



Petrochemical Services

The petrochemical industry is a fundamentally cyclical business in which long-term success requires a sustainable competitive advantage. Achieving this in petrochemicals requires in-depth analysis of all aspects of operations to find opportunities for Operational Excellence (OpX) and, thus, for profit improvement. KBC has the tools and expertise to identify the opportunities and help implement the solutions required.

Operational Excellence Services for Petrochemicals OpX ASSESSMENT

Our comprehensive petrochemical services often start with an OpX Assessment, which is a Phase 1 strategic analysis of all site assets and competitiveness. The gap analysis identifies areas of profit improvement opportunity related to feedstocks, products, capacity, yield, energy, planning, reliability and maintenance. What differentiates KBC from other consultancies is the ability to drill down from the high-level competitive analysis to the underlying technical and other commercial issues causing loss in profits. KBC evaluates and quantifies the improvement possibilities. Our services are then prioritised by the results of this OpX Assessment to cover Process, Energy, Maintenance, and/or Planning as appropriate. We seek to provide the best integrated solution available.

PROCESS OPTIMISATION

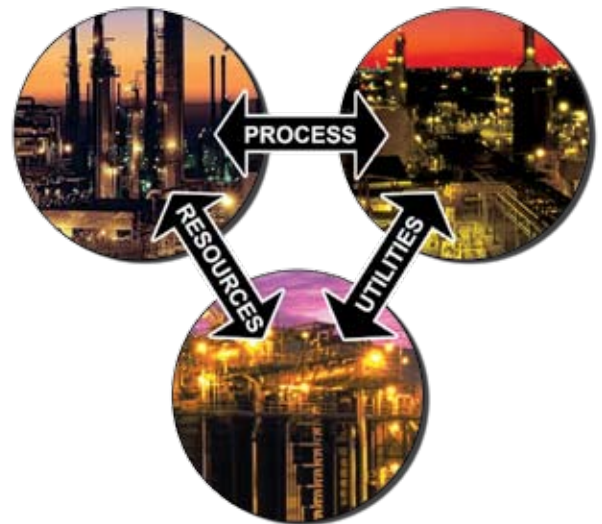
FACT: KBC clients see a typical savings of USD\$8-20 per tonne (or \$1.06-\$2.66 per bbl) of ethylene or aromatics with zero- to low-investment Process Optimisation activities for Operational Excellence.

Our team employs a straightforward methodology with just the right level of modelling and investigation tailored to meet each client's individual needs. The goal is to create and implement integrated solutions driving your plant toward its maximum economic potential.

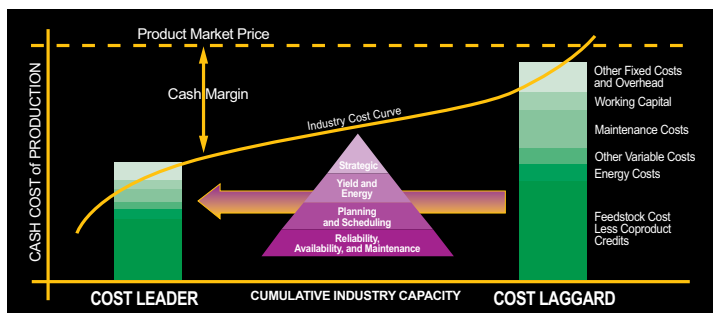
KBC has the tools to assess current plant performance and evaluate ideas for improvement technically, operationally, and economically. We combine in-depth process knowledge with sophisticated technology (including our PetroSIM™ modelling system, which incorporates rigorous olefin, aromatics, and, if appropriate, refinery unit models) to help optimise individual process units, entire sites, and integration between refining, olefins, aromatics, and downstream petrochemical facilities. Optimising Refinery-Petrochemical integration is a key focus of KBC activities, since it often offers the greatest single area of profit improvement opportunity to petrochemical producers.

ENERGY OPTIMISATION

FACT: Typical Energy Optimisation activities result in a 10-20% reduction in total energy costs – with up to half the savings coming from zero- to low-investment options.



Through our KBC Energy Services group (formerly Linnhoff March and Veritech), we combine rigorous analysis with practical knowledge to significantly reduce energy costs. Engage, our Continuous Energy Improvement Program, delivers a comprehensive set of recommendations and implemented solutions covering zero- to low-cost operational improvements and long-term capital investment opportunities to reduce energy costs.



Maximising Profits through Strategic Cost Leadership

(Continued)

RELIABILITY, AVAILABILITY & MAINTENANCE (RAM)

FACT: Clients see an average of 15-25% reduction in routine maintenance and turnaround costs, while improving site reliability and availability through KBC RAM Services for Operational Excellence.

Direct maintenance expense is second only to feedstock costs, and its effectiveness impacts reliability and safety. The KBC RAM team's knowledge and experience in implementing Best Practice techniques, together with cutting-edge technology, improves plant reliability and availability, while simultaneously reducing routine maintenance cost. Substantial cost savings can be realised very quickly with our Turnaround Optimisation Program (TOP™). Our RAM program is built on operations and maintenance expertise, which gives us the capability to review all aspects of an operation and recommend and/or assist in delivering real solutions – prioritised to meet our clients' business needs.

OPERATIONAL PLANNING

KBC planning specialists and the KBC Market Services group bring you unparalleled expertise covering the energy, gas, and petrochemical sectors. Our Planning Services team can identify improvements across the supply chain by evaluating your planning tools and processes, and providing assistance in all phases of planning from monthly plans, capital project evaluation, and definition of long-range business strategies.

Capital Excellence Services for Petrochemicals DUE DILIGENCE

Our ability to perform an in-depth evaluation of condition, competitiveness, and improvement potential of petrochemical assets makes Technical & Commercial Due Diligence in support of mergers and acquisitions, a particular strength. Within the usual tight timeframes, we use our methodologies, tools, and experience to assess all key areas affecting the profitability and hence the value of petrochemical assets and businesses. Particular focus is put on experience-based judgements of improvement potential

and future capital investment needs, which are critical to asset value and bidding strategy.

OTHER CAPITAL EXCELLENCE SERVICES

KBC combines our technical and commercial expertise in the petrochemical industry to undertake a range of engagements relating to a client's existing or future business:

- Asset Valuations
- Investment Analysis
- Supply, Demand, and Pricing Assessments
- Strategic Planning
- Competitive Assessment
- Risk Management
- Organisational Effectiveness
- Supply Chain Optimisation
- Transfer Pricing
- Technology Selection
- Masterplan and Feasibility Studies
- Project Execution Support

FACTORS FOR SUCCESS

KBC calls upon our wealth of experience, tools, and methodology, to provide a range of leading Operational Excellence (OpX) and Capital Excellence (CapX) services covering all aspects of operations. A flexible approach allows KBC to customise programs to meet each client's individual needs and priorities. Our understanding of economic drivers and constraints and how these affect the organisation and integrated facilities allows KBC to optimise profitability across multiple sites, not just individual units. Our independence from process licensors, EPC contractors, and operating companies allows us to bring an unbiased view, share common goals, and develop an ongoing partnership with our clients.

At KBC, we focus on improving our clients' competitive position through innovative business solutions, allowing clients to achieve superior returns on their invested capital and achieve Operational and Capital Excellence – bringing a sustainable competitive advantage.

™ Petro-SIM and TOP are trademarks of KBC Advanced Technologies plc, and they are registered in various territories.

KBC offers a comprehensive range of consulting, implementation, and training solutions to provide sustainable competitive advantage to our process industry clients worldwide.



DRIVING EXCELLENCE

OUR SERVICES INCLUDE:

CapX – Capital Excellence

- Market Analysis & Forecasting
- Business Strategy Review
- Merger, Acquisition, & Integration Studies
- Feasibility Studies
- Capital Project Support

OpX – Operational Excellence

- Operational Planning
- Process Optimisation
- Energy
- HSE
- Reliability, Availability, & Maintenance
- Human Performance Improvement
- Software Solutions

*For more information, please visit www.kbcat.com,
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