

EASY TO INTEGRATE: DEZENTRALISED TREATMENT OF PROCESS WATER



Linde AG, Engineering Division - Italy, Venezuela, the Netherlands

Technical processing systems are some of the most complex industrial plants in existence. In the petro-chemical industry, for example, a great number of chemical products can be manufactured from crude oil and natural gas as a result of chemical-physical processes using such systems. They are designed by special companies, such as the Engineering Division of Linde AG, which having installed over 4,000 plants is one of the leading manufacturers in this area worldwide. The company has more than 1,000 in-house process engineering patents at its disposal when constructing plants, and where necessary, can also rely on external expertise from EnviroChemie, for example. Linde has already built three plants in Italy, Venezuela and the Netherlands, which make use of the EnviModul modular construction system for the treatment of process water.

In order to be able to achieve the highest quality standards, it is not necessary that we perfect every single detail of the process steps ourselves. In some cases, it makes sense to buy in expertise", said Thomas Kohler, Project Manager Hydrogen and Synthesis Gas Plants at Linde.

Flexible modular system

EnviModul is a modular plant system for the decentralized treatment of process water and wastewater. "Using this modular system, we can react flexibly to the specifications of individual plants, according to the purpose for

which the process water is being treated", explained Michael Kuhn, product manager at EnviroChemie. This is because the individual EnviModules can be combined: As a result, they connect different treatment steps. When producing clean water for hydrogen plants, for example, filtration and reverse osmosis processes are being used. They can also handle variable capacity requirements.

Project data

Application	Petro-chemical industry
Process water volume	variable
Objective	Polishing
Plant technology	for example, two EnviModules with main components : Enviochem [®] chemical-physical treatment and Envopur [®] Membrane filtration

Delivered fully assembled

"The biggest advantage for Linde, however, is that the EnviModules are so easily integrated into the plant", said Kuhn. The individual plant components are housed in space modules, which means no special building needs to be constructed, yet the technology is still protected from the wind and weather. EnviroChemie supplies individual components, which are manufactured in Rossdorf, Germany, fully assembled – including lighting and air conditioning. "All that needs to be done on site in order for the EnviModul to become part of Linde's large technical processing plant is for water and electricity connections to be established", stated Kuhn. EnviroChemie also takes care of the individual requirements of the end customer for Linde, for example, in terms of specific makes of motors or measurement units that may be required, or particular specifications for the documentation of the water treatment plants.

Benefits

- A one-stop service: EnviModul provides a complete solution for the entire treatment process.
- Time and cost savings: No buildings required to house the plant.
- Erected quickly: Modules are factory-ready and assembled on site.
- Tailored: The modules are adapted to the customers' requirements.



Compact EnviModul water treatment technology

EnviModul – a flexible system

EnviModul system solutions are modular plants for industrial water treatment, pre-treatment and wastewater treatment. They can be created more quickly, flexibly and cheaply than classic plant solutions. In addition they are expandable and can be moved to a different site.