De Nora Permelec Ltd completes first commercial installation of CECHLO® 3 compartment cell electrolyzers

JAPAN, 3 April 2017: De Nora Permelec Ltd has successfully completed its first commercial installation of CECHLO® 3 compartment cell electrolyzers – paving the way for more cost-effective and sustainable industrial wastewater recovery, while also creating an additional revenue stream for its clients.

An East Asian chemical manufacturer contracted De Nora to install the electrolyzers – the largest in the industry when it comes to 3 compartment cell design – to improve its treatment process, which it has now been operating at full capacity for the past four months.

The success of the CECHLO® 3 compartment cell electrolyzer technology is brought about by the proven and reliable performances of the original membrane cell technology, which was developed by ThyssenKrupp Uhde Chlorine Engineers Ltd's team based in Japan.

The new electrolyzers also recover Tetramethylammonium (TMA), a valuable chemical, from wastewater discharged by the plant's semi-conductor, and this has enabled the company to resell it as Tetramethylammonium Hydroxide (TMAH).

Representative Managing Director of De Nora Permelec Ltd , Makoto Okura, said, "De Nora has a long history in leading industry innovation in water treatment and electrolysis, and developing bespoke solutions for clients. This project is a great example of innovating and harnessing new technology to meet specific needs together with our clients."

Mr. Okura added, "Our electrolyzers are able to turn the issue of wastewater handling into an opportunity which provides an additional source of revenue for our clients, by using the electrochemical route to recover valuable chemicals and raw materials."

As well as increasing efficiency through being three times larger than conventional electrolyzers, the unique structure of the CECHLO® 3 compartment cell electrolyzer's middle chamber cuts power consumption by 20 per cent, and can reduce a customer's carbon footprint by 20 per cent.

Mr. Okura said, "We are excited about the cost-saving and environmental benefits this technology presents for our clients – particularly as environmental legislation becomes stricter and industries face pressure for cost savings."

Following the installation, De Nora Permelec Ltd. have received further enquiries for the technology, including the Lithium Hydroxide (LiOH) recovery process for the battery market, and the salt splitting (Na2SO4) process for the pulp and paper market.

De Nora Permelec Ltd works with two different sizes of electrolyzer, which enables flexible cell stack design ranging from compact units to large industrial capacity. Prior to scaling up to a commercial size, the electrolyzers are available on a field pilot-scale, and lab tests are offered for customers to evaluate performance.

Mr. Okura said, "We provide clients with these options so that we can work with them to develop a tailored solution that not only meet their needs, but also maximises the financial returns from the process. Alongside our expertise and proven track record in quality electrolysis and water treatment solutions, we are focused on continuing to play a leading role in the industry."

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About De Nora
De Nora is an Italian multinational leader in sustainable technologies that offers energy saving products and water treatment solutions. Globally De Nora is a pioneer of electrodes for electrochemical processes (Chlorine & Caustic, Electronics & Surface Finishing, Pool Electrochlorination and Specialties) and is among the leaders in technologies and processes for the filtration and disinfection of water (industrial use, municipal water and wastewater, marine and offshore oil and gas). The Company has grown organically by continuous innovation and externally through major acquisitions in the USA, Japan, the United Kingdom and Italy. It serves clients in 119 countries and has a physical presence in 11 countries worldwide with 29 offices, including 13 manufacturing facilities, and three research & development centers in Italy, the USA and Japan. The Group intellectual property portfolio currently contains 344 patent families with more than 2,000 territorial extensions.

More information at www.denora.com.