

Technip completes acquisition of Hummingbird® technology from BP Chemicals Limited

Technip announced today that it has completed the acquisition of Hummingbird® ethanol to ethylene technology from BP Chemicals Ltd. Utilizing a proprietary catalyst operating under mild operating conditions, the technology converts ethanol to ethylene through dehydration. The technology is lower cost and simpler compared to first generation technologies.

The process uses a wide range of ethanol feedstocks and can easily be integrated into existing ethylene facilities. The advanced catalyst simplifies the processing scheme and significantly increases selectivity.

Stan Knez, President, Technip Stone & Webster Process Technology, stated: *"This acquisition progresses Technip's onshore strategy to add process technologies that differentiate us and bring value to our customers. Hummingbird® allows us to offer customers an alternative method to produce sustainable products from bio-based materials while expanding our technology positions in ethylene-derived chemicals and plastics such as PE, EB/SM and PET⁽¹⁾."*

Hummingbird® is available for licensing from Technip's center in Milton Keynes, United Kingdom, which has a long history of ethylene experience. Ongoing catalyst development will be provided by the Technip Research Center in Weymouth, Massachusetts, USA.

Angello Amorelli, Vice-President BP Group Research, commented: *"BP has a strong track record of developing differentiated technologies. We are pleased to see our Hummingbird® process taken to the market by Technip, a world-class technology licensing and engineering company."*

The Hummingbird® acquisition builds on Technip's long-standing PTA⁽²⁾ alliance with BP, one of the largest PTA producers in the world.

Since acquiring Stone & Webster process technologies in 2012 and Zimmer polymer technologies in 2014, Technip has continued to increase the breadth of its Onshore process technology portfolio. Today it covers technologies in five main areas, offered by Technip or in alliance or partnership with other companies:

- Petrochemicals such as Olefins (Ethylene, Propylene) and Ethyl Benzene/ Styrene Monomer (EB/SM) and phenolics;
- Refining, including Fluid Catalytic Cracking (FCC)/ Resid Fluid Catalytic Cracking (RFCC) and Deep Catalytic Cracking (DCC);
- Hydrogen and Syngas;
- Polymers such as Polyester, Nylon, Polystyrene, ABS and Polyolefins; and
- Gas Monetization such as Natural Gas Liquids (NGL) and Gas to Liquids (GTL).

⁽¹⁾ Polyethylene (PE), Ethyl Benzene Styrene Monomer (EB/SM) and Polyethyleneterephthalate (PET) are used to manufacture a variety of plastic products. EBSM is offered by Badger Licensing LLC, a joint venture of affiliates of Technip and ExxonMobil Corporation, and PET is offered through Technip's Zimmer polymer business, acquired in 2014.

⁽²⁾ Purified Terephthalic Acid (PTA), in the form of white, crystalline powder, is a raw material for the production of polyester fibers and plastic materials.

Fast facts

- **Ethylene:** a hydrocarbon that is widely used in the production of consumer goods, such as plastics or polymers. Traditionally, ethylene is produced in the petrochemical industry by steam cracking; through the Hummingbird® process, ethanol is dehydrated to produce ethylene.
- **Ethanol:** A chemical commodity that can be derived from biomass such as corn and sugar. It is predominantly used as a sustainable liquid transport fuel for vehicles.

Technip is a world leader in project management, engineering and construction for the energy industry.

From the deepest Subsea oil & gas developments to the largest and most complex Offshore and Onshore infrastructures, our close to 32,500 people are constantly offering the best solutions and most innovative technologies to meet the world's energy challenges.

Present in 45 countries, Technip has state-of-the-art industrial assets on all continents and operates a fleet of specialized vessels for pipeline installation and subsea construction.

Technip shares are listed on the Euronext Paris exchange, and its ADR is traded in the US on the OTCQX marketplace as an American Depositary Receipt (OTCQX: TKPPY).



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