

Propylene Technology: The Next Generation

Propylene demand is expected to grow more quickly than supply from traditional sources. Traditional propylene supply/demand conditions and pricing are strongly dependent on refinery production and the supply/demand balance, operating rates and feedstock slates in the ethylene industry. Globally, more than 25 percent of the new crackers started up in the 2003-2007 timeframe are based on ethane and, therefore, will produce little propylene. Moreover, steam cracker expansions and/or additions cannot keep in pace with propylene demand growth. Nexant has a new multi-client report, *Propylene Technology: The Next Generation* that examines and compares the process technologies and economics of the commercially available and developing technologies for the production of propylene. The report will investigate and evaluate the following technologies:

Conventional Technology

- Conventional steam cracking
- Production and recovery from refinery streams
 - High Propylene Catalytic Cracking
 - Deep Catalytic Cracking (DCC)
 - Catalytic Cracking (conventional)
- Propane dehydrogenation

Newer Commercial Technology

- Olefin Metathesis
- Catalytic Pyrolysis
- High Severity (High Propylene) Fluid Catalytic Cracking
- Natural Gas Based Processes
 - Methanol to Olefins (MTO)
 - Methanol to Propylene (MTP)
- Olefin Interconversion

The evaluation of these technologies includes existing technology developers as well as those new to the specific technology. For instance, for Methanol to Propylene, Nexant includes evaluations of the latest technology from existing technology holders, ExxonMobil, UOP/Hydro, and Lurgi, as well as a more recent entrant, Dalian Institute of Chemical Physics (DICP).

Alternate Feedstock Technologies

- Natural gas
- Coal
- Biomass

Nexant analyzes these new technologies by employing a consistent approach and using only information that is the public domain or developed by Nexant from non-confidential information. This analysis is a valuable source of reference and comparisons for companies in the chemical and energy processing industries. It provides benchmarks that many companies may use vis-à-vis their proprietary technology and opportunities.



REPORT OVERVIEW

Subjects Addressed:

- An assessment of the main alternative on-purpose technologies comprising a review of:
 - The technologies and licensors
 - Commercial experience
 - Analysis of the competitive cost of production versus propylene at typical market prices and from conventional production routes
- Technology, economic and commercial evaluation
- The report focuses on the economics of alternate routes and feedstocks to propylene, how they compare to conventional routes, and how competitive they are.

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