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FOR IMMEDIATE RELEASE

WEFTEC 2017 Booth #8253

Linde to Present Oxygen Recovery System for Lowering Ozone Production Costs

Reduces oxygen consumption by ozone generators for water treatment up to 60%

Bridgewater, N.J., U.S., August 31, 2017 – At <u>WEFTEC</u> 2017, <u>Linde LLC</u> will present the OZORA[™] oxygen recovery system, designed to dramatically reduce oxygen (O₂) consumption during production of ozone for municipal or industrial <u>water treatment</u>. WEFTEC, the world's largest annual water quality exhibition, is scheduled for October 2-4 at McCormick Place in Chicago.

The OZORA system advantage

Commercial ozone generators that use corona discharge, a high-energy electric field process, split O_2 molecules which reform with free O_2 to produce ozone (O_3). However, around 90% of the O_2 used in the process is not converted to O_3 and remains unused at a high cost. Leveraging its deep knowledge of adsorption processes, Linde created the patented OZORA system, which efficiently separates O_3 and recycles O_2 back to the O_3 generator reducing O_2 consumption by up to 60%. This technology has been jointly tested and validated with SUEZ, a leading manufacturer of ozone generators and a prominent player in the water treatment industry.

OZORA systems can be sized to match new O_3 generation units, or engineered to retrofit existing water treatment operations. Linde, a global leader in industrial gases and engineering, also supplies bulk O_2 and nitrogen gases for O_3 production.

For more information, visit Linde at <u>WEFTEC</u> booth #8253, or contact Linde (<u>www.lindeus.com</u>), 800-755-9277.

About Linde LLC in North America

Linde LLC is a member of The Linde Group. In the 2016 financial year, The Linde Group generated revenue of USD 17.9 bn (EUR 16.948 bn), making it one of the leading gases and engineering companies in the world, with approximately 60,000 employees working in more than 100 countries worldwide. The strategy of The Linde Group is geared towards long-term profitable growth and focuses on the expansion of its international business, with forward-looking products and services. Linde acts responsibly towards its shareholders, business partners, employees, society and the environment in every one of its business areas, regions and locations across the globe. The company is committed to technologies and products that unite the goals of customer value and sustainable development.

About SUEZ in North America

SUEZ in North America operates across all 50 states and Canada with 3,350 employees dedicated to environmental sustainability and leading the resource revolution. The company provides drinking water, wastewater and waste collection service to 7.3 million people on a daily basis; treats 577 million gallons of water and 997 million gallons of wastewater each day; delivers water treatment and advanced network solutions to 16,000 industrial and municipal sites; processes 55,000 tons of waste for recycling; rehabilitates and maintains water assets for more than 4,000 municipal and industrial customers; and manages \$4.1 billion in total assets. The company posted revenues of \$1.275 billion in 2016 and is a subsidiary of Paris-based SUEZ that generated total revenues of €15.3 billion.

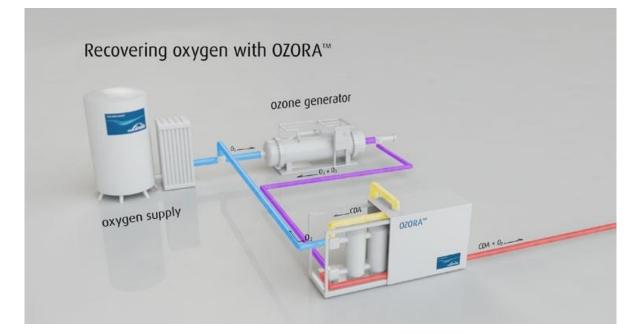
For more information, visit <u>www.lindeus.com</u> Linde Contact: Amy Ficon Corporate Communications 908-771-1491, Fax 908-771-1460 <u>amy.ficon@linde.com</u>

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(Caption)



The OZORA[™] oxygen recovery system from Linde LLC can be sized to match new ozone generation units, or engineered to retrofit existing water treatment operations. Photo credit: Linde LLC



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Linde and SUEZ to Present Overview of Optimized Ozone Production at IOA 2017

New oxygen recycling technology cuts oxygen consumption up to 60%

Bridgewater, N.J., U.S, August 9, 2017 – Experts from <u>Linde LLC</u> and <u>SUEZ</u> will detail a new solution for lowering ozone production costs by reducing oxygen (O₂) consumption in a presentation at this year's International Ozone Association (IOA) World Congress.

The IOA is a non-profit educational association focused on the safe and effective use of technologies for aquarium use, municipal water, municipal wastewater and industrial process applications to protect public health and the environment. The 23rd IOA World Congress and Exhibition is set for August 13-17 at the Gaylord National Resort & Convention Center in National Harbor, MD.

The presentation, is scheduled as follows:

"A New Technology for Recycling Oxygen in the Ozone Generation Process"

Session 11: Ozone Generation and Feed Gas Quality - Tuesday, August 15, 3:45 p.m.

About 90% of the O₂ used in corona discharge processing is not converted to ozone (O₃) and is wasted at a high cost to O₃ producers. Steve Finley, Environmental Manager, Application Technologies for Linde LLC, and Christopher Huynh, Senior Market Manager from SUEZ, will present an overview of the new OZORATM oxygen recovery system, a Linde-owned technology to recycle unused O₂ in O₃ production. The presentation will include results from trials conducted in collaboration with SUEZ, a leading manufacturer of Ozone generators and prominent player in the <u>water treatment</u> industry.

The patented OZORA system from Linde efficiently separates O_3 and recycles oxygen back to the O_3 generator, therefore reducing O_2 consumption by up to 60%. The system can be sized to match new O_3 generation systems, or engineered to retrofit existing O_3 production operations.

In addition to the new OZORA system, Linde LLC offers solutions which can cost-effectively improve productivity while meeting environmental control issues for the municipal <u>water treatment</u> and industrial wastewater, <u>pulp and paper</u>, and <u>industrial chemical</u> industries. Linde, a global leader in industrial gases and engineering, also supplies bulk O₂ and nitrogen gases for O₃ production.

For more information, attend the IOA 2017 presentation, or contact Linde (<u>www.lindeus.com</u>), 800-755-9277.

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Vinita Abraham Corporate Communications 908-771-1366 <u>vinita.abraham@linde.com</u>

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BIOGRAPHY

Leslie Waller Head of Chemistry, Energy and Environmental Industry Linde LLC

Leslie Waller is head of the Chemistry, Energy and Environmental Industry, Americas, a part of the Gases division of Linde LLC. She leads program managers and applications sales engineers focused on industrial gas solutions for industries spanning water treatment, fine and specialty chemicals, base and petrochemicals, pulp and paper, oil and gas, refining and feedstock, and biopharmaceuticals in North America.

A 23 year-veteran of the chemicals and industrial gas industry, Waller has been a member of Linde's management team since 2007 in positions including Southwest Area Sales Manager (2009-2012) and Chemicals Segment Manager (2007-2009). Previously, she worked at global and regional levels in product management, key account and engineering roles for BOC Gases (acquired by Linde in 2006).

Waller serves as the first chair board member of the Chemistry Council of NJ, and is part of both the Racemics and Advancing Women Executives organizations. She holds an MBA from The Sellinger School of Business and Management at Loyola University in Timonium, Maryland, and dual bachelor's degrees in Chemical Engineering and Mathematics from Rutgers University in New Brunswick, NJ.

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BIOGRAPHY

Steven Finley Environmental Applications Manager Linde LLC

Steven Finley is Environmental Applications Manager for the Application Technology division of Linde LLC.

He currently leads development of the OZORA[™] oxygen recovery system for ozonators used in municipal and industrial water treatment.

Finley is a 26 year veteran of the industrial gases business. He holds seven patents and has specific experience in developing new technologies for the chemicals and environmental markets. Prior to joining Linde in 1991, he served 10 years as Production Manager for Agfa Corporation.

Finley earned a Bachelor of Science degree in Mechanical Engineering from the New Jersey Institute of Technology in Newark, NJ. He is married with two children, and currently resides in Wayne, NJ.

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BIOGRAPHY

Peter Studer Program Manager - Chemicals & Environment Linde LLC

Peter Studer is Program Manager for the Chemicals & Environment industry of Linde LLC. He leads application sales engineers focusing on effective solutions for industries spanning water treatment, pharmaceutical, biopharma, and fine & specialty chemicals in North America. He also contributes to the Linde Global Technology and Innovation team.

Prior to joining Linde in 2013, Studer led the process equipment division of a global chemical company for 10 years. He previously was a fine & specialty chemical production manager for that company, overseeing more than 130 employees in six production plants across South Carolina.

Studer earned a Bachelor of Science degree in Organic Chemistry from the University of Wisconsin in Madison, WI.

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