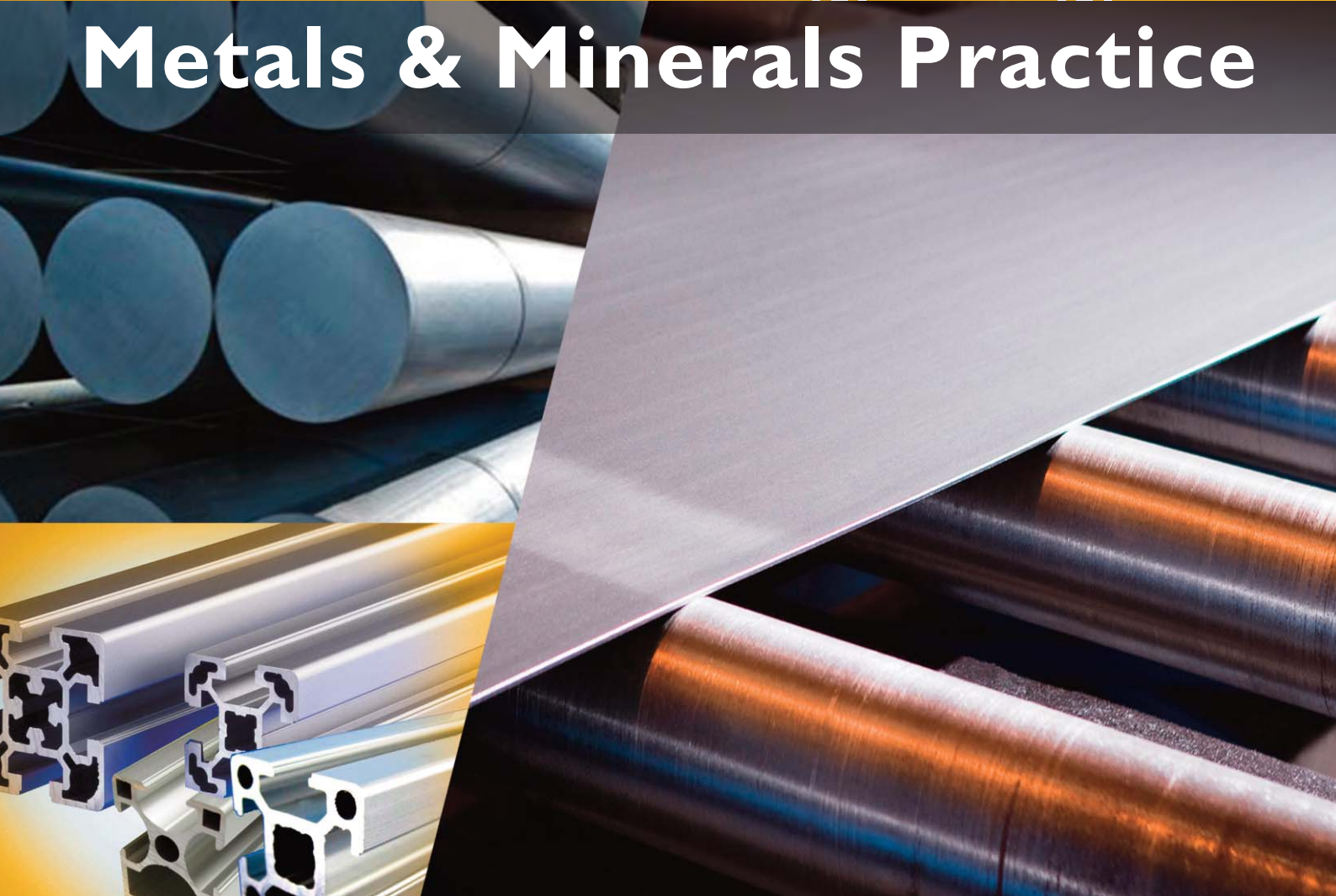




Metals & Minerals Practice



Metals & Minerals Consulting Practice

Frost & Sullivan's Metals & Minerals (M&M) Practice specialises in closely monitoring the global metals, minerals, and mining sectors and provides critical information, opportunities, and strategic recommendations for market participants. From mining to mill to markets, the M&M Practice brings together industry experts from Iron and Steel, Aluminium, Copper, Zinc, Lead, Tin, Titanium, Minerals, and Mining across the value chain.

We have developed comprehensive capabilities focused on each segment combined with specific approaches, methodologies, tools and techniques to enable our clients grow their business. From small to large companies, our mission is to provide deeper insights, practical solutions, and actionable recommendations at every stage of development. We help some of the leading metals and mining companies to make critical decisions on Investments, Strategy, Business Excellence, Mergers and Acquisitions.

Metals & Minerals Markets & Products Coverage



Iron & Steel (Ferrous)

- Pig Iron, Sponge Iron, Hot Briquette Iron, Crude Steel, Semis
- Ferrochrome, Ferromanganese, Ferrosilicon, etc.
- Flat Products – Hot Rolled, Cold Rolled Coils/Sheets/Strips, Galvanized Sheets, Color Coated Sheets, PPGI Sheets, Electrical Sheets, Tin Products, Pickling Process
- Long Products – Bars, Rods, Structural & Rails, Wire Rods, Pipes & Tubes (Seamless, Welded, Galvanized)
- Carbon Steel, Alloy Steel, SBQ Steel, Stainless Steel
- Sheet Metal Components, Fabrication, Castings, Forgings etc.



Non - Ferrous

- Alumina and Primary Aluminum – Ingots, Slabs, Billets
- Aluminum Flat Rolled Products – Plates / Coils/Sheets/Strips, Foils
- Extrusion products, Pipes & Tubes (Rolled), Rods & Conductors, Cables, Wires, Foundry Alloys, Powder/Paste, Cans, Slugs, Scrap Recycling
- Copper – Primary Copper, Copper Semis, Copper Alloys, Copper Flat and Long products
- Zinc and Lead – Zinc & Lead Smelting and refining, Zinc & Lead consuming products
- Others – Nickel, Chromium, Manganese, Titanium, Tin, Niobium, Tantalum, Silicon, Noble metals



Mining & Minerals

- Iron Ore, Bauxite, Copper Ore, Zinc & Lead ore and ores of other metals like Magnesium, Basalt
- Coal, Rare Earth Minerals
- Inorganic Minerals – Silicates, Carbonates, Sulphate, Halides, Oxides, Sulphide, Phosphates
- Organic Minerals
- Industrial Minerals – Magnesite, Kaolin, Bauxite, Limestone, Refractory Clays, Kyanite, Graphite, Potash, Quartz, Dolomite, Chromite, Silica Sand, Barite, PCC, GCC
- Mining equipment like Mineral Sizers, Sampling & Testing etc.



Others

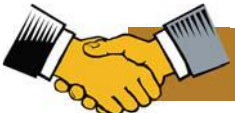
- Graphite Electrodes
- Cryogenic Gas Transport & Storage Tanks
- Cathodic Protection Systems
- Metal Packaging
- Steel Service Centre

Our Service Portfolio & Advisory



Satisfied M&M Clientele – Global List

We have completed ~200 engagements (in the last 6 years) in the Metals & Minerals segment for clients across the globe 



We intend to build a long term business relationship with our clients by providing customised solutions

Ferrous Engagement Advisory

- Global Export Strategy for Steel Long Products and Establishing Marketing Offices
- Strategic Advisory and Feasibility Study for Setting up a Steel Billet Plant
- Detailed Business Plan for Setting Up a Steel Coil Service Center (SSC)
- Strategic Roadmap for the Precision Engineering Components Business
- Strategic Analysis of the Fabrication Equipment Market in Middle East & Business Plan for Acquisition
- Business Plan: Galvanizing Facility for Structural Steel Sections
- Detailed Feasibility Study for setting up a Fabricated Steel products manufacturing facility to cater to O&G segment
- Feasibility Advisory for Setting Up a Tin Plate Manufacturing Unit
- Development of a Business Plan for setting up an Heavy Fabrication Facility to produce Process Equipment like Pressure Vessels, Heat Exchangers
- Advisory on Setting up Forging Plant Focused on Automotive & Non-Automotive Segments
- Flat Steel Industry (HR, CR, Galvanized & Pre Painted) Outlook and Analysis of the Significance of Service Centers for the Steel Market
- Advisory on High Purity Pig Iron (HPPI) Market
- Special Bar Quality (SBQ) market feasibility strategy
- Corrosion Resistant Steel Rebars (CRS) demand in New Segments
- Demand Assessment for Sheet Metal Components & Ferrous Castings
- Analysis on Steel Billets & Rebars Market
- Demand Assessment on Steel Pipes & Tubes market
- Opportunity Assessment of the Galvanized Steel Tubes market
- Demand assessment for Low Relaxation Pre-stressed Concrete Strands
- Market Feasibility for Long and Structural Steel Products
- Assessment of Pipe Spools and Fabricated Plate work products
- Assessment of Clad Pipes, Stainless Steel, Alloy Steel Pipes
- Assessment of Metal Packaging Products



Project Feasibility to set up Graphite Electrodes Plant & Preparing a blue print towards future growth opportunities



Challenge

The client is a global investment company with diverse interests and capabilities. The group's industrial activities are diversified through investments in steel, air conditioning, plastics, glass, chemicals, petrochemicals, energy, ship building and ship repair and services. The client is exploring the possibility of setting up a Graphite Electrodes manufacturing unit in the KSA and wants to draw up a concrete business plan. However, before going in for a detailed feasibility study, it is interested in the overall Market Opportunity Analysis including Partner Prospecting and a Pre-feasibility Study on the entire project.



Approach

Frost & Sullivan assessed the overall market for Graphite Electrodes across the targeted regions / countries by conducting extensive research with steel companies (end users) producing crude steel which involve consumption of graphite electrodes. The suppliers of graphite electrodes across the globe were also interviewed to understand the supply scenario and tapping of a Joint Venture Opportunity with the client



Impact

Frost & Sullivan helped the client decide on plant capacity to address the future Demand Supply gap, identify ideal grades / specification, target potential customers, very broad technical requirements like feedstock grades, utilities, employment opportunities and production process, financial analysis, partner prospecting for project development etc. for the proposed Graphite Electrodes plant.

Non Ferrous Engagement Advisory

- Assessment of Aluminum Downstream Investment Opportunities in the KSA for Japanese Investors
- Detailed Feasibility Study for Setting up of Aluminium Foils plant
- Feasibility Study for Aluminium foils, wire rods, billets and extrusions
- Feasibility Study on Aluminium Powders Project and Identification of JV Partner for the project
- Global Assessment of Aluminium Rods & Bare Conductors Markets covering around 40 countries across South Asia, South East Asia, ANZ, Middle East, Africa, Europe, North & Latin America
- Advisory on Market Entry for Copper Fabricated Products in Middle East and Africa comprising of Wire rods, Bars, Strip, tubes, profiles, ingot, alloys etc.
- Broad Regional Analysis on the Aluminium Coils, Sheets & Foils Market across the Globe
- Advisory on Precious Metals Market Opportunity (Gold, Silver, Platinum, Palladium)
- Advisory on Global Zinc Market & Study on Demand for Zinc across the Indian Subcontinent
- Advisory on Developing Business Plan for a JV company to Manufacture Aluminium Billets & Extrusions
- Global Market Assessment of Aluminium Clad Steel Wires
- Free Trade Agreement (FTA) / Preferential Trade Agreement (PTA) Analysis across Aluminium, Copper, Zinc, Lead and Concentrates
- Detailed Feasibility Study for setting up Copper Tubes Manufacturing unit – including Market Assessment, Engineering Analysis and Financial Modelling
- Study of Phosphor Bronze (Copper Alloy) Market in India and mapping the replacement potential for the High performance plastic
- Advisory services on Company Identification and Due Diligence in Africa for Acquisition/ Joint Venture in Ferro Silicon and Silicon Metal Industry
- Procurement Intelligence:- Strategic Analysis of Aluminium Scrap Sourcing and Availability
- Advisory on Aluminum Coated Coils Market
- Strategic Assessment of Manufacturing Capabilities – Metal Injection Molding, Aluminum and Copper Extrusion, PIM, tool & Dies, Jigs & Fixtures for Industrial Cluster Development
- Market Assessment on Aluminum Dross & Scrap Recycling
- Analysis of Products in the Magnesium & Basalt Downstream Segment for Development
- Strategic Analysis of Competitive Positioning in Key International Zinc Markets and Strategic Assessment of Zinc Ingots Market



Strategic Advisory to develop Titanium Products for an upcoming Integrated Facility



Challenge

The client is a leading global vertically integrated chemical and pigments company, primarily focused on the Titanium Dioxide (TiO₂) technology. The client intends to set up a Titanium Sponge, Ingot, Mill Products (Slab, Bloom & Billet) as well as a Fabrication and Machining Facility to produce Ti Components finding usage in specific equipment that goes into Aerospace and Defence, Off Shore Rigs, Desalination Plants, Medical Equipment, Petrochemical / Chemical Projects in MENA. However, before proceeding into a full-fledged project, the client is interested in a detailed assessment of the KSA / GCC and Overall MENA Region Market Analysis for Titanium Fabricated Components Viz Pressure Vessels, Heat Exchangers, PFHE, and Welded Tubes etc.



Approach

Frost & Sullivan assessed the market of Titanium Fabricated products in MENA, market analysis based on various product specifications, types and end-use applications.

The market size was ascertained and the demand was forecasted. The supply scenario as well as decision making process was also assessed. Drivers and restraints impacting the market were analyzed to estimate the demand forecast of the products during the forecast period (CY 2013-2017).



Impact

Frost & Sullivan's study provided critical insights into the market in terms of potentiality, demand supply scenario, end-use applications and purchasing process and ultimately suggested the business opportunity for the client in MENA.

Mineral & Mining Advisory

- Strategic Business Plan and Identify Opportunity in the Chromite Downstream Value Chain for Future Development
- Detailed Feasibility Study for Gabbro Mining Project in Oman (including geological mapping, contour planning, reserves estimation, key mine machinery selection, conveyor planning & financial model)
- Market Advisory on Industrial Minerals like Calcined Magnesia, Kaolin, bauxite and understand potential of other minerals (including Silica Sand, Quartz, Gypsum, Kyanite, Limestone & Ceramic Proppants) to Formulate Future Business Strategy
- Market Assessment of Lime Stone, Lime, GCC, PCC & Soda Ash
- Market Assessment of Rare Earth Minerals in India and Analysis of Govt. Policy on FDI in Rare Earth Mining in India vis-à-vis the Global Scenario
- Cost Optimization Cost & Preparing a Marketing Plan for existing operations with a special focus on Caustic Calcined Magnesite
- Strategic Advisory on Graphite Electrodes Manufacturing Unit Focused on the Crude Steel Industry
- Strategic Key Market Analysis for High Purity Manganese Sulphate
- Strategic Roadmap for Growth Opportunities in the Ferro Manganese and Silicon Manganese Market
- Advisory services on Company Identification and Due Diligence in Africa for Acquisition/ Joint Venture in Ferro Silicon and Silicon Metal Industry
- Detailed Market Assessment Study for Mineral Sampling, Preparation & Testing Equipment
- Ferroalloys – Identification and Assessment of Potential Ferrosilicon manufacturers in Africa for JV/acquisition



Value Proposition for a Mining Conglomerate in Industrial Minerals



Challenge

The client wished to understand the market for industrial minerals in the Middle East. The study included existing minerals produced by client like Magnesite, Kaolin and Bauxite; additionally, high potential minerals such as the Limestone, Dolomite, Silica Sand, Quartz, Kyanite, Refractory Clays, Chromite, Barite and Graphite were also assessed. The potential opportunities for development of these minerals and their downstream projects were assessed



Key Objectives

- Market Opportunity for above minerals and downstream products
- Revenue projection for the company based on the development of mineral projects
- Identification of high potential minerals and the financial parameters for developing these projects



Approach

Frost & Sullivan assessed the industrial minerals scenario in the entire Middle Eastern region through detailed interviews with existing suppliers and also from customers in the region for these products; Based on this, the current and future demand for these minerals was estimated. Also, specifications of minerals used by each of the end-use applications, their price trends and the potential downstream opportunities for these minerals and financial indicators for developing these projects were looked into.



Impact

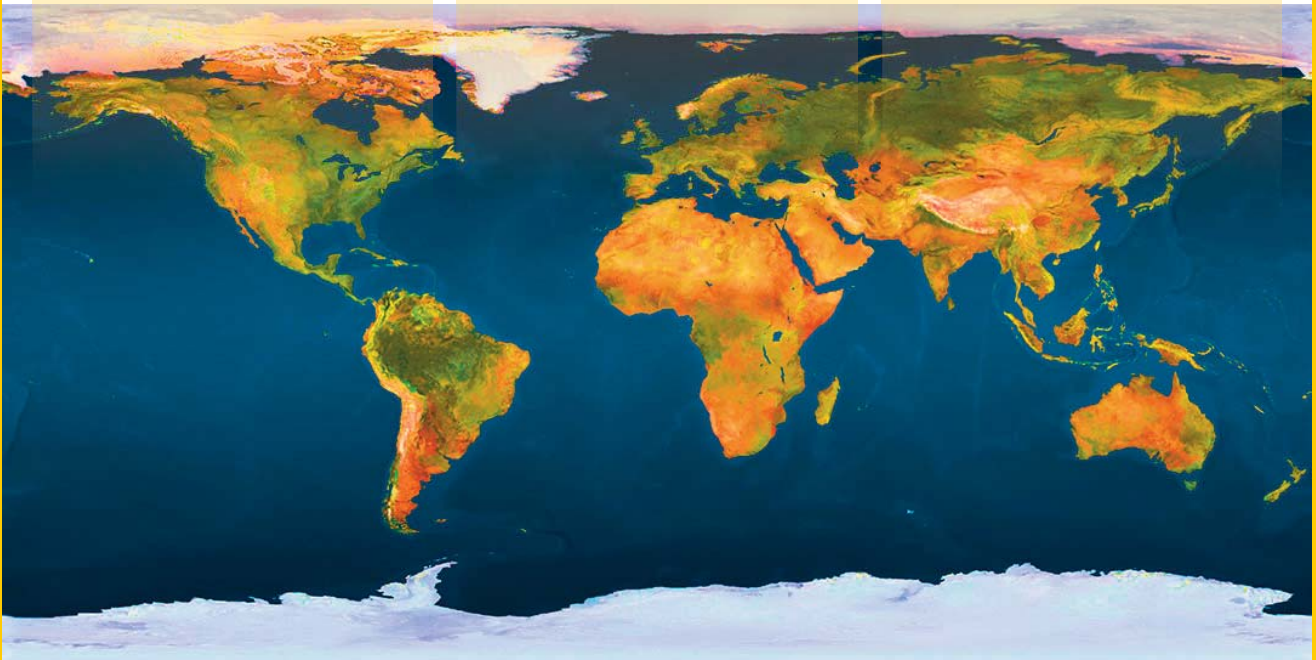
Frost & Sullivan's study provided crucial insight into the current market size opportunity for each of these minerals and projected revenues that can be earned by the company by developing these downstream projects. Frost & Sullivan created an opportunity matrix for each mineral and arrived at the overall ranking of these mineral projects and individual opportunity score thereby understanding the high potential mineral projects to be developed in the region; also strategies to be adopted for successful development and operation were provided.

Why partner with Frost & Sullivan

Frost & Sullivan is a leading global strategy consulting company, headquartered in the United States. Established in 1961, in New York City, the company today has 40+ offices across the globe. It has three offices in the Middle East, in Dubai, Bahrain and the Kingdom of Saudi Arabia.

The company has a domain knowledge approach to strategy consulting and has been working closely with multiple family run businesses in the KSA and the GCC, to develop their long term strategy and identify specific areas of business opportunity.

GLOBAL FOOTPRINT	CONSULTING SERVICES	INDUSTRY EXPERTISE
<p>40+ offices,</p> <p>30 Countries</p> <p>1800+ Consultants</p> <p>250,000+ Clients serviced worldwide</p> <p>Fortune 1000 clients & SMEs</p>	<p>Strategy / Business Planning</p> <p>Market Intelligence</p> <p>Competition Benchmarking</p> <p>M&A / Financial Modelling</p> <p>Organization Restructuring</p> <p>Mfg / Process Consulting</p> <p>Technology Research</p>	<p>12 Industries</p> <p>50+ Product Categories</p> <p>Combination of Market, Technology, Economics & Applications</p>



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