centrotherm photovoltaics AG – Enabling €/Wp Reduction

23 January 2008
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The comparability of the financial disclosures in the 2006 and 2007 reporting periods, particularly those of the nine-month figures, is limited due to several factors:

As a result of the purchase of the operating business of centrotherm Photovoltaics Solutions GmbH & Co.KG by centrotherm photovoltaics AG, which took economic effect as of May 1, 2006, the comparable figures for the first nine months of 2006 reflect only the operating activities for five months. The company had no operating activities for the period between January 1, 2006 and April 30, 2006. The comparability is also limited due to the purchase of shares in GP Solar GmbH, and directly in SOLMIC GmbH. The first-time consolidation of these two companies occurred on a progressive basis, initially in the sub-group financial statements of GP Solar GmbH as of August 1, 2006, and subsequently as of August 1, 2006 in the consolidated financial statements of the company. In addition, shares in centrotherm photovoltaics technology GmbH were transferred to CTPV AG on June 22, 2007, and this company was consequently included in the consolidated financial statements as of June 30, 2007. The percentage change in individual items has not been stated due to their limited comparability.
centrotherm photovoltaics at a Glance

Company Description

- Turn-key lines for solar cells
- Technology for production process and cell architecture
- Access to key equipment
- Innovative business model
- Top tier client base
- Strong order book of > €402m
- Key Figures:

<table>
<thead>
<tr>
<th></th>
<th>2006 (Pro-Forma)</th>
<th>9M 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Output</td>
<td>€107.8</td>
<td>€100.3m</td>
</tr>
<tr>
<td>Sales</td>
<td>€108.5m</td>
<td>€91.7m</td>
</tr>
<tr>
<td>EBIT Margin %</td>
<td>10.5%</td>
<td>11.9%</td>
</tr>
<tr>
<td>Employees</td>
<td>64</td>
<td>143</td>
</tr>
</tbody>
</table>

Note: (1) limited comparability of financial information

Key Figures:

- €100.3m
- €91.7m
- €107.8
- €108.5m

A leading technology supplier for the PV industry

Well positioned to benefit from future capacity expansion
Innovative Business Model Focussing on €/Wp Reduction

How elastic is the PV market to production costs (€/Wp)?

Significant contribution to the cost reduction in the PV industry

Focus on Largest Cost Saving Potentials
- Technology
- Efficiency

De-Bottlenecking of Supply Chain
- Silicon supply shortage

Access to Key Know-How and Equipment
- Competitive advantage
- Access to key equipment

Access to PV Sector for New Investor Groups
- “Easy buying”
Demand for centrotherm photovoltaics products is driven by average annual expected market growth of around 36%.


- Rogol (Apr 2007): 54.6%
- Average: 35.9%
- EPIA - Growth Scenario (Dec 2006): 32.2%
- Solarbuzz (Mar 2007): 31.7%
- Sarasin (2006): 26.3%
- EPIA - Downside Case (Dec 2006): 16.9%

Source: Research reports.
### Blue Chip Client Base and Supplier of Choice for New Entrants

**Key supplier to most of the world’s biggest solar cell producers outside Japan**

**New entrants offer significant turn-key potential**

#### Solar Cells: Current Client Base

<table>
<thead>
<tr>
<th>Company</th>
<th>Expected Capacity Growth ’06-’07</th>
<th>Market Share 2006</th>
<th>CT PV Client</th>
</tr>
</thead>
<tbody>
<tr>
<td>ersol</td>
<td>NA</td>
<td>NA</td>
<td>✓</td>
</tr>
<tr>
<td>Q.CELLS</td>
<td>29%</td>
<td>10.0%</td>
<td>✓</td>
</tr>
<tr>
<td>SUNTECH</td>
<td>40%</td>
<td>6.3%</td>
<td>✓</td>
</tr>
<tr>
<td>MOTECH</td>
<td>50%</td>
<td>4.0%</td>
<td>✓</td>
</tr>
<tr>
<td>HELIOS</td>
<td>NA</td>
<td>NA</td>
<td>✓</td>
</tr>
<tr>
<td>SCHOTT</td>
<td>12%</td>
<td>3.8%</td>
<td>✓</td>
</tr>
<tr>
<td>SeeTec</td>
<td>NA</td>
<td>NA</td>
<td>✓</td>
</tr>
<tr>
<td>SolarWorld</td>
<td>0%</td>
<td>3.5%</td>
<td>✓</td>
</tr>
<tr>
<td>bp solar</td>
<td>59%</td>
<td>3.4%</td>
<td>✓</td>
</tr>
<tr>
<td>SUNPOWER</td>
<td>92%</td>
<td>NA</td>
<td>✓</td>
</tr>
</tbody>
</table>

Source: Photon International 03/2007; centrotherm photovoltaics.

#### Solar Cells: Potential New Entrants

<table>
<thead>
<tr>
<th>Category</th>
<th>Illustrative Client Descriptions</th>
</tr>
</thead>
</table>
| Conglomerates with strong balance sheets | • Chinese key microelectronic manufacturer  
• Asian steel and petrochemical companies |
| Adjacent industries               | • Semiconductor manufacturer  
• Coal and metallurgical silicon companies  
• Glass industry  
• Major Asian utilities |
| Companies from other step of value chain | • Distributors |
| Financial investors               | • Private equity investors  
• Investors seeking attractive investment opportunities |
| Governments                       | • Objective of increasing independence from fossil fuels  
• Countries like Brunei, China, Saudi Arabia |

**Illustrative Client Descriptions**

- **Category**: Conglomerates with strong balance sheets, Adjacent industries, Companies from other step of value chain, Financial investors, Governments

- **Illustrative Client Descriptions**: Chinese key microelectronic manufacturer, Asian steel and petrochemical companies, Semiconductor manufacturer, Coal and metallurgical silicon companies, Glass industry, Major Asian utilities, Distributors, Private equity investors, Investors seeking attractive investment opportunities, Objective of increasing independence from fossil fuels, Countries like Brunei, China, Saudi Arabia
Business Description
Fully integrated 60 MW Turn-Key Line fabrication

- Throughput
- Cell efficiency
- Yield

| Turn-Key Solar Cell Production Factory |
Turn-Key Solution for Solar Cell Production Line

<table>
<thead>
<tr>
<th>Key Process Steps from the Idea Until the Sale of Solar Cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>------</td>
</tr>
</tbody>
</table>

Turn-Key

- Turn-key delivery of a solar cell production factory
- Guaranties for start date and certain other parameters (yield, efficiency, productivity, raw material usage)
- Customer- and technology-support
- Network of strategic partnerships with leading players in production site management and process technology

Provides high certainty of return on investment for client

Source: centrotherm photovoltaics.
## Products and Services – Solar Cell Business

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Technical Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Batch Furnace</strong></td>
<td></td>
<td>Processes: POCl₃-diffusion, BBr₃-diffusion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oxidation - wet and dry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low pressure chemical vapour deposition</td>
</tr>
<tr>
<td><strong>Inline Diffusion</strong></td>
<td></td>
<td>Drive in of liquid dopants (boron, phosphorous)</td>
</tr>
<tr>
<td><strong>Inline Diffusion</strong></td>
<td></td>
<td>Processes: POCl₃-diffusion</td>
</tr>
<tr>
<td><strong>PECVD batch system</strong></td>
<td></td>
<td>SiN antireflective coating</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Technical Specifications</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>POCl₃-diffusion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>BBr₃-diffusion</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Oxidation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wet and dry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Low pressure chemical vapour deposition</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Equipment:**
- Horizontal furnace
- 3-5 tubes per furnace
- Wafer size 156mm and below
- 210mm and below
- Horizontal furnace
- 3-5 tubes per furnace
- Wafer size 156mm and below
- 210mm and below

**Technical Features:**
- POCl₃-diffusion
- BBr₃-diffusion
- Oxidation - wet and dry
- Low pressure chemical vapour deposition
- Drive in of liquid dopants (boron, phosphorous)
- Processes: POCl₃-diffusion
- SiN antireflective coating
<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
<th>Technical Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turnkey CIGS solar cell thin-film line</td>
<td>CIGS Turn-key line</td>
<td>Turn-key with guarantee figures:</td>
</tr>
<tr>
<td></td>
<td>• 30MW</td>
<td>• 10% efficiency (after ramp-up)</td>
</tr>
<tr>
<td></td>
<td>• Proprietary CIGS technology</td>
<td>• 30MW</td>
</tr>
<tr>
<td></td>
<td>• 2 core technologies:</td>
<td>• CIGS Technology</td>
</tr>
<tr>
<td></td>
<td>- Annealing</td>
<td>• Module size: 1,6m²</td>
</tr>
<tr>
<td></td>
<td>- Sputtering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RTP Single Equipment</td>
<td>• Temperature ~ 600°C</td>
</tr>
<tr>
<td></td>
<td>• Rapid thermal processing for CIS fabrications</td>
<td>• Cycle time &lt; 5 min</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Patented sulfur reaction</td>
</tr>
<tr>
<td></td>
<td>Sputter deposition Single Equipment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Large area state-of-the-art coating for thin film solar modules</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Coating width up to 2,2m</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Proprietary cathode technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Own target production</td>
</tr>
</tbody>
</table>

Exclusive access to a wide range of technologically leading key equipment for thin-film solar modules production produced by centrotherm Thermal Solutions and FHR
## Products and Services – Silicon Business

### Technical Specifications

<table>
<thead>
<tr>
<th>Name of Product</th>
<th>Picture</th>
<th>Description</th>
<th>Technical Specifications</th>
</tr>
</thead>
</table>
| "Siemens" Reactor | ![Picture](image1.png) | - Chemical vapor deposition (CVD) reactor “Siemens” – type for the production of high quality solar grade poly-silicon  
- CVD process is based on “TriChloroSilane” (TCS) and “Hydrogen” (H2) | Package solution with guarantee figures:  
- Low energy consumption: < 90 kWh/kg  
- High capacity: ~ 150 t/year |
| Converter         | ![Picture](image2.png) | - STC-TCS conversion reactor  
- Conversion process is based on reaction of “SiliconTetraChloride” (STC) and “Hydrogen” (H2) to “TriChloroSilane” (TCS) | Package solution with guarantee figures:  
- Low energy consumption per kg TCS < 5 kWh/kg TCS  
- High conversion efficiency: >16% |
Strong order book continues to benefit from positive market environment and repeat+new customers

### Development of Order Book

<table>
<thead>
<tr>
<th>Date</th>
<th>Order Book (€m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyst Presentation 13.08.2007</td>
<td>221</td>
</tr>
<tr>
<td>as of 30.09.2007</td>
<td>326</td>
</tr>
<tr>
<td>as of 29.11.2007</td>
<td>402</td>
</tr>
</tbody>
</table>

### Main Contracts in 2007

- **Strong increase of order book during by now (> 402 million euros as of today)**
- **1st thin-film turn-key contract signed with Taiwanese customer (30 MW CIGS-Turn Key Production Line, Delivery: 2. HY 2008**
- **19 turn-key solar cell lines** (i.e. Sinsung Corea, Delivery 1. HY 2008; Alison Taiwan, Delivery 2. HY 2008, both orders for 50 MW-Lines)
- **3 orders for delivery of key equipment for silicon production**
- **Strong pipeline of single equipment orders by new and repeat customers (i.e. Q-Cells, Suntech, Solarworld)**
### centrotherm photovoltaics’ Strategic Objectives

#### Strategy based on five market and technology driven key objectives

<table>
<thead>
<tr>
<th>Market</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Further Expansion of Leading Position in Solar Cells</strong></td>
<td><strong>Strengthen R&amp;D Capabilities</strong></td>
</tr>
<tr>
<td><strong>Establish Leading Position in Silicon</strong></td>
<td><strong>Secure Access to Complementary Technologies</strong></td>
</tr>
<tr>
<td><strong>Expand International Presence</strong></td>
<td><strong>Expand technology portfolio</strong></td>
</tr>
</tbody>
</table>

- 0.5 to 1 GWp turn-key production facilities
- CIGS thin-film turn-key supplier
- Engineering services, technology and key equipment
- Service, sales and marketing
- Production process and cell architecture
- Expand technology portfolio
Our long-term vision is to provide a fully integrated 1GWp plant.

Significant cost savings potential is yet to be realised on each step of the c-Si PV value chain.

The ultimate long-term vision is to offer an integrated plant:
- Poly Si (TCS / "Siemens")
- Wafer (multi Si/Cz Si)
- Cell / module (batch type manufacturing)

Cost savings will be driven by economies of scale along the entire value chain.

1 GWp factory is expected to realize the following large technology-related cost savings:
- Cheaper polysilicon production
- Thinner wafers
- Higher cell efficiencies
- Optimization of production process

Fully integrated PV production: Silicon-Ingot-Wafer-Cell-Modules
Financials
as of
September 30, 2007
Sales and Total Output

Sales amounted to 91.7 million euros

Sales inclusive one realized turn-key line

Total output amounted to 100.3 million euros

9M 2006 figures include sales for only 5 months and therefore are limited comparable to 9M 2007

Q3:
Sales declined slightly but total output slightly increased due to rise in inventories and work in progress

*Total output is the relevant key figure for the analysis of centrotherm photovoltaics business development, as it comprehends changes of work in progress
Sales Breakdown

Sales Breakdown by Region 9M 2007
- 71.2% Asia
- 4.2% Europe
- 23.0% Germany
- 1.6% Other

Sales Breakdown by Product 9M 2007
- 72.4% Equipment
- 4.3% Turn-key production lines
- 4.3% Other
- 18.9% Service and spare parts

Comments
- Export: 77%
- Dominant Asian market above 71%
- Growing demand in Southern Europe and in the US expected
- Currently, sales from single equipment are higher than from turn-key production lines
- One turn-key line delivered in the first nine months
- 3 turn-key lines will be delivered in Q4 2007
- Share of sales from turn-key production lines will therefore increase by the end of 2007

Sales breakdown shows importance of international business
EBIT and Net Income

9M:
- EBIT grew to 11.9 million euros
- EBIT margin increased to 11.9%

Q3:
- EBIT amounted to 2.9 million euros
- EBIT margin slightly decreased to 8.3% mainly due to higher personnel expenses and costs related to the setup of our silicon and thinfilm activities

9M:
- Net income increased to 7.4 million euros

Q3:
- Net income slightly decreased to 1.8 million euros, due to a lower net financial result

Comments

Positive development of EBIT and Net income margins in the first nine months 2007

Note: Margins refers to Total Output
Cash Flow from Operating Activities increased to 9.0 million euros as of 30 September 2007 due to improved EBT and higher pre-payments from customers.

Total Cash Flow rose to 9.7 million euros as of 30 September 2007 due to:
- increased operating cash flow (+12.9 million euros)
- increased cash flow from financing activities (+3.5 million euros) resulting from capital increases

Total cash was 18.5 million euros as of 30 September 2007.
centrotherm photovoltaics – Investment Highlights

centrotherm photovoltaics presents an attractive set of investment propositions

Innovation is not limited to technology

8 Pillars of Success

1. Innovative Business Model Focussing on €/Wp Reduction
2. Attractive Growth Prospects Driven by PV-Market Dynamics
3. A Leading Market Position for Solar Cell Production Equipment
4. Well Positioned to Succeed in Silicon
5. Strong Order Book and Earnings Visibility
6. Blue Chip Client Base and Supplier of Choice for New Entrants
7. Ongoing Founding Shareholders’ Commitment
8. Strong Management Track Record

Innovation is not limited to technology
Thank you for your attention!