

The world's 1st industrial DLE Hydrogen Gas Turbine in commercial operation - supplied by Kawasaki

Kawasaki Gas Turbine Europe will take into operation a Gas Turbine Generator Set GPB17D-H2 with 30% Hydrogen at Chevron Phillips Chemical in Tessengerlo, Belgium.

Chevron Phillips Chemical is one of the world's producers of olefins and polyolefins and a leading supplier of aromatics, alpha olefins, styrenics, specialty chemicals, plastic piping and polymer resins. During the production of these products and the associated chemical processes, hydrogen, a valuable by-product is often generated.

In March 2021, Kawasaki Gas Turbine Europe successfully installed the standard natural gas fired DLE (Dry Low Emission) Gas Turbine Generator Set (GTGS) with an electrical power of 1,8 Mwe at Chevron Phillips Chemical's Tessengerlo site.

"Our goal, with the installation of this GTGS, is to use hydrogen resulting from our current manufacturing process, to save energy and to decarbonize the energy demand effectively." explains Ives Mertens, Technical Manager at Chevron Phillips Chemical. The amount of hydrogen generated as a by-product is sufficient to cover a hydrogen-fuelled GTGS operation up to 30vol% H₂.

In July 2023, Kawasaki Gas Turbine Europe plans to implement the necessary modifications of the existing standard DLE System to the 30vol% H₂ DLE system, to maintain the NO_x emissions below 15 ppm@O₂=15%, during a planned standard maintenance. Engineering and planning for this modification are currently ongoing.

Furthermore, the GTGS can be equipped with the so-called "**DLE-Micro-Mix Combustor**" (**MMX**), the world 1st DLE combustor for hydrogen application up to 100% hydrogen developed by Kawasaki. By achieving a supply of 100% hydrogen, the entire electricity and heat production will be decarbonized.



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