- Responsible oil and gas
- Petrochemicals

PETROCHEMICALS
OVERVIEW AND CHALLENGES

Petrochemical processes are designed to convert oil and natural gas cuts into base chemicals (the major intermediates) for the chemicals industry, such as olefins and aromatics.

These compounds are subsequently used to manufacture chemicals used in a number of fields: plastics processing, pharmacy, agriculture, cosmetics, electronics, motor vehicle, aviation, textile, etc.

The increase in demand for consumer goods, particularly in emerging countries, is leading to a **significant rise in the demand for petrochemical intermediates**, and particularly for ethylene, propylene, paraxylene, alphaolefins and benzene.

This growth in demand is taking place at a time when the petrochemicals sector is impacted by:

- major changes associated with fundamental societal trends such as:
  - commitments made by signatory countries to the Paris agreement concerning the **reduction of greenhouse gas emissions**,
  - the search for **substitutes for chemical intermediates of fossil origin**,
  - the **significant development of plastics recycling**,
  - greater consideration of the environmental impact of industrial processes.

- contrasting situations depending on the region in question with:
  - in North America, very low ethane, propane and natural gas prices boosting the American petrochemicals sector and its downstream industries,
  - the rapid extension of petrochemical capacities in the Middle East and China.

In this context, while the long-term outlook concerning chemical intermediate production is very favorable, the petrochemicals industry is currently undergoing profound transformations. These include:

- the development of dedicated processes for the production of superior-quality olefins and diolefins,
- the emergence of **complete, petrochemicals-oriented refineries** (Oil to Chemicals refining system), which, ultimately, are set to radically alter regional production balances for certain products,
- the increased integration between refining sites and petrochemicals sites, particularly in Europe, aimed at improving site profitability by producing more chemicals and fewer fuels,
- the **emerging use of new raw materials from biomass or plastics recycling**,
- the gradual transformation of industrial facilities driven by the **digital revolution under way**.

> *These trends are generating substantial investments in the global petrochemicals sector, along with the need for new technologies to adapt to new raw materials (ethane, propane, biomass, plastic recyclates), as well as different refining site configurations.*

Developing innovative and eco-efficient petrochemical intermediate production processes to support market demand.

Our solutions Our strengths

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