



OSTERWALD RATHBONE & PARTNERS
— FINANCE & STRATEGY —

CHEMICAL & PETROCHEMICALS

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Osterwald Rathbone & Partners advise chemical & petrochemicals clients around the world.

The global chemical and petrochemical industries collectively generate more than \$4 trillion sales per year with historical growth levels that have exceeded increases in GDP. The technologies, innovations, products and applications truly touch everything we encounter in our lives today.

The very nature of how chemicals are found and integrated make it a segment which is easily overlooked, despite the wealth of benefits it continually brings.

Being energy intensive and dependent on hydrocarbons and other natural resources for feedstock, chemicals are closely coupled with the oil & gas industries.

Osterwald Rathbone & Partners undertakes independent analysis and thinking in each of these sectors. Over the last 10 years the dynamics of the industry have changed immensely, with new areas of geographic development, changing relative costs for raw materials, more stringent environmental standards, skilled labour shortages and global economic turmoil.



THE CHEMICAL INDUSTRY

NEW CHALLENGES

The chemical industry is continually navigating new challenges in a globalised market. Unconventional oil & gas provides a useful recent-year example of an unexpected transformation that has changed market dynamics and investment patterns.

Possible future consequences may include:

- US natural gas prices increasingly influenced by LNG netbacks from other regions
- A potential shift in petrochemical market price mechanisms as some US segments increasingly export surplus volumes as more investments come on-stream
- Weaker than recent year oil price expectations may dampen appetites for continued shale-linked investment options or lead to new portfolio risk management approaches
- The challenge of finding markets for large new petrochemical output produced from unconventional hydrocarbons and the challenge of providing persuasive plans to support capital intensive financing

There are many other issues which have the potential to change the world in which we operate in unexpected ways. Some may include:

- Climate change – regulatory, resources challenges and potential migratory shifts
- Demographics – changing demand patterns from maturing/aging populations
- Security conflagration and political instabilities
- Economic scenarios that were potentially unthinkable in most recent decades
- Autonomous transportation, 3D printing and other technology led changes
- Asset based reliability challenges for aging plant portfolios
- Leaner supply chain management practices contributing to enhanced market volatility

THE CHEMICAL INDUSTRY

NEW CHALLENGES

The rapidly evolving markets & chemical technologies provide many uncertainties for all stakeholders in this particular sector.

Planning, developing and executing a strategy that has the robustness to deal with the potential outcomes is likely to provide a competitive edge over rivals.

Osterwald Rathbone & Partners provides independent advice on these sorts of issues to both international and national oil companies, as well as governments and regulators.

We advise clients on many of the headline questions within the industry – the team has a broad range of backgrounds within the industry which include project development, operations, trading and finance, as well as contractual disputes.

Our team of experts provides:



Commercial advice



Expert witness in litigation and disputes



Policy advice to governments

COMMERCIAL ADVICE

APPRAISALS & ANALYSIS

Osterwald Rathbone & Partners provides informed and practical advice on the many commercial issues faced by chemical and petrochemical companies.

Whether it is an appraisal of the strengths and weaknesses of a prospective acquisition target, or an independent analysis of the real economics of a new project, we have the skills to get to grips with the market, commercial, technical and financial aspects of each case and deliver frank and honest opinions backed up by facts and clear reasoning.

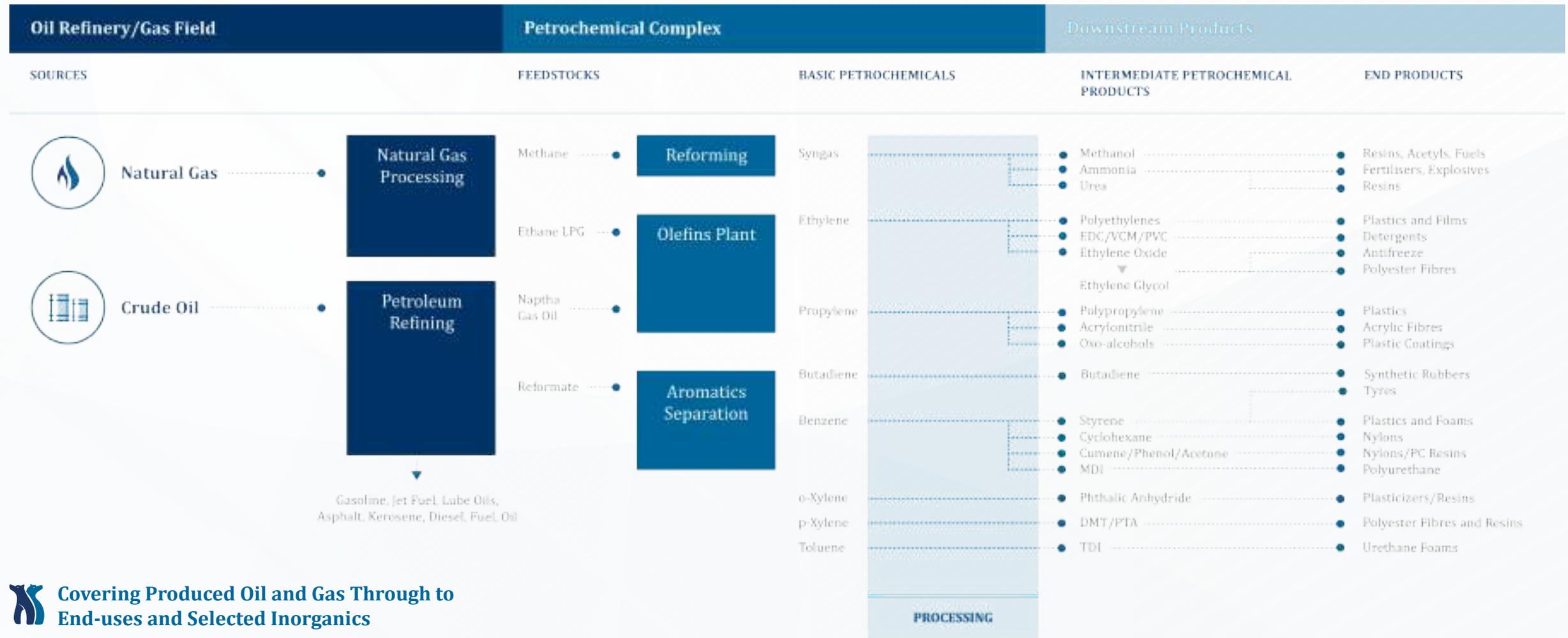
Recent Experience

- Advanced fibre and composite market entry strategy for a major chemical company in the Middle East
- Feasibility study for a prospective Middle East petrochemical complex, including product market and portfolio screening, feedstock analysis, preliminary technology recommendations, initial financial models and preparation of information packages for project EPC bidders and lenders
- Representation in project financing discussions with a range of global financial institutions, on behalf of a Middle East petrochemical complex
- Commercial and technical due diligence, valuation and negotiation support for an inward investor in a greenfield refinery and petrochemical plant in China
- Working with a combined team from an international oil company (IOC) and a petrochemical major to identify joint venture petrochemical opportunities based on methane and ethane feeds in North America
- Due diligence review (technical, economic and commercial) of Petkim, the Turkish petrochemical producer on behalf of a potential acquirer
- Many reviews of opportunities for MTO/MTP from techno-economic and commercial perspectives

CASE STUDY

DEVELOPMENT OF A WORLD SCALE MIDDLE EAST PETROCHEMICAL COMPLEX

For a client looking to develop a world scale Middle East petrochemical complex, the team's work included product market & portfolio screening throughout industry value chains as shown in the illustration. The team also prepared feedstocks analysis, preliminary technology recommendations, initial financial models and preparation of information packages for project EPC bidders and lenders.

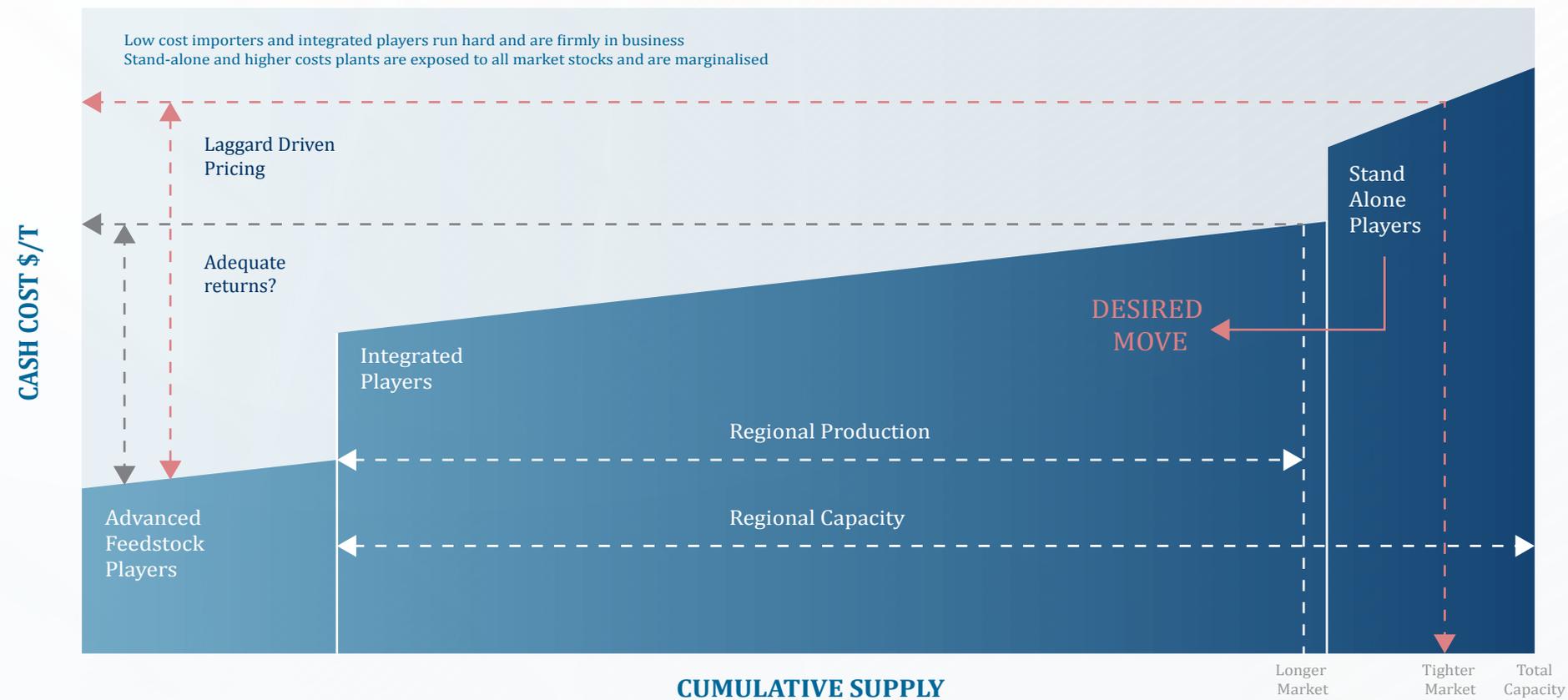


CASE STUDY

DEVELOPMENT OF A WORLD SCALE MIDDLE EAST PETROCHEMICAL COMPLEX

Through continued engagement with the client, we were able to successfully represent the project in project financing discussions with a range of global financial institutions. Our understanding of markets and the forecasting approach applied in the cash flow models was successfully subjected to multi-party scrutiny.

Concept Cost Curves for Ethylene – Derivatives Change and Need Interpretation



LITIGATION SUPPORT

SUPPORT AND DISPUTES

Osterwald Rathbone & Partners are active on behalf of clients in high-profile disputes, ranging from equity and commercial damages to loss of profits and shareholder disputes.

We have highly regarded experience in the provision of objective, fact-based expert support to clients that have become involved in disputes, working closely with leading law firms.

We assess both the question of liability as well as estimating the quantum of damages incurred and regularly present our results to arbitration tribunals, as well as competition authorities and courts.

Recent Experience

- Providing manpower estimates for a dispute involving delay to a polyester fibres complex in a developing Asian country
- Representing an IOC in a project finance dispute
- Settlement in detergents cartel damages case for plaintiff
- Advising client on a competition dispute related to olefins and polyolefins
- Contaminated cargo (fertilizers) damage estimation
- Defence of allegedly defective licensed polymers technology



CASE STUDY

CHINESE PETROCHEMICAL FACILITY - A GENUINE OPERATION OR TAX LOOPHOLE?

We were retained by counsel for the Chinese facility concerned that the US SEC was viewing the facility as a money-laundering scheme rather than an operational petrochemical facility adding value to the feedstocks consumed. The translated description of the plant as a “catalytic pyrolyser” did not assist either.

Our team visited the site and discovered that it was actually a petrochemical residue fluidised catalytic cracker (RFCC), producing a range of petrochemicals including ethylbenzene, styrene and MTBE.

Moreover, a review of the price envelope in which it was operating showed it to be reasonable for China and our lead expert testified about these matters in a telephone deposition with the SEC.



STRATEGY

POLICY ADVICE

Osterwald Rathbone & Partners has worldwide experience helping firms formulate and present economic arguments and evidence during Government inquiries, market investigations and public consultations.

Conversely, we also know how to assist Governments with our commercial expertise in policy debates to ensure that market realities are given appropriate consideration. Our expertise spans a wide range of policy matters from fiscal terms, market analysis, price controls to security of supply. We have accrued substantial experience assisting governments in developing countries create master plans to shape sustainable and efficient energy sectors to support future development.

Recent Experience

- Developed a petrochemical master plan for the Egyptian Government, assessing the current state of petrochemical and refining industries, as well as Egypt's aspirations for the future. Created detailed implementation road maps
- Advised a petrochemical client on transfer pricing frameworks to ensure sustainable longer-term business operating structures
- Worked with numerous petrochemical and refining companies to understand impact of emerging legislation concerning MTBE use in gasoline and response options
- UK & EU Government assignments on eco-labelling in a variety of categories examining policy options for improving (ie. reducing the environmental impact of) products like laundry & dishwashing detergents, personal products, etc.
- Detailed review of the merits of recycling options for a variety of packaging materials (beverage cans, glass bottles, HDPE bottles) for the UK Government
- Undertook review of emissions intensity (mainly greenhouse gases) in certain EU petrochemical sectors to provide better understanding of energy costs, carbon offsets and exemptions on behalf of an industry body affiliate

CASE STUDY

DOWNSTREAM PETROCHEMICAL OPPORTUNITY REVIEW FOR ALBERTA

Alberta is a cost advantaged producer of a range of petrochemicals and polymers. However, the bulk of this material is exported outside Alberta and value then added in other locations. Alberta's Industrial Heartland Association wanted to understand two key issues:



Demand-Pull Model

Is it possible to move to a more “demand-pull” model rather than the current “feedstock-push” model by identifying neglected downstream opportunities in Alberta?



Geographies Driving Development

How have other geographies driven petrochemical development and more particularly the higher added value downstream steps?

A key constraint for Alberta is the modest population, hence the modest associated demand. Downstream processing would always be possible but many end uses would require movement of finished or semi-finished to other locations thereby incurring a cost disadvantage given it would always be cheaper to move polymer resins, etc., in bulk to a consumption center and process them there.

Nevertheless a few possibilities were identified where imports might be displaced or where the local production of certain chemicals is so cost advantaged that producing certain modest scale derivatives would be attractive.

The fundamental challenge is that in many respects, Alberta resembles the Gulf Cooperation Council (GCC) states having a cost advantaged feedstock position but modest local demand and logistic barriers to markets.

To develop heavily integrated petrochemical and polymer industries making a very diverse range of products requires immense demand pull, i.e. population, which is why the industry developed as it did in Western Europe, the US Gulf Coast, Japan and more recently China, India, etc.

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GET IN TOUCH

Engage with us today and see how our formidable team of skilled professionals with extensive hands-on experience and expertise can help you.

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