FMC Corporation Key Financials

**FMC Corporation**
- Revenue: $3,378
- EBIT: $621
- Margin*: 18.4%

**Industrial Chemicals**
- Revenue: $1,039
- EBIT: $155
- Margin*: 14.9%

**Specialty Chemicals**
- Revenue: $879
- EBIT: $200
- Margin*: 22.7%

**Agricultural Products**
- Revenue: $1,465
- EBIT: $348
- Margin*: 23.8%

*LTM ending December 31, 2011 ($ millions)*

*EBITMargin*
FMC Lithium Summary

• #2 producer in world (revenue basis)

• Integrated operational footprint:
  — 5 production sites worldwide
  — Only mine-to-metal producer in the world
  — R&D presence in the U.S., India, China
  — One of world’s top lithium resources

• Industry Innovator:
  — Unique brine process technology
  — Experience in cathode development

• Market leader:
  — #1 supplier: LiOH, LiCl, specialty salts
  — Leader in downstream metals, organics

• Commitment to the industry:
  — First supplier to Li-ion battery segment
  — Argentine expansion(s) underway
FMC Lithium Market Share and End Markets

2011 market size: $950~$1,000 million

- FMC is the world’s second largest supplier of lithium chemicals
- FMC markets a broad range of products that serve diverse and growing markets – led by strong growth in energy storage

Source: FMC estimates; Company Websites
Lithium Division Global Plant Locations

- Bessemer City, North Carolina, US
- Salta, Argentina
- Patancheru, India
- Bromborough, United Kingdom
- Zhangjiagang, China
- Naoshima, Japan

OFFICES
- Charlotte
- Bromborough
- Shanghai
- Bangalore
- Tokyo
FMC operations are located in a region of the Andes Mountains called the “Lithium Triangle”

- Lithium rich brine is extracted via wells from dry salt lakes called salars
- FMC’s salar is located at over 4,000 meters and encompasses an area of 300 sq. km
- FMC commenced operations in 1997 and operates four facilities in Argentina

![Map of the Lithium Triangle with FMC facilities marked: Fenix Salar and Carbonate Plant, Guemes Chloride Plant, Salta Administrative Offices, and Pocitos Transfer Station.](image)
Lithium Division Product Tree

- Lithium Brine
  - Potash
  - Lithium Carbonate
  - Lithium Chloride
    - Lithium Hydroxide
      - Specialty Inorganics
      - Li hypochlorite
    - Lithium Bromide
      - Specialty Inorganics
    - Lithium Metal
      - Butyl-lithium
      - Specialty Organics
      - Lithium foils, ingots

Other locations:
- Argentina
- China, India, UK

Bessemer City, USA
Lithium Division Expansion Activities

- Commissioned a proprietary metal distillation unit in Nov 2011 at Bessemer City to supply high purity metal to the battery and metal alloy markets. FMC is the only manufacturer outside of China with these in house capabilities.

- Currently completing an expansion in Argentina which increases lithium carbonate capacity by 30% and adds Potash capacity.

- Working with Argentine authorities to construct a 145km gas pipeline to the salar. Funding is approved and completion is targeted for early 2013.

- Completing pre-engineering work in preparation for a 60% LCE capacity expansion to the Fenix site as well as construction of a new LiOH plant at the Bessemer City site.
Global Lithium Demand

- Energy applications remain growth driver over next decade
  - Smart phones and Tablets main drivers in consumer electronics
  - Transportation sector grows to 25% of industry demand by 2020
- New applications in grid storage, alloys and solar emerging

Source: FMC estimates; IDTechEx; SignumBOX
### Electric Two-Wheeled Vehicles
- **Typical Lithium Content:**
  - E-bikes: 0.3 kg LCE/vehicle
  - E-scooters: 0.07 kg LCE/vehicle
  - E-motorcycles: 0.5 kg LCE/vehicle
- **Penetration Rates and Total Fleet Size:**
  - 2015: Overall 50%; 15 million vehicles
  - 2020: Overall 65%; 35 million vehicles

### Light Duty Vehicles
- **Typical Lithium Content:**
  - EV: ~15 kg LCE/vehicle
  - HEV: ~2 kg LCE/vehicle
  - PHEV: ~9 kg LCE/vehicle
- **Penetration Rates and Total Fleet Size:**
  - 2015: EV: 0.5%, HEV: 0.5%, PHEV: 0.45%; 1.3M vehicles
  - 2020: EV: 2%, HEV: 3%, PHEV: 1%; 6 million vehicles

### Electric Buses
- **Typical Lithium Content:**
  - E-bus: ~200 kg LCE/vehicle
  - Hybrid bus: ~20 kg LCE/vehicle
- **Penetration Rates and Total Fleet Size:**
  - 2015: E-bus: 3%; Hybrid bus: 5%; 40,000 vehicles
  - 2020: E-bus: 7%; Hybrid bus: 13%; 115,000 vehicles

*Source: FMC estimates; IDTechEx; SignumBOX; Company Websites*
FMC’s Products for Energy Storage

Battery cost, performance and safety greatly effected by the quality of our products:
• Assay control
• Impurity profile
• Physical properties: particle size distribution, flow ability
• Lot-to-lot consistency

SLMP: Stabilized Lithium Metal Powder - SLMP®, anode lithiation technology
Global Lithium Demand and Supply

• Present producers will maintain the most favorable position to meet industry growth
• Utilization rates for present producers will be higher than industry average due to favorable cost position and economies of scale
• New entrants will face significant hurdles from cost and project economics standpoint
High Entry Cost for New Brine Projects

Project cost estimates for a 100 sq.km concession designed to produce 25kMT/yr of lithium carbonate with/without potash:

<table>
<thead>
<tr>
<th></th>
<th>in million USD</th>
<th>Li₂CO₃+Potash</th>
<th>Li₂CO₃</th>
</tr>
</thead>
<tbody>
<tr>
<td>Govt extraction contract cost (Chile and Bolivia Only)</td>
<td>?</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Land concession cost ($5-$20K per Ha)</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Exploration Related Costs (surveys, drilling, pilot facilities)</td>
<td>35</td>
<td>25</td>
<td></td>
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<tr>
<td>Plant Engineering Design</td>
<td>30</td>
<td>20</td>
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<tr>
<td>Plant Construction &amp; Installation</td>
<td>135</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Lined Evaporation and Concentration Ponds</td>
<td>127</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>Contingency</td>
<td>32</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>459</strong></td>
<td><strong>337</strong></td>
<td></td>
</tr>
</tbody>
</table>

Extraction contract fee would inflate cost further

Comparative Size of Present Producers

<table>
<thead>
<tr>
<th></th>
<th>Concession size (sq. km)</th>
<th>Pond system size (Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQM</td>
<td>790</td>
<td>~2000+</td>
</tr>
<tr>
<td>Chemetall</td>
<td>170</td>
<td>~2000+</td>
</tr>
<tr>
<td>FMC</td>
<td>300*</td>
<td>~600**</td>
</tr>
</tbody>
</table>

* FMC has full title, not regulated by time or volume limits
** FMC ponds system smaller due to SA extraction process

Concessions need to be big to accommodate ponds and ancillary operations

100 hectares = 1 sq. km

Source: FMC estimates; Company Websites
Relative Costs by Lithium Source

- Cost estimates vary depending on lithium deposit quality, climatic conditions, logistics, energy costs and many other factors
- Mineral based conversion has higher energy and processing costs than brine sources
- Newer brine sources vary widely in quality, lack economies of scale and are logistically complex to operate due to lack of infrastructure
- No new brine resources exceed the quality of current operations

* Based on 15-year plant life

Source: FMC estimates; Company Websites
• Development costs are high for new projects due to remote locations and high degree of infrastructure required to get to the commercial production stage
• Current producers can expand with lower capital requirements due to existing infrastructure and economies of scale
• Economics for new projects depend on price levels much higher than past peak

Source: First Analysis; Company Websites
FMC’s History as an Industry Leader

- 1941: Founded as Lithium Corporation of America
- Late 1940s: Started producing catalyst grade lithium metal in MN
- 1954: Started producing lithium carbonate and hydroxide from spodumene
- Late 1950s: Started producing low-sodium lithium metal
- 1991-1992: Entered energy storage market as lithium salts supplier
- 1995: Entered cathode market as advanced materials supplier
- 1996-1998: Transitioned from spodumene-based to brine-based production
- 2004: Developed revolutionary Anode lithiation technology (SLMP®)
- 2008: Opened Center of Lithium Energy Advanced Research (CLEAR) Lab
- 2010: Initiated a 30% capacity expansion in Argentina
- 2012+: Continued expansions in primary salts, metal and organics