Benchmarking of Ethylene Manufacturing Processes: Ethane Cracking and Oxidative Coupling of Methane

FutureBridge

Client	A leading EPC player
Industry	Petrochemicals
Products	Ethylene

Background

- The Client wanted to compare two different routes of manufacturing ethylene in order to understand which process has lesser impurities, lesser investments, plant sizes and factors restricting this in North America and Middle East

Key Business Questions

- Which amongst OCM and Ethane cracking is a better manufacturing process for ethylene?
- What are specific benefits achieved and what would be the investment required for setting up 300 kta, 600 kta and 1000 kta plant?
- What could be the maximum size of the plant for each technology and what could be the limiting factors?

Engagement Scope

1 Understanding OCM Technology

- How does the patenting scenario for OCM technology looks like for past 20 years?
- What are the engineering challenges associated with OCM technology?
- Which are the key players and what has been their major focus area in the entire process chain?

2 Technology Benchmarking

Compare the technologies on basis of:

- Yield
- Selectivity
- Process complexity
- Energy consumption
- Product recovery
- Process reliability
- Raw material cost

3 Cost Benchmarking

- What are the factors impacting size of the plant?
- What is the capital cost associated with each technology?
- What is the operating cost associated with each technology?
- What is the required OSBL infrastructure?

4 Key Findings and Conclusions

- Which geography has filed maximum number of patents in OCM?
- What is the research focus and what challenges are faced by researchers?
- Which are top players in domain of OCM?

Research Methodology

Secondary Research

- Conducted desk research studying company website, annual reports, press releases, etc.
- Referred paid data sources such as market research reports, Factiva, Thomson Innovation, Web of Science, etc.

Primary Research

- 10+ Telephonic interview with suppliers and industry experts
- 5+ Expert consultations

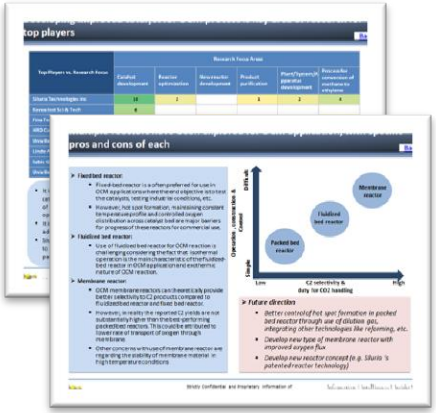
Benefits to Client

- Highlighted recent technological developments related to OCM technology
- Gained insights around the major engineering challenges and approach adopted by companies to overcome these challenges
- Provided cost structure analysis (RM cost, utility cost and fixed cost) for both, OCM and ethane cracking technology

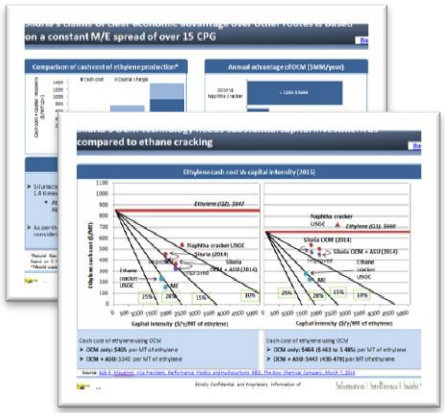
Sample Analysis

1 Understanding OCM Technology

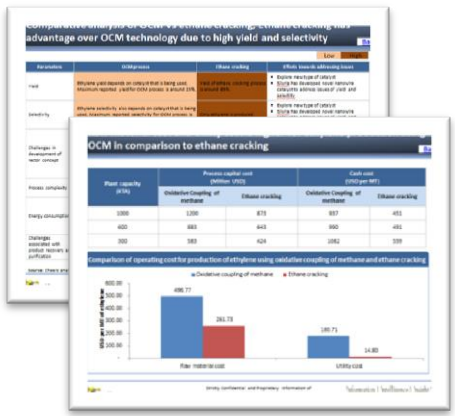
2 Technology Benchmarking



3 Cost Benchmarking



4 Key Findings and Conclusions



Thank you

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