

Advancing Environmental Innovation

Who is CNP?

CNP stands for **C**arbon, **N**itrogen and **P**hosphorus. CNPs - Technology Water and Biosolids Corporation designs and supplies nutrient recovery and biosolids treatment optimization systems. Led by an experienced team of wastewater industry veterans, CNP continues to pioneer innovative wastewater systems solutions that positively impact the operational costs of treatment plants worldwide. CNP's key technologies are AirPrex® and CalPrex™, phosphorus recovery technologies, and PONDUS, a Thermo-Chemical Hydrolysis Process (TCHP). CNP is a division of Centrisys Corporation and headquartered in Kenosha, Wis.

CalPrex®

The CalPrex process harnesses the acidogenic bacteria power to acidify bio-P sludge. Over 60% of phosphorus solubilizes in the acid phase digestion process. Dewatering acidogenically digested sludge isolates the dissolved phosphorus (orthophosphates), in the centrate. The centrate is sent to the CalPrex reactor, where orthophosphates are precipitated by calcium hydroxide and calcium chloride. By maintaining a pH solution of 6.5 or below, phosphorus is recovered as brushite ($\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$), a market ready, high-quality fertilizer.

AirPrex®

AirPrex turns struvite into an opportunity for resource recovery and installs between the anaerobic digester and the dewatering equipment. AirPrex converts the orthophosphates in digested sludge to struvite ($\text{MgNH}_4\text{PO}_4 \cdot 6\text{H}_2\text{O}$) by air stripping CO_2 and adding magnesium chloride. Struvite is another market ready fertilizer. AirPrex reduces the phosphorus recirculation by 90%.

CalPrex® + AirPrex®

The combination of CalPrex + AirPrex captures 50%+ phosphorus entering treatment plants, with a minimal addition of chemicals.

PONDUS (TCHP)

CNP has exclusive North American distributorship of PONDUS, a Thermo-Chemical Hydrolysis Process (TCHP), which increases biogas production and digester capacity. The process also reduces sludge volume and polymer consumption. The process uses thermal energy and sodium hydroxide (caustic soda) to break down the cell walls of the microorganisms in waste activated sludge to render the sludge digestible in anaerobic digesters. Steam is not necessary, making PONDUS a cost effective solution, for treatment plants ranging in size from 10 mgd to 160 mgd. A treatment plant using PONDUS can expect a 25-30% increase in methane production compared to a plant not using PONDUS' innovative technology.



North America 9535 58th Place | Kenosha, WI 53144
P +1 (262) 764-3651 **E** info@cnp-tec.us

Global Presence North America | South America | Europe | Middle East | China

CNP at a Glance

Installations

- 2017 – First North American AirPrex installations complete by the end of the year: Liverpool WWTP in Medina, Ohio and Little Patuxent Water Reclamation Plant - Howard County in Savage, Maryland
- March 2017 – CNP acquires CalPrex global licensing and distribution
- 2014 – First North American PONDUS installation at Kenosha WTP in Kenosha, Wis.
- 10 AirPrex global installations
- 7 PONDUS global installations

Awards

- 2017 ACEC Grand Award for the Kenosha WTP Energy Optimized Resource Recovery Project (PONDUS)
- 2016 U.S. Environmental Protection Agency (EPA) Nutrient Recycling Challenge Award (AirPrex)
- 2015 Green Tec Award (AirPrex)

Company Leadership

- Gerhard Forstner, *CNP North America President*
- Michael Kopper, *C.E.O. and Founder of Centrisys*
- Menachem Tabanpour, *V.P. of Business Development*
- Zhongtian (John) Li, *Ph.D., Technical Manager*
- Joseph Hughes, *P.E., Project Manager*
- Patrick Mullen, *Project Manager*

Facilities & Locations

- North America - Kenosha, Wisconsin
- Europe - Schwarzenbek, Germany

Media Contact

Michele Whitfield

P +1 (262) 654-6006

E marketing@centrisys.com