hub Alliance’s Riverstone (Sydney Water WRRF) Project

Expanding water resource recovery infrastructure for Sydney’s growing northwest region

Sydney, Dörth, November 07, 2024: The North West Hub Alliance (the Alliance) – a collaboration between [John Holland](#), [KBR](#) and [Stantec](#) – and PYREG, a German equipment manufacturer and global leader in 'Biochar from Biosolids' technology, are working together on a major project with [Sydney Water](#) to increase the city's wastewater treatment capacity at the Riverstone Water Resource Recovery Facility (WRRF).

The Alliance is delivering the North West Treatment Hub Growth Program – a brownfield treatment program that will begin with upgrades to the Rouse Hill and Riverstone WRRFs.

The 10-year program will increase wastewater treatment capacity at Sydney Water’s Water Resource Recovery Facilities as north-west Sydney continues to grow to support new homes and businesses in the area.

The program will see carbonisation technology introduced at Riverstone WRRF, a first for Sydney Water. For this purpose, the Alliance is purchasing two PX1500-S plants from PYREG. Construction is scheduled to start at the end of 2024.

The PYREG carbonisation technology processes wastewater sludge into high-quality biochar, which contains valuable phosphorus, an essential nutrient for plant growth. This process offers communities in North West Sydney a solution that contributes to a circular economy with the potential

to reuse the phosphorus-rich biochar in industries including agriculture and construction.

Since 2015, PYREG has been installing its scalable biochar production systems at wastewater treatment plants throughout Germany, the Czech Republic, Sweden and the United States. This project is the first of its kind in Australia; with this project, PYREG is now entering its fourth continent.

The core of the PYREG technology is the patented reactor in combination with the downstream FLOX combustion chamber ("FLOX" stands for flameless oxidation). In the reactor, the raw material is heated at high temperatures between 500 to 700 °C, for several minutes, largely in the absence of air. The computer-controlled process parameters - such as the feed material feed rate, temperature and air supply - are the key to successful recycling. The phosphorus remains fully available for the plants.

What's more, wastewater sludge treatment supports removal of pollutants, protecting the environment and public health.

Rob Evans, Executive General Manager - Infrastructure at John Holland, said John Holland is proud to be at the forefront of innovation in the water industry: "Thanks to an innovative solution, we are not only increasing the capacity of the wastewater network in Sydney's North West, but also improving environmental and sustainability outcomes. We know this is an important piece of infrastructure that will leave a lasting legacy."

Jörg zu Dohna, CEO of PYREG, said: "Sydney Water is creating the world's largest and most advanced sewage sludge pyrolysis plant with the Riverstone project and we are proud to have been awarded the project following a global selection process. PYREG is now coming to Australia and we will put down roots there!"

Robert Kovach, CSO of PYREG, added: "The PX 1500-S plant is designed for customers who are looking for a reliable, sustainable and profitable solution for sewage sludge. We are pleased to contribute with our technology to John Holland's approach to significantly reduce disposal costs and ensure environmental compliance."

About John Holland

John Holland is Australia and New Zealand's leading end-to-end integrated infrastructure, building, rail and multi-modal transport company. Its diverse sector experience enables John Holland to create innovative, enduring and cost-effective solutions for its customers.

About PYREG

PYREG GmbH is a world-leading German manufacturer of machines for carbonizing organic waste (biomass, sewage sludge, etc.) into high quality biochar while generating

renewable energy. By the end of 2023, all 60 PYREG plants commissioned worldwide had the potential to remove a total of 60,000 tonnes of CO₂ per year.

To learn more about PYREG, go to: <https://pyreg.com/>

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