High purity lithium carbonate

Targeting fast growing lithium-ion battery markets and other advanced applications

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Ideal geographical location
Mining friendly jurisdiction and strong infrastructure

Keliber production plant and key transport hubs

- Well positioned for European markets
- Strong, existing infrastructure
- Valid permits, claims and reservations

16 February 2017
Reserves
Sufficient for production of 9,000 tons of lithium carbonate per annum for +11 years

Latest estimate of mineral resources and ore reserves (million metric tonnes)

<table>
<thead>
<tr>
<th>Mt</th>
<th>Läntä</th>
<th>Syväjärvi</th>
<th>Outovesi</th>
<th>Rapasaari</th>
<th>(Leviäkangas)</th>
<th>(Emmes)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resources:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measured</td>
<td>0.437</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.437</td>
</tr>
<tr>
<td>Indicated</td>
<td>0.910</td>
<td>1.530</td>
<td>0.283</td>
<td>1.811</td>
<td>0.190</td>
<td>0.820</td>
<td>5.544</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>1.347</td>
<td>1.530</td>
<td>0.283</td>
<td>1.811</td>
<td>0.190</td>
<td>0.820</td>
<td>5.981</td>
</tr>
<tr>
<td>Inferred</td>
<td>-</td>
<td>0.190</td>
<td>-</td>
<td>0.160</td>
<td>0.210</td>
<td>-</td>
<td>0.560</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.347</td>
<td>1.720</td>
<td>0.283</td>
<td>1.971</td>
<td>0.400</td>
<td>0.820</td>
<td>6.541</td>
</tr>
<tr>
<td>Ore grade (Li₂O %)</td>
<td>1.06</td>
<td>1.35</td>
<td>1.40</td>
<td>1.25</td>
<td>1.13</td>
<td>1.40</td>
<td>1.26</td>
</tr>
</tbody>
</table>

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Reserves:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proven</td>
<td>0.470</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.470</td>
</tr>
<tr>
<td>Probable</td>
<td>0.540</td>
<td>1.480</td>
<td>0.250</td>
<td>1.780</td>
<td>0.187</td>
<td>0.715</td>
<td>4.952</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1.010</td>
<td>1.480</td>
<td>0.250</td>
<td>1.780</td>
<td>0.187</td>
<td>0.715</td>
<td>5.422</td>
</tr>
<tr>
<td>Ore grade (Li₂O %)</td>
<td>0.94</td>
<td>1.19</td>
<td>1.20</td>
<td>1.09</td>
<td>0.99</td>
<td>1.06</td>
<td>1.09</td>
</tr>
</tbody>
</table>

Ore Reserves are included in the Mineral Resources
Estimates prepared by Competent Persons in accordance with 2012 JORC code

Keliber
High purity lithium carbonate

16 February 2017
Excellent exploration potential
One of the most significant lithium-bearing areas in Europe

Overview of concession areas

- The lithium-rich province of Central Ostrobothnia covers over 500 sq. km
- A number of unexplored areas and excellent potential for further discoveries
- More than 1400 erratic boulders in the area
Innovative Process
Efficient and environmentally sound production of high purity lithium carbonate

Customized process developed together with Outotec

- Optical sorting
- Valuable by-products
- Concentrate grade optimization
- Environment-friendly soda leaching
- Tailings with no heavy metals nor acid generating minerals

High purity lithium carbonate (≥ 99.5%)
Strong commitment to environmental responsibility
Valid environmental permits and ongoing EIA processes

Key environmental aspects

- Operations in a sparsely populated area
- Efficient use of natural resources
- Minimizing damage to the environment
- Valid environmental permit for Länttä deposit and Kalavesi production plant
- EIA process ongoing for five deposits
- Pre-negotiation procedure granted by authorities enabling smooth and quick environmental permitting process
- Protection of Moor Frogs and Golden Eagle
Mines and production plant
Easy access between sites

• Short distances between sites
• Production site has good existing infrastructure (water, sewage, power and electricity)
• No restrictions on layout planning
**Clearly profitable project**
Pre-feasibility study conducted by Sweco Industry Oy

**Key figures of pre-feasibility study and latest management case**

<table>
<thead>
<tr>
<th></th>
<th>Pre-feasibility study Li₂CO₃ production (9,000 t/a)</th>
<th>Latest management case Li₂CO₃ production (9,000 t/a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ore reserves (Mt)</td>
<td>4.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Plant capacity ore (t/a)</td>
<td>400,000</td>
<td>438,000</td>
</tr>
<tr>
<td>Operative time (years)</td>
<td>11.2</td>
<td>12.4</td>
</tr>
<tr>
<td>Basic investment (€m)</td>
<td>164</td>
<td>173</td>
</tr>
<tr>
<td>Total CAPEX (€m)</td>
<td>225</td>
<td>235</td>
</tr>
<tr>
<td>Total OPEX over the operative time (€m)</td>
<td>381</td>
<td>449</td>
</tr>
<tr>
<td>Sales over the operative time (€m)</td>
<td>800</td>
<td>1,090</td>
</tr>
<tr>
<td>Payback time from start-up</td>
<td>Approx. 4 years</td>
<td>4-5 years</td>
</tr>
<tr>
<td>Average lithium carbonate price 2018-2031</td>
<td>7,927</td>
<td>10,910</td>
</tr>
<tr>
<td><strong>Net present value, @ 8% (€m)</strong></td>
<td>97</td>
<td>148</td>
</tr>
<tr>
<td><strong>Internal rate of return</strong></td>
<td>21%</td>
<td>25%</td>
</tr>
</tbody>
</table>

- Management case updates: lithium price, ore reserves, recoveries and by-products
- No immediate threats to the profitability based on sensitivity analysis
- 120–130 new jobs created
Project timeline
Continuing to definitive feasibility study and preparation for production

Tentative timeline for the next stages (2016-2020)

- Definitive feasibility study is on-going
- Basic engineering is on-going
- EIA and permit processes are on-going
- Further drilling and exploration 2017–2018
- Construction to be completed in 2019

Production estimated to start late 2019
Significant upside potential
Further process efficiency, exploration and commercialization of by-products

Management estimate of the upside potential of value creation initiatives

NPV @ 8.0% (EURm)
Increase reserves to 7.8 Mt
Columbite commercialization
Total NPV

148
81
30
22
329

Increase reserves to 7.8 Mt
Columbite commercialization
Total NPV

0
50
100
150
200
250
300
350

NPV (€m)
# Summary

Lithium carbonate production with high value creation potential

1. **Production of high purity lithium carbonate**
   - 9,000 tonnes of lithium carbonate per annum for +11 years
   - Attractive market driven by EV industry

2. **Innovative process developed with Outotec**
   - Efficient and environmentally sound production
   - Recovery of valuable by-products

3. **Ideal geographical location**
   - Mining friendly jurisdiction and strong infrastructure
   - Well positioned for attractive European markets

4. **Profitable project with significant upside potential**
   - Latest management case estimates NPV of €148 million
   - Significant upside potential from value creation initiatives
World around

IM’s latest market assessments put annual deals for 2017 on lithium carbonate (min. 99-99.5% Li2CO3, large contracts, del. US) within a range of $10-16/kg.

Lithium contract prices for 2017 double 2016 levels

By MYLES MCCORMICK
Published: Friday, 16 December 2016

Annual contract agreements for the upcoming calendar year have now largely been settled, with prices up sharply from what was paid on material delivered during the current year.

Vaasa has the vision and the ecosystem for a gigafactory, and much more.