

## AXENS IS AWARDED A LICENSING CONTRACT FOR BOROUGE 4 PROJECT IN UAE

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The Abu Dhabi Polymers Company Ltd (Borouge), a joint venture between Abu Dhabi National Oil Company (ADNOC) and Austria-based Borealis, has awarded the France-based Axens a licensing contract to supply a MTBE unit coupled with 1-Butene production unit and 1-Hexene unit for the Borouge 4 project in Ruwais-Abu Dhabi, UAE.

For over a decade, Axens has built a strong and trustful relationship with Borouge, involved in technologies, [catalysts](#) and services supply. It has supported Borouge through different projects, and notably its on-purpose 1-Butene production units which were installed in Borouge-1 and Borouge-3 plants using the AlphaButol™ technology.

As part of the new Borouge 4 project, Axens will provide the following technologies:

- a 124ktpa MTBE and a 50ktpa 1-Butene unit
- a 75ktpa unit for the production of high purity 1-Hexene through ethylene trimerisation (AlphaHexol™)
- Downstream the new steam cracker: a Methyl Acetylene and Propadiene (MAPD) unit, a C<sub>4</sub> hydrogenation unit and a Pygas 2-stages hydrogenation unit.

The scope of Axens' work includes the supply of process books, catalysts & [adsorbents](#), proprietary equipment, trainings and technical services.

Axens' Process Licensing Global Business Unit Executive Vice-President Patrick Sarrazin said: "Today marks a significant step towards the expansion of Borouge's facilities. We are delighted to be the partner of choice for this project and grateful for the trust put into Axens technology, in particular in AlphaHexol™, which will allow Borouge to benefit from Axens' strong experience in homogeneous catalysis for the production of on-purpose 1-Hexene by ethylene trimerisation. This investment will support the continuous growth of UAE petrochemicals, and create a lot of value for the country. Our extensive technology expertise, global capabilities in the basic design, catalysts, equipment and services supply make Axens the ideal partner to deliver this important contract for Borouge."

Operating and maintaining a petrochemical complex located in the Ruwais industrial area of Abu Dhabi that is considered the world's largest integrated polyolefin complex, Borouge plans to more than double the current capacity of its facilities of 4.5 million tons per year by 2030.

To reach this objective, Borouge started construction of its new Borouge 4 complex which will include the world's largest mixed-feed cracker on the same location of its three existing plants. Borouge 4 complex will consist of a number of production units. The primary products will be

ethylene, propylene, butadiene, MTBE, 1-Butene, Pygas, 1-Hexene and benzene from the new mixed-feed cracker and its derivative units. The ethylene and propylene will be converted into polyethylene and polypropylene products.

### About AlphaHexol™ Technology

AlphaHexol™ is a leading technology to produce high purity 1-Hexene by ethylene trimerisation suitable as co-monomer for various types of polyethylenes, including Linear Low-Density Polyethylene (LLDPE) or High-Density Polyethylene (HDPE) production.

### About selective hydrogenation Technologies

Axens offers a wide set of state-of-art technologies combined with highly efficient catalyst solutions to upgrade steam cracker different cuts by selective hydrogenation for C<sub>3</sub>s, C<sub>4</sub>s and Pygas streams. This positions Axens' hydrogenation technology in 80% of liquid crackers worldwide.

### About MTBE/1-Butene Technologies

Recovering native 1-butene present in the raw C<sub>4</sub> cut requires elimination to an ultra-deep extent on the one hand of isobutene, a co-boiler of 1-Butene, which is achieved by petrochemical MTBE plant, and on the other hand of butadiene down to traces which is achieved through dedicated selective hydrogenation. Super fractionation is added to adjust the final distillation purity of 1-butene. Axens has a large demonstrated experience in 1-butene production schemes, including this C<sub>4</sub> route with etherification and selective hydrogenation.

### About Axens

*Axens ([www.axens.net](http://www.axens.net)) is a group providing a complete range of solutions for the conversion of oil and biomass to cleaner fuels, the production and purification of major petrochemical intermediates as well as all of natural gas' treatment and conversion options. The offer includes technologies, equipment, furnaces, modular units, catalysts, adsorbents and related services. Axens is ideally positioned to cover the entire value chain, from feasibility study to unit start-up and follow-up throughout the entire unit cycle life. This unique position ensures the highest level of performance with a reduced environmental footprint. Axens global offer is based on highly trained human resources, modern production facilities and an extended global network for industrial, technical supports & commercial services. Axens is an IFP Group company.*

### About Borouge

*A joint venture between ADNOC and Borealis, Borouge ([www.borouge.com](http://www.borouge.com)) is a leading petrochemicals company that provides innovative plastics solutions for the energy, infrastructure, mobility, packaging, healthcare and agriculture industries. With 4.5 million tons of annual capacity, Borouge has the world's largest integrated polyolefin complex, with the ambition to more than double its current capacity by 2030. With its base in the United Arab Emirates and Marketing & Sales head office in Singapore, Borouge employs more than 3,000 people and serves customers in 50 countries across the Middle East, Asia and Africa.*

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