Merger between LG Chem and LG Life Sciences

2016. 9. 12
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LG Chem is pursuing the Energy / Water / Bio business as the new growth engine for more advanced business portfolio. Particularly, LG Chem searched for opportunities in the Red Bio business due to its attractive market size and growth potential.

**Bio Market size & Growth rate (2010~2020)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Green Bio</th>
<th>White Bio</th>
<th>Red Bio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1,100</td>
<td>650</td>
<td>1,100</td>
</tr>
<tr>
<td>2014</td>
<td>1,350</td>
<td>710</td>
<td>1,350</td>
</tr>
<tr>
<td>2020(E)</td>
<td>1,800</td>
<td>840</td>
<td>1,800</td>
</tr>
</tbody>
</table>

CAGR(‘10~’20):
- Green Bio: 5.0%
- White Bio: 6.0%
- Red Bio: 4.9%

**Market Trend & Developing Strategy**

- **Green Bio**
  - Market size: KRW 120 tn
  - Big M&A & Active R&D investments by Major Chemical Companies
  - LG Chem entered Agrichemical business by acquiring Farm hannong in 2016 and plans to expand Pesticide & Seeds and etc. globally

- **White Bio**
  - Market size: KRW 180 tn
  - White Bio grows slowly due to low oil price trend and technological uncertainties, however, has high market potential as environmental regulation becomes stricter globally
  - LG Chem is seeking for new business opportunities to improve existing chemical products / process using Bio Technology and to respond to the environmental regulation preemptively

- **Red Bio**
  - A highly profitable\(^1\) sector with Market size of KRW 1,100 tn. In particular, Biopharmaceutical and vaccine business are expected to grow 8% annually
  - LG Chem has considered M&A opportunities to enter 'Red Bio' market where high level of growth is expected

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\(^1\) The average OP Margin of Top 30 pharmaceutical Companies is around 20%
LG Life Sciences' Business Environment

- Good performance in biopharmaceutical products, Vaccines and New Synthetic Medicines
  - Developed and exported 10 biopharmaceutical products including Eutropin (human growth hormone)
  - Approved as supplier of vaccine against Hepatitis B virus and 5 in 1 combination vaccine (pentavalent vaccine) for UN
  - Developed new synthetic medicines such as Factive (antibiotics) and Zemiglo (antidiabetic)

- LG Life Sciences has continued to grow over the past few years, but it was difficult to expand investment in earnest

(Unit: KRW bn)

<table>
<thead>
<tr>
<th></th>
<th>'11</th>
<th>'12</th>
<th>'13</th>
<th>'14</th>
<th>'15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>382</td>
<td>406</td>
<td>417</td>
<td>426</td>
<td>451</td>
</tr>
<tr>
<td>Operating Profit (%)</td>
<td>(3.1)</td>
<td>(3.8)</td>
<td>(3.5)</td>
<td>(3.8)</td>
<td>(5.6)</td>
</tr>
<tr>
<td>R&amp;D Investment</td>
<td>73</td>
<td>71</td>
<td>73</td>
<td>80</td>
<td>78</td>
</tr>
<tr>
<td>Facility Investment</td>
<td>62</td>
<td>54</td>
<td>72</td>
<td>32</td>
<td>73</td>
</tr>
</tbody>
</table>

CAGR 4%

Needs for a large-scale Investments

- Developing new pharmaceutical products to be a global player requires huge R&D investment in long-term view

[Example of cost structure for developing new drugs (per product)]

<table>
<thead>
<tr>
<th></th>
<th>Research/Pre-clinical trials (5yrs)</th>
<th>Phase-1 / 2 (1.5 / 2yrs)</th>
<th>Phase-3 (3-5yrs)</th>
<th>Total (11.5-13.5yrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Domestic / Emerging</td>
<td>15</td>
<td>5 / 20</td>
<td>30 ~ 60</td>
<td>70 ~ 100</td>
</tr>
<tr>
<td>Global</td>
<td>30</td>
<td>20 / 50</td>
<td>300 ~ 600</td>
<td>400 ~ 700</td>
</tr>
<tr>
<td>% of success</td>
<td>0.03% / 2%</td>
<td>10% / 30%</td>
<td>50%</td>
<td></td>
</tr>
</tbody>
</table>

※ Differs by a level of difficulty, Clinical trial size, test period, Bio/Chem Type

- In consideration of low probability of success in developing new drugs, the system that can manage 10 ~ 20 projects at the same time is needed. Thus, expansion of investment resources and enhancement of capability should be achieved in advance
LG Chem plans to enhance the future-oriented business portfolio and become ‘Global Top 5 Chemical Company’ in 2025 by entering ‘Red Bio’ Sector via merger with LG Life Sciences.

**Background of Merger**
- To enhance the future-oriented business portfolio
- To strengthen the core competitiveness of Red Bio Business dramatically
  - By securing investment resources & upgrading business Infrastructure
- To share the synergy generated from both businesses
  - By developing new materials, Genetic modification technology, Approval & registration of overseas licenses and etc.
  - By sharing Global business infrastructure / Technology networks
  - By improving the pace of commercialization through sharing capabilities of production expertise

**Management Plan after Merger**
- **Expanding investment in Red Bio Sector**
  - R&D / Facility investment: As-is 130bn/y → 3 ~ 500bn/y → New opportunity search and global clinical trials
- **Setting up the Bio business-specific operation system**
  - Specialized compensation system to secure & develop talented HR
  - Differentiated decision making for investment & Performance management system
  - Enhancing management & operation capability with intensive support from HQ of LG Chem

**LG Chem’s Mid-to-Long term Goal**
To become ‘Global Top 5 Chemical Company’ with well-balanced business portfolio that embraces Basic materials & Chemicals, Energy Solutions / I&E materials, and Bio business

- Sales: KRW 20tn(’15) → KRW 50tn (’25, Bio accounts for 10%)
II. Main contents of Merger

1) Contract

<table>
<thead>
<tr>
<th>Remaining entity</th>
<th>LG Chem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposed entity</td>
<td>LG Life Sciences</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>Common Stock</th>
<th>Preferred Stock</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LG Chem</td>
<td>LG Life Sciences</td>
</tr>
<tr>
<td>Based Share Price¹)</td>
<td>KRW 253,390</td>
<td>KRW 66,053</td>
</tr>
<tr>
<td>Merger Ratio</td>
<td>1 : 0.2606772</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Classification</th>
<th>Total number of issued shares</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Stock</td>
<td>4,321,243</td>
<td>Common / Preferred stocks after merger will be assigned to LG Life Sciences’ common / preferred stock shareholders on the date of merger according to their share ratio</td>
</tr>
<tr>
<td>Preferred Stock</td>
<td>59,879</td>
<td></td>
</tr>
</tbody>
</table>

- New stocks after merger will be assigned to LG Life Sciences’ treasury stocks (Including the treasury stocks to be owned by exercising put back option)

- Conditions of contract cancellation
  - In case shareholders holding more than 20% of LG Chem’s total outstanding shares disagree with the small-scale merger
  - In case LG Chem’s the articles of incorporation cannot be changed
  - In case the total exercised put back amounts from LG Life Sciences shareholders exceed KRW 300bn (Put back prices for LG Life Sciences: Common stock KRW 67,992, Preferred stock KRW 44,135)

¹) Calculation method of based share price for merger: average of latest close price, recent 1 week, and 1 month weighted average price (Based on Article 165 (4) of Capital Markets and Financial Investment Services Act)

²) The put back price: average of recent 1 week, 1 month, and 2 months weighted average price (Based on Article 165 (5) of Capital Markets and Financial Investment Services Act)
We are planning to complete the merger on the date of Jan.1, 2017, after the resolution by the Board of Directors on Sep.12, the shareholders meeting for changing the article of incorporation on Oct.31, and the Board of Directors for the merger approval on Nov.28.

1) As new issued shares are less than 10% of LG Chem’s total issued shares, the merger will be a small-scale merger with the approval of the the board of directors instead of approval of shareholders meeting (No put back option).