

# Report as of September 30, 2009

November 11, 2009

**centrotherm**  
photovoltaics

Silicon & Wafer  
Solar cell & Module  
Thin film  
Semiconductor



We have exercised utmost care in the preparation of this presentation. It contains forecasts and/or information relating to forecasts. Forecasts are based on facts, expectations, and/or past figures. As with all forward-looking statements, forecasts are connected with known and unknown uncertainties, which may mean the actual result deviates significantly from the forecast. Forecasts prepared by third parties, or data or evaluations used by third parties and mentioned in this communication, may be inappropriate, incomplete, or falsified. We cannot assess whether information, evaluations, or forecasts made by third parties are appropriate, complete, and not misleading. To the extent that information in this presentation has been taken from third parties, or these provide the basis of our own evaluations, such use is made known in this report. As a result of the above-mentioned circumstances, we can provide no warranty regarding the correctness, completeness, and up-to-date nature of information taken, and declared as being taken, from third parties, as well as for forward-looking statements, irrespective of whether these derive from third parties or ourselves.

Rounding differences may arise.

**1. centrotherm photovoltaics at a Glance**

**2. Highlights**

**3. Financial Results**

**4. Outlook**

**5. Appendix**

# centrotherm photovoltaics at a Glance

- Technology and equipment supplier for PV industry
- Market-leading player of turnkey crystalline solar cell production lines
- Competitive advantages:
  - Leading in technology
  - Unique offering over full PV value chain
  - Lowest cost of ownership solutions



**Business Divisions**

Silicon & Wafer

Solar cell & Module

Thin film

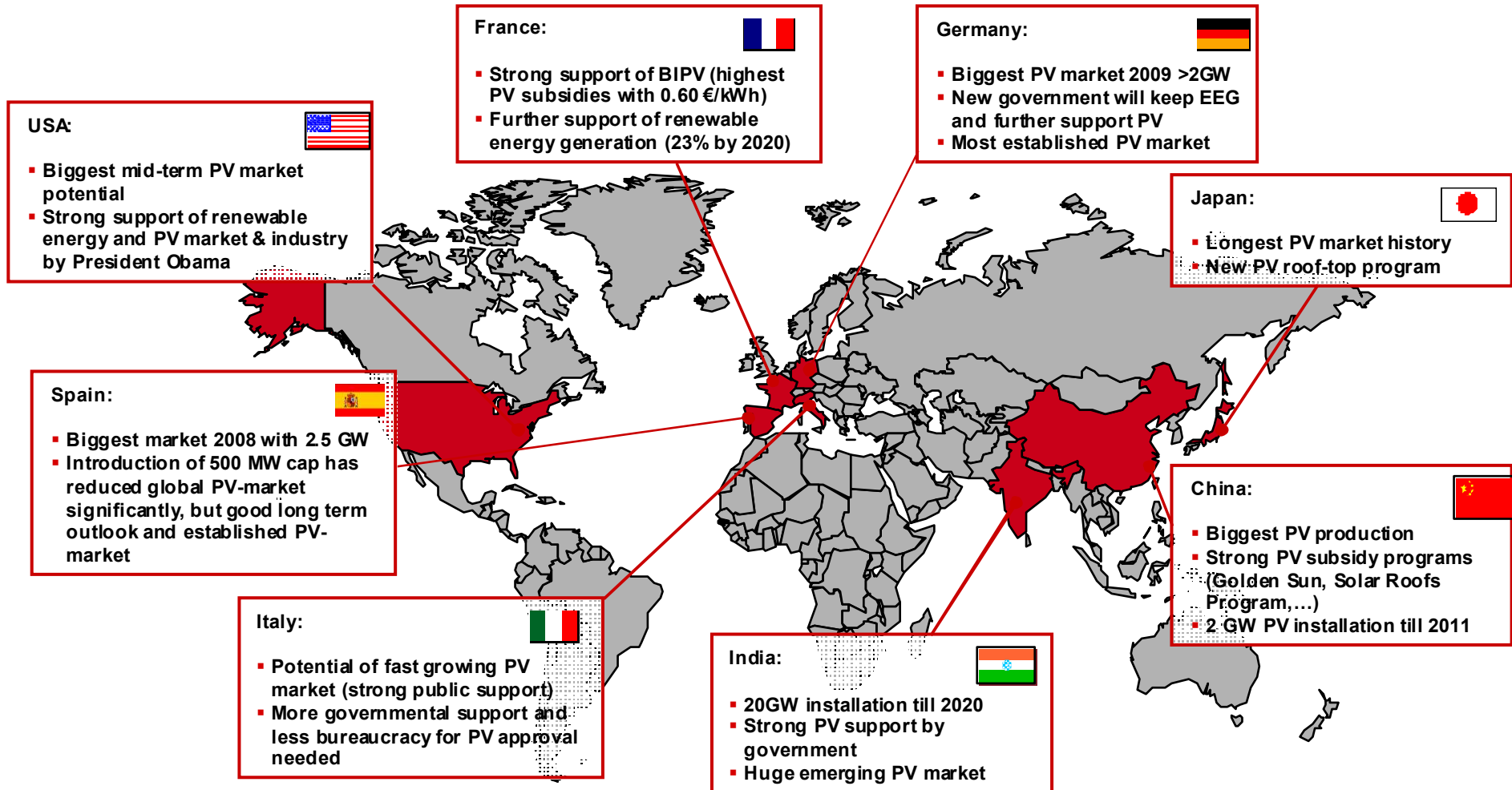
Semiconductor & Microelectronics

**Technology & Equipment**

Turnkey Production Plants - Turnkey Lines - Key Equipment - Services

**Key Figures**

|                   | 2007          | 2008          |
|-------------------|---------------|---------------|
| <b>Employees:</b> | 178           | 1,050         |
| <b>Sales:</b>     | € 166 million | € 375 million |
| <b>EBIT:</b>      | € 21 million  | € 43 million  |

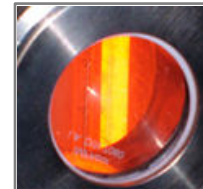


## Market Trends

- Silicon prices stabilizing -> Target production costs: < 20 €/kg by end 2011
- CTN assumption: Future demand coming from countries with new subsidy PV programs -> They will install polysilicon production (e.g. Ukraine)
- centrotherm photovoltaics has aligned product portfolio to new Chinese polysilicon manufacturer requirements
- Expansion investments as future growth driver

## Product / Technology Strategy

- Focus on sustainable products and technology (e.g. VGR)
- Focus on expansion business by cost reduction of 10-20%:
  - Extended basic engineering concept
  - Single equipment with highest performance parameters
  - Fully integrated factory
  - Upgrade of existing facilities

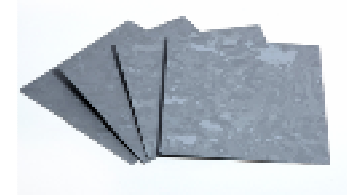




TCS synthesis unit  
Reactor & Converter  
Vent gas recovery



Crystallization  
furnace



Wire saw

Scope of  
performance

Interface Optimization  
~ 12.....15 %

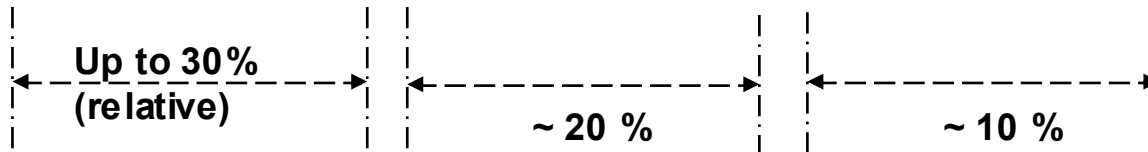
Interface Optimization  
~ 5.....10 %

Saving potential



**Saving  
potential  
~ 40-50% in  
3-5 years**

OpEx (€/kg)



→ in process section saving

## New Chinese requirements for polysilicon projects

- Output more than 3.000 t/a
- Limited area / factory site <6ha/kt
- Maximal power consumption for solar grade deposition < 60 kWh/kg
  
- Vent gas recovery ratio:  
Efficiency of the total recovery system
  - 98,5% (SiCl<sub>4</sub>)
  - 99% (HCl, H<sub>2</sub>)

## centrotherm Technology / Equipment

yes

yes (Basic engineering)

yes, modified reactor

yes

## Market Trends

- Increasing investments in solar parks
- Increasing capacity utilization rates of solar cell & wafer producers
- First signs of price stabilization
- Increasing demand since exhibition in Hamburg in September 2009
- centrotherm photovoltaics working at full capacity until spring 2010
- Shorter order cycles



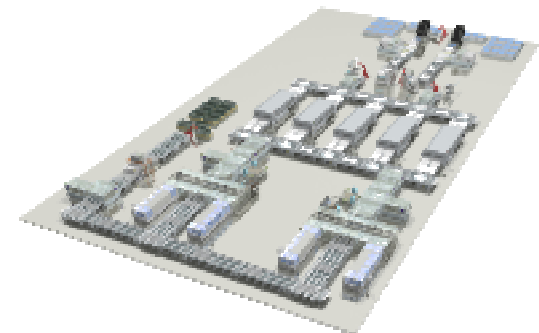
## Product / Technology Strategy

- Focus on highest efficiency
  - Selective emitter technology
  - Direct plasma process
- Focus on De-Engineering (“Minimal concept”)
- Interdependency between solar cell & module
- Module technology with customized modules
- M&A analysis on wet chemistry & automation equipment (Europe, Asia, USA)



## Integrated solar cell and module factory

- Guaranteed performance parameters like in all centrotherm turnkey factories (Yield, throughput, certified module, project schedule)
- Guaranteed, very competitive module power, in combination with FlexLine + cell technology (Selective emitter)
- Cell structure and process flow optimized for high module power
- Low CoO, e.g. by optimization of consumables (Pastes, etc.)



## Market Trends

- Future demand for thin film modules coming from solar parks and buildings
- Thin film technology under price pressure
- Only high efficiency thin film is competitive on the market



## Product / Technology Strategy

- Focus on sustainable products and technology
- Focus on highest efficiency -> CIGS with highest potential
- In general production costs must come below level of solar cell module production costs



**1. centrotherm photovoltaics at a Glance**

**2. Highlights**

**3. Financial Results**

**4. Outlook**

**5. Appendix**

## Continuing sales and earnings growth

- Sales: € 374.7 million (+ 58.1%)
- EBITDA: € 50.7 million (+62.3%)
- EBIT: € 35.5 million (+16.8%)



New offices in Blaubeuren are near completion



Shanghai – Registered office of third Asian sales & service company

## Silicon & Wafer

### New version of crystallization furnace

- Higher performance output (7.5 MWp per year)
- Shorter process cycles (average: ~56 hours)
- Substantial less process variations



Crystallization furnace

## Solar cell & Module

### New generation of tube furnaces for diffusion and oxidation

- 25% greater capacity
- Simplified automation
- More streamlined design

### New Turnkey-Line FlexLine Plus with patented selective emitter technology

#### Efficiencies:

- Mono-Si: 18%
- Multi-Si: 16.6%

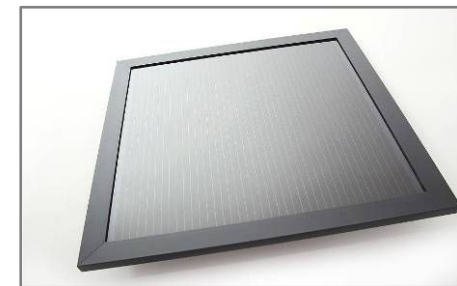


POCl<sub>3</sub> Diffusion furnace

## Thin film

### Achievement of 13% efficiency at pilot line


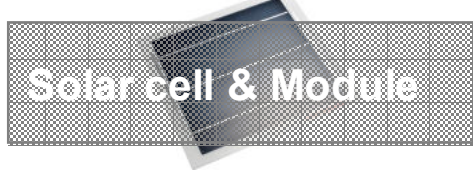

- Patented production process translates to competitive advantages
- Pilot line enables efficient technology transfer to production
- Efficiencies of up to 12% for turnkey lines expected



Thin film module from own R&D production line

Research and development expenses 9M 2009: **€ 19.4 million** → R&D ratio: 5.2%

Intensifying our R&D activities in Constance

|                 |   |   |   |
|-----------------|--|--|--|
| R&D Expenses:   | € 6.1 million  | € 7.8 million<br>(including semiconductors of € 0.4 million)   | € 5.5 million  |
| R&D Activities: | <ul style="list-style-type: none"> <li>▪ Further productivity improvements of crystallization furnace</li> <li>▪ Design of new CVD reactors and high pressure converter completed</li> </ul> | <ul style="list-style-type: none"> <li>▪ FlexLine Plus with selective emitter front side technology shows efficiency of &gt;18%</li> <li>▪ Development of new back side technology started</li> <li>▪ Development of CVD equipment with higher throughput</li> </ul> | <ul style="list-style-type: none"> <li>▪ Development of new analytics “in situ XRD”</li> <li>▪ Efficient process transfer from pilot line to production line</li> <li>▪ Cell efficiency of 13% realized in laboratory</li> </ul> |

## Silicon & Wafer:

| Project                        | Country | Status  |
|--------------------------------|---------|---|
| Asia Silicon                   | China   | Project executed (FAT)                            |
| Shaanxi                        | China   | Ramp-up   |
| Taiwan Polysilicon Corporation | Taiwan  | Move in / Equipment                               |
| Confidential                   | China   | Delivery completed<br>Preparation of installation |
| Confidential                   | China   | Preparation of delivery                           |
| Confidential                   | Ukraine | Preparation of delivery                           |
| Confidential                   | China   | Preparation of delivery                           |

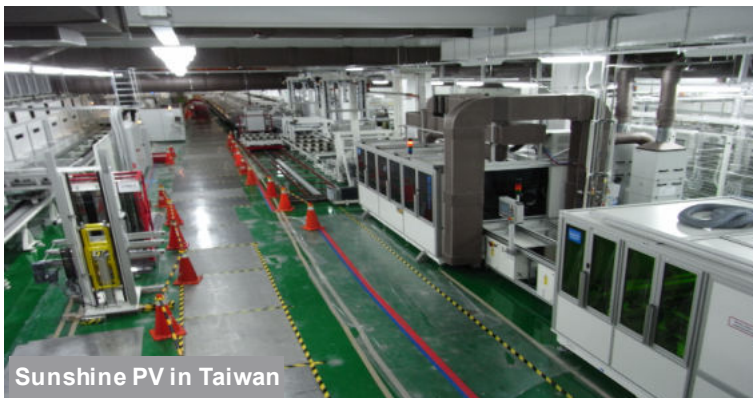
## Project Status - Abstract (2)

---



### **Solar cell & Module:**

- Solar cell turnkey production plant up and running
- Capacity: 250 MW
- Enabling industrial entry into photovoltaics market



### **Thin film:**

- Commissioning of first CIGS turnkey production line at Asian customer in progress
- New CIGS module manufacturing process established
- “First Module Out” expected by the end of 2009

## Key Figures Summary

|                           | 9M 2009                           | 9M 2008                           |
|---------------------------|-----------------------------------|-----------------------------------|
| <b>Sales</b>              | € 374.7 million                   | € 236.9 million                   |
| <b>Order book*</b>        | € 922.4 million                   | € 1,005.4 million                 |
| <b>EBITDA</b>             | € 50.7 million<br>(margin: 13.5%) | € 31.3 million<br>(margin: 13.2%) |
| <b>EBIT (before PPA)</b>  | € 47.2 million<br>(margin: 12.6%) | € 30.4 million<br>(margin: 12.8%) |
| <b>EBIT</b>               | € 35.5 million<br>(margin: 9.5%)  | € 30.4 million<br>(margin: 12.8%) |
| <b>Earnings per share</b> | € 1.18                            | € 1.48                            |

\* As of reporting date

All margins refer to sales

1. centrotherm photovoltaics at a Glance

2. Highlights

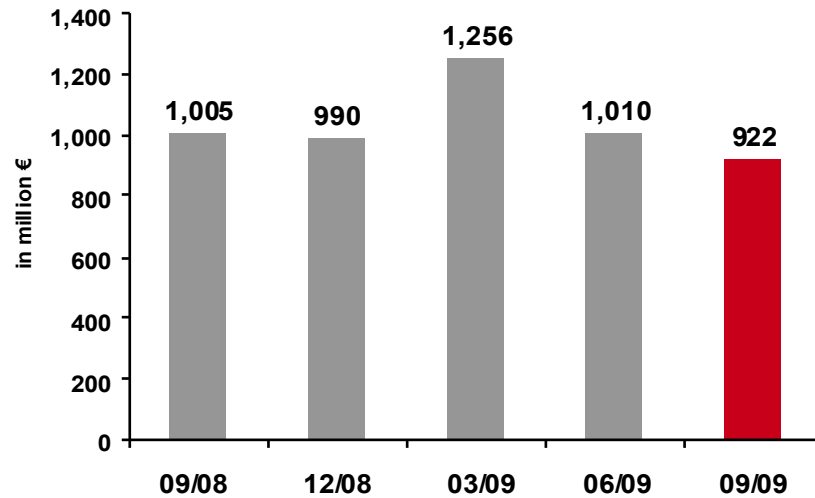
**3. Financial Results**

4. Outlook

5. Appendix

# Update on Order Book as of September 30, 2009

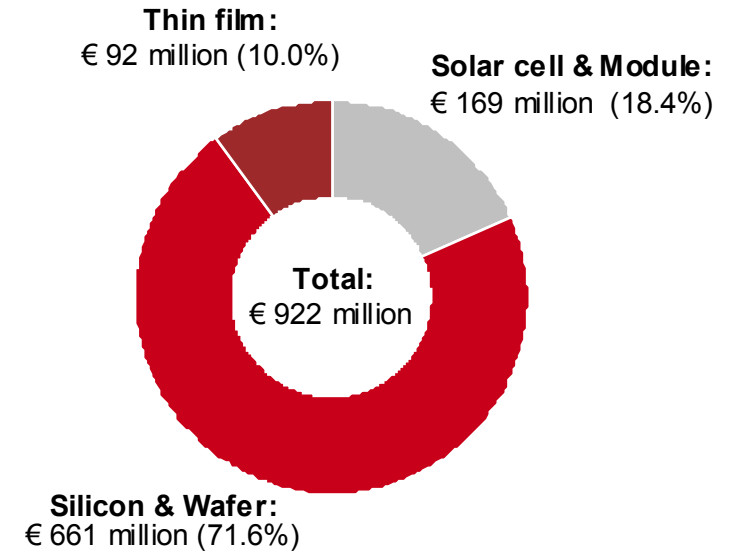
## Development of Order Book



### Order book contains:

- Silicon & Wafer: 8 orders  
(capacity: 21,700 tonnes)
- Solar cell & Module: 22 turnkey lines  
(capacity: 905 MWp)
- Thin film: 2 turnkey lines  
(capacity: 80 MWp)

## Split by Business Segments

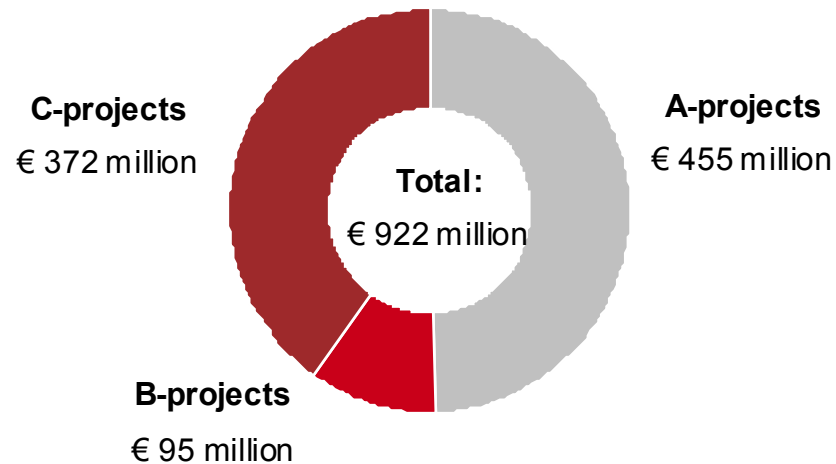


### Order intake Q3 2009: € 41.2 million, thereof:

- Solar cell & Module: € 28.9 million
- Silicon & Wafer: € 6.6 million
- Thin film: € 5.7 million

# Stability of Order Book as of September 30, 2009

## Split by Project Classification

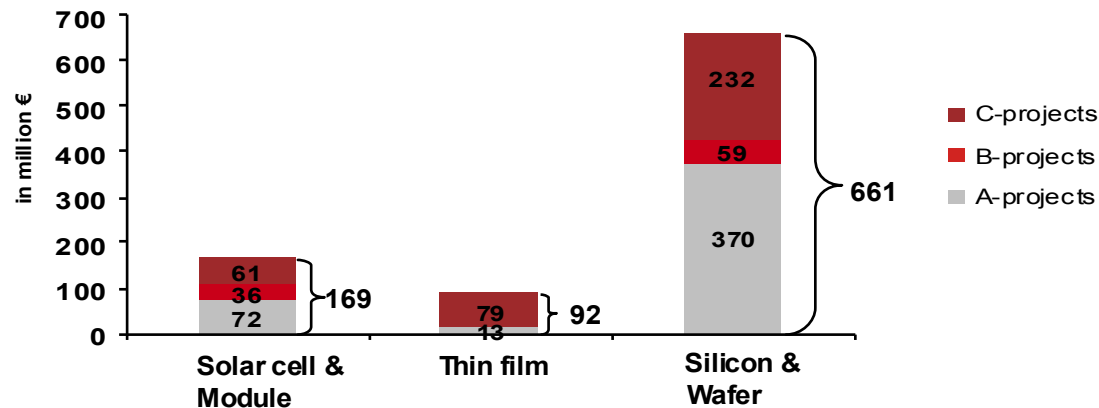


**A-projects:** Orders under transaction

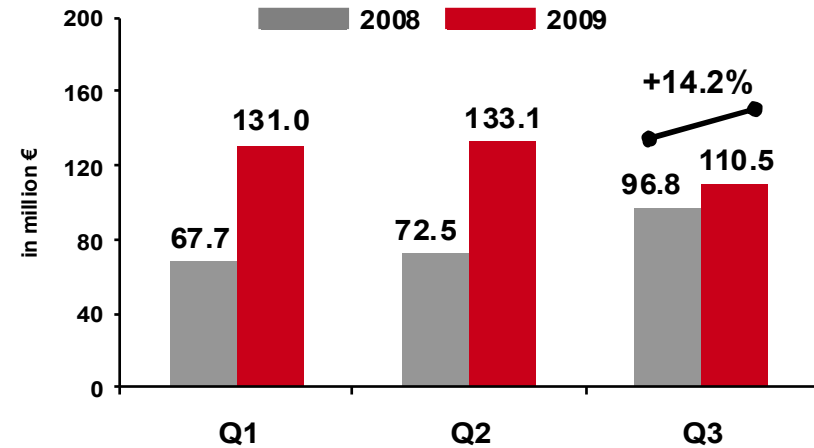
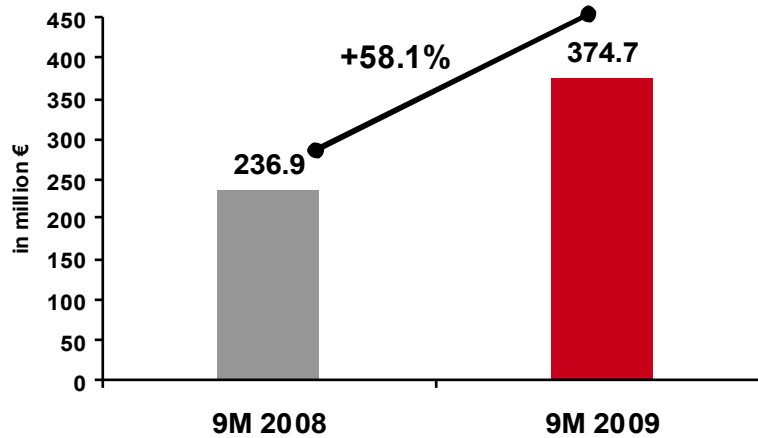
**B-projects:** Secured by prepayments / LC's

**C-projects:** Firm orders

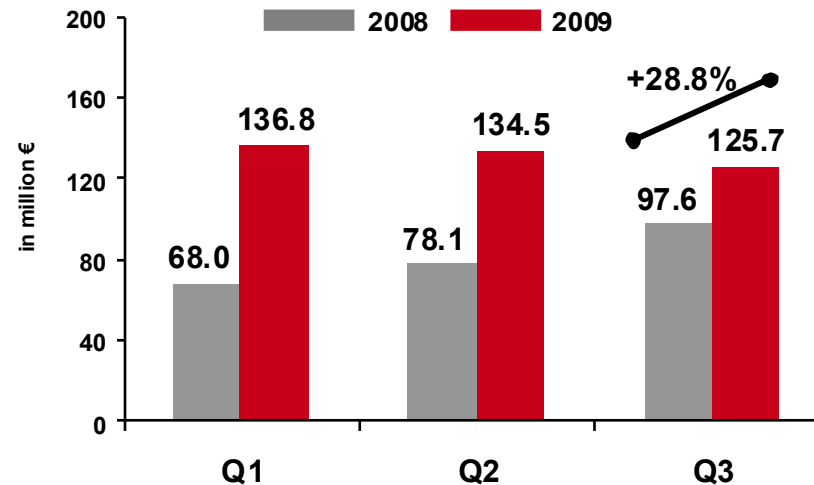
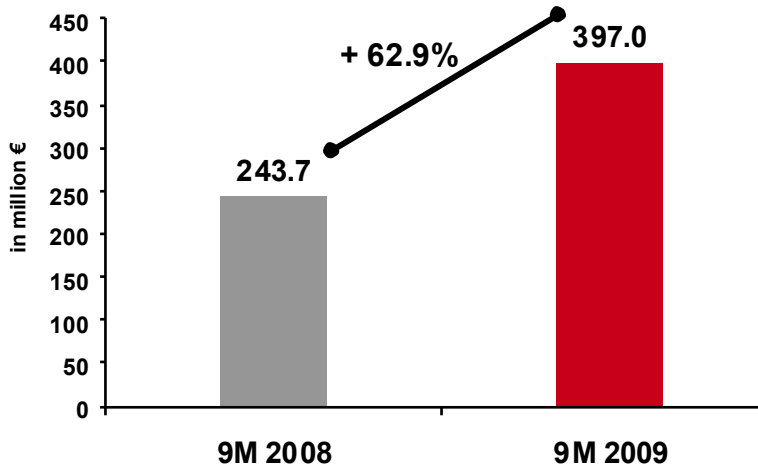
## Split by Project Classification Per Segment



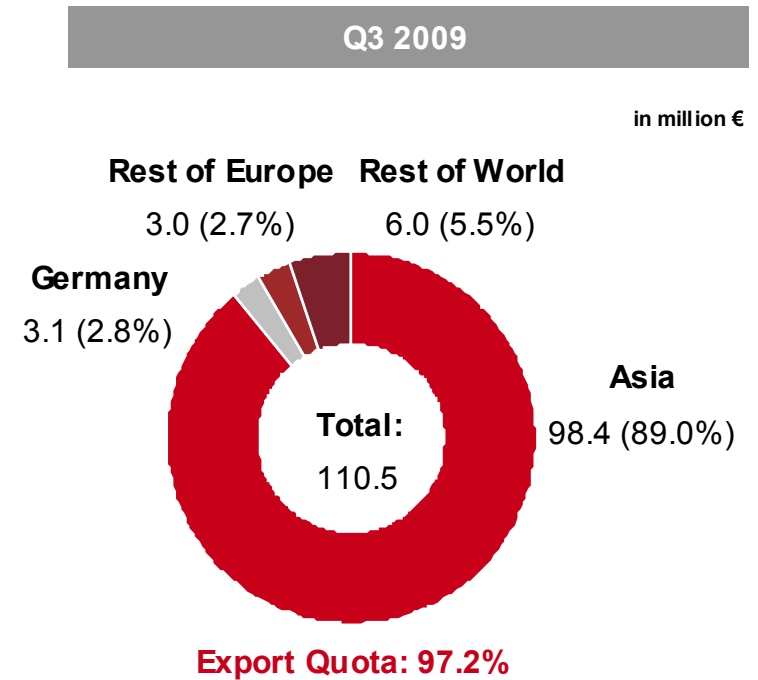
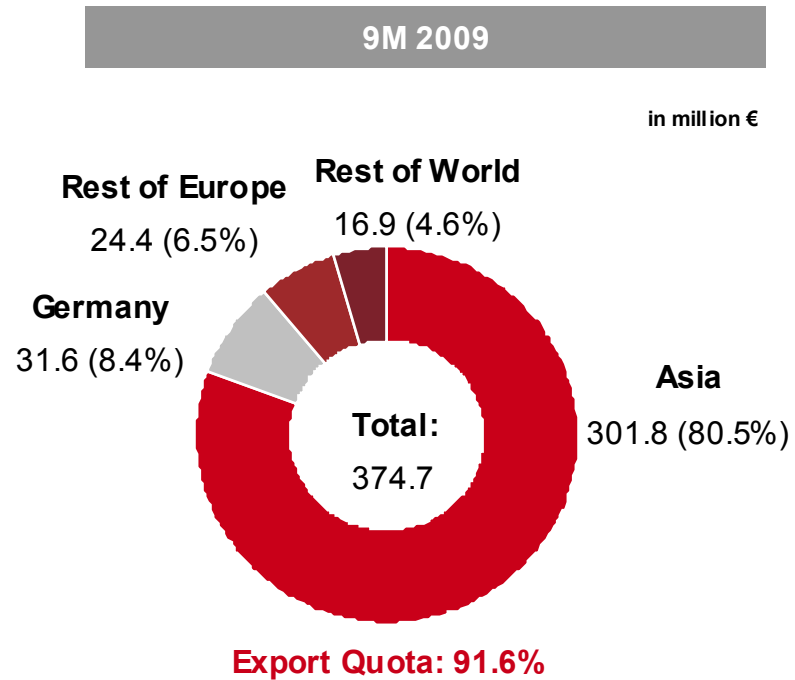
## Sales



## Total Output



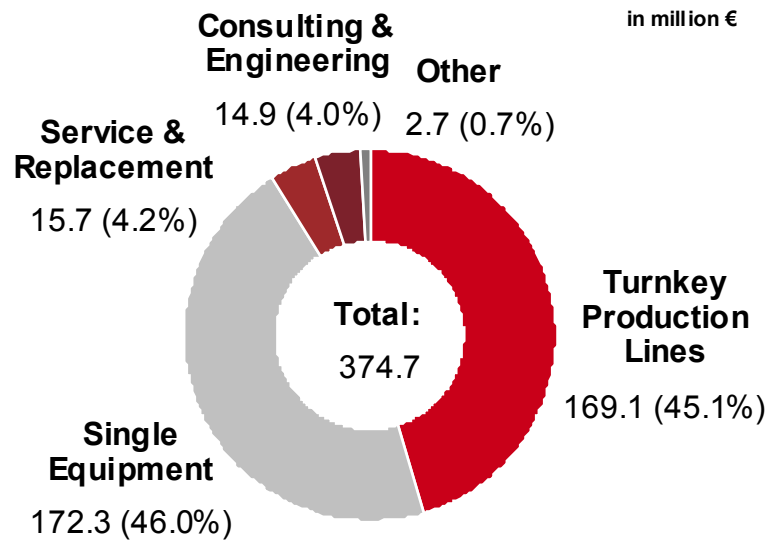
# Sales Breakdown by Region



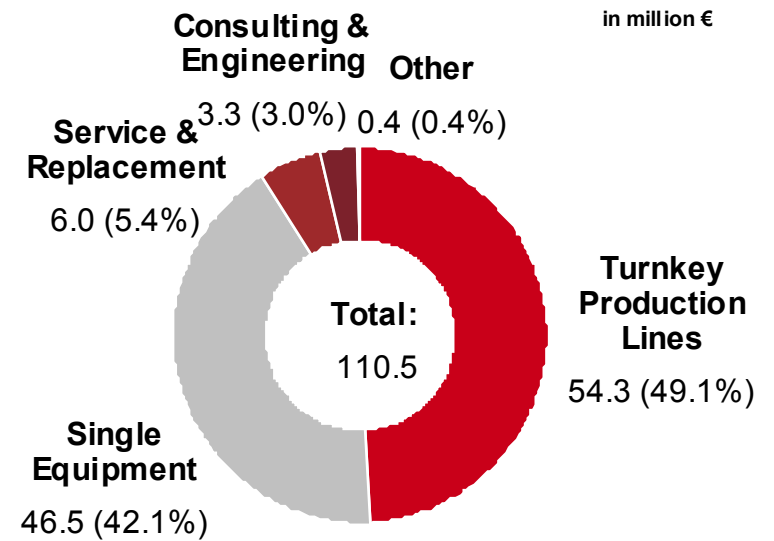
Trend: Increasing share of Asian market

# Sales Breakdown by Product

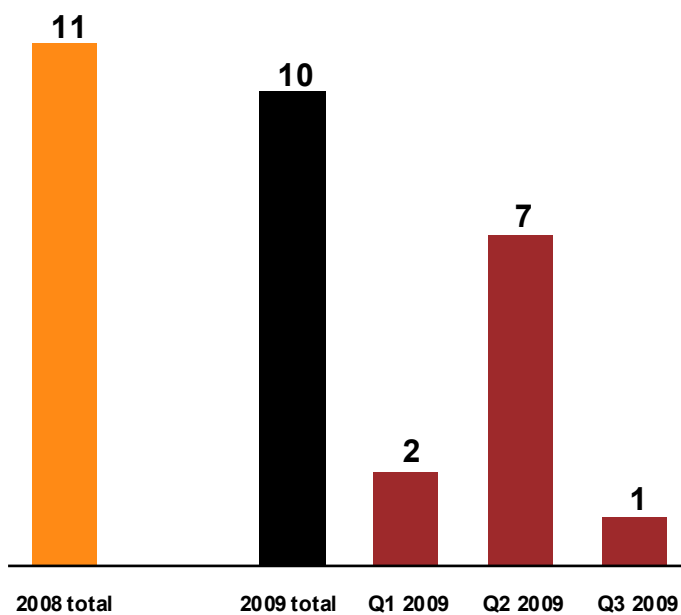
**9M 2009**



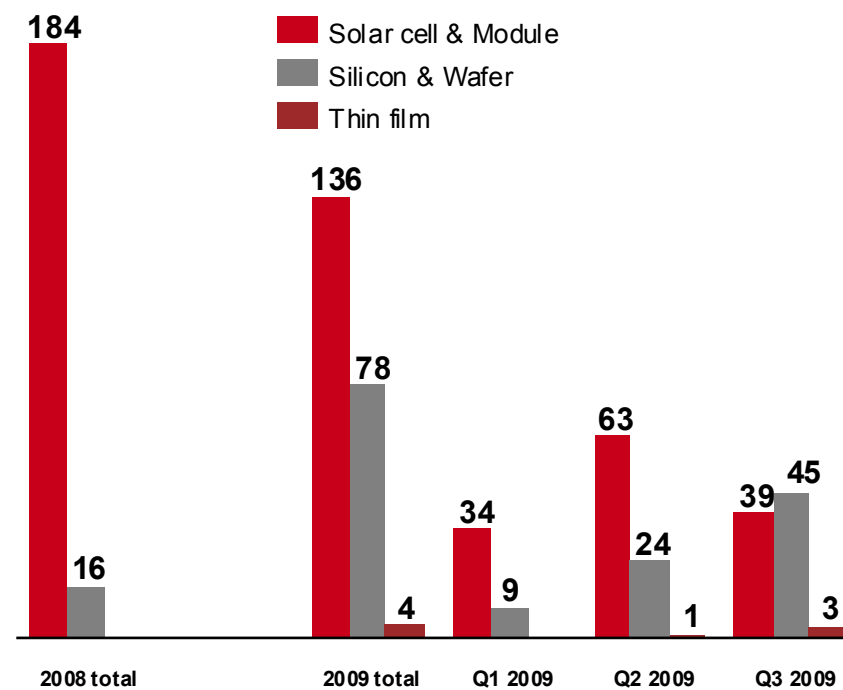
**Q3 2009**



## Deliveries Turnkey Lines

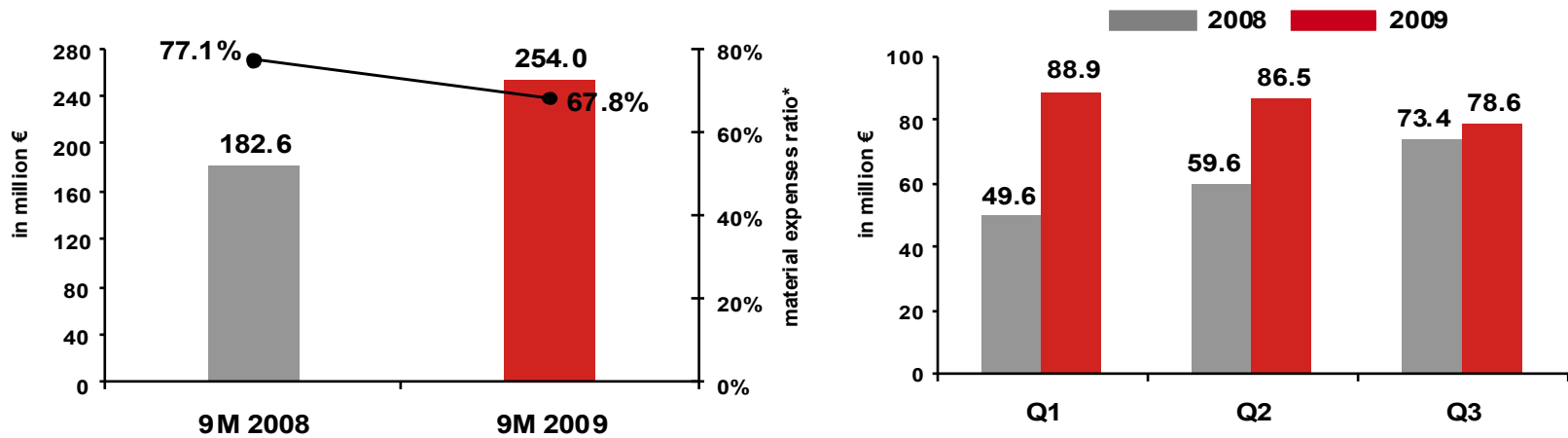


## Deliveries Single Equipment

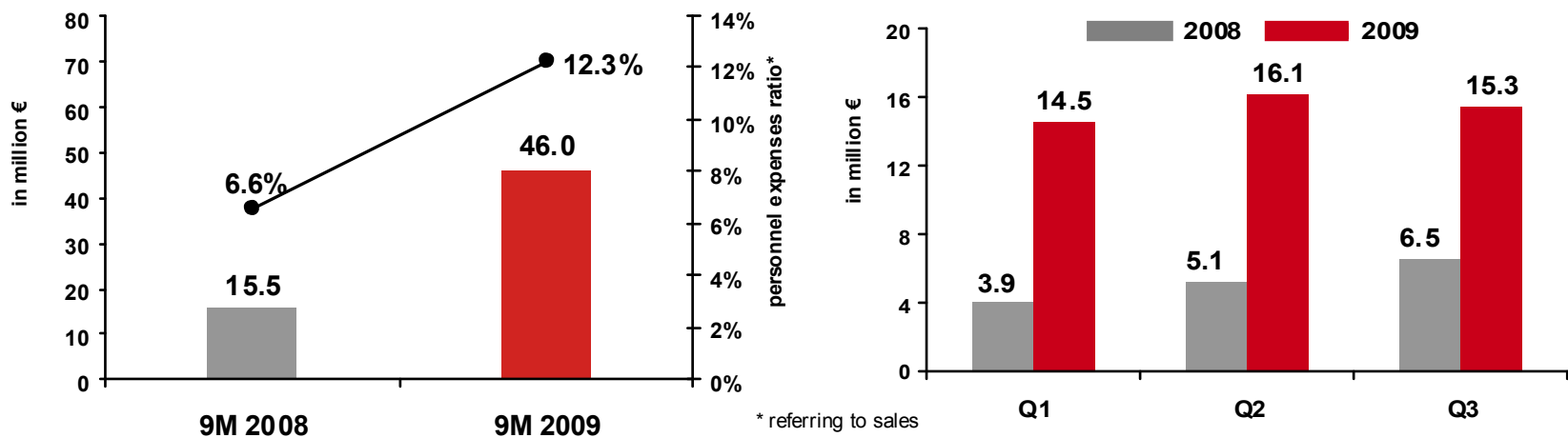


# Material and Personnel Expenses

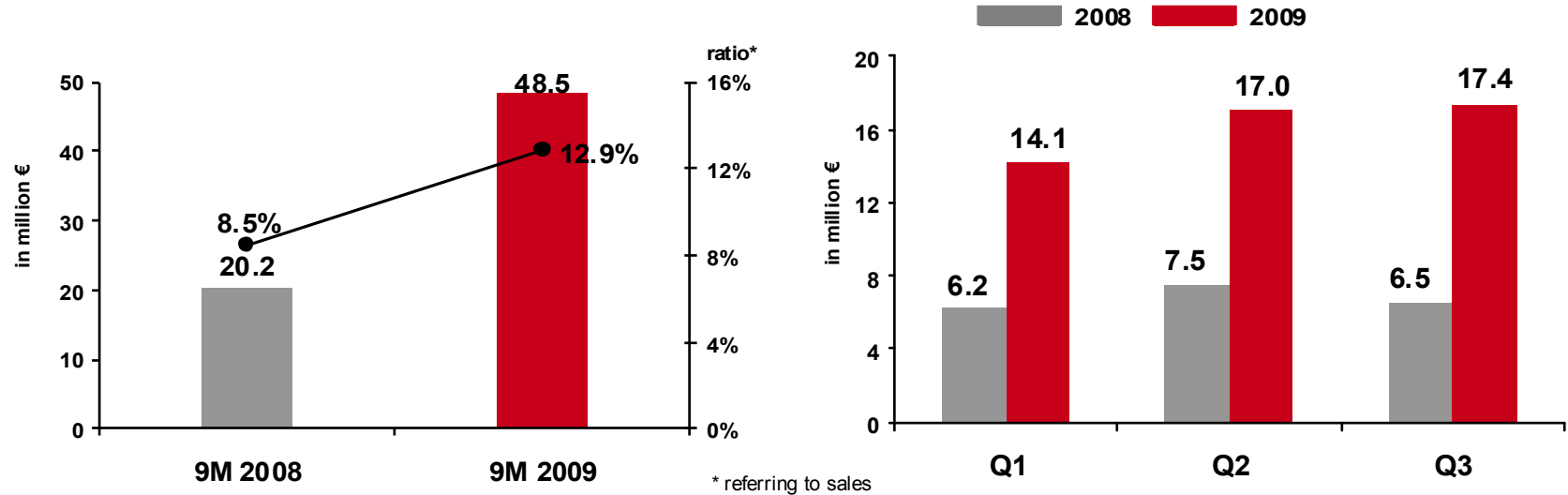
## Material Expenses



## Personnel Expenses



# Other Operating Expenses

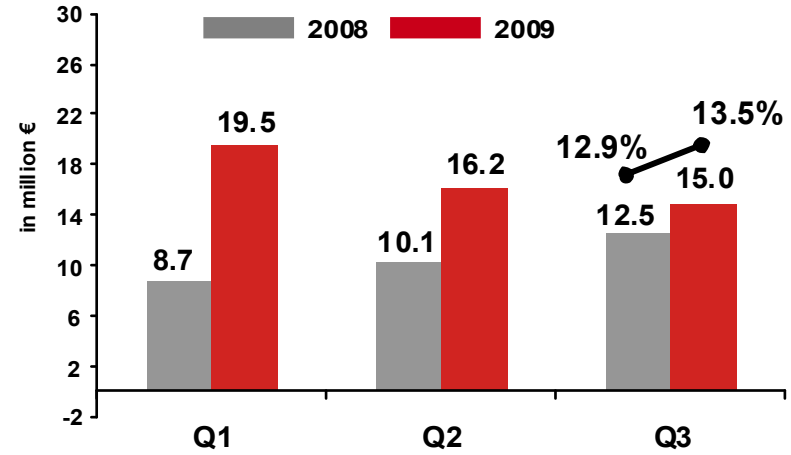
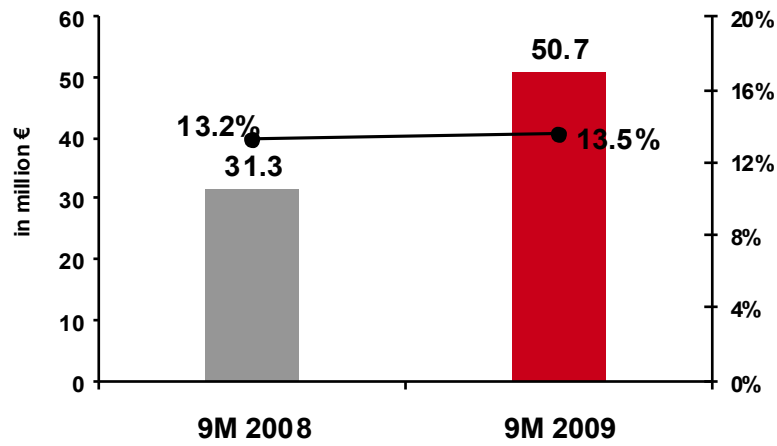


## Breakdown By Cost Category

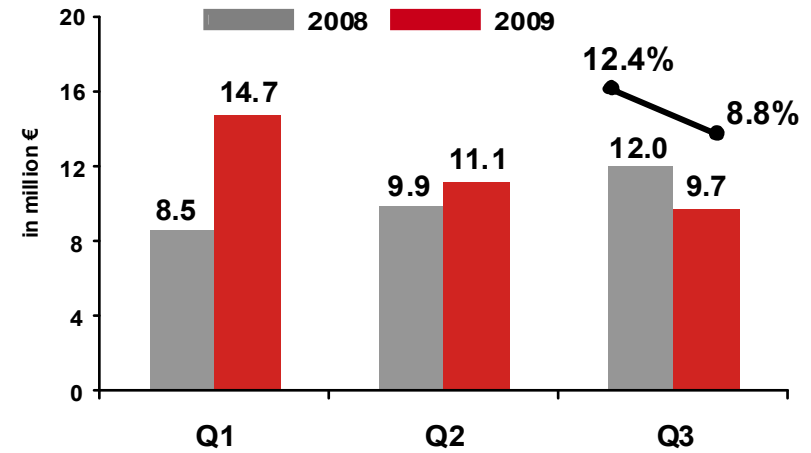
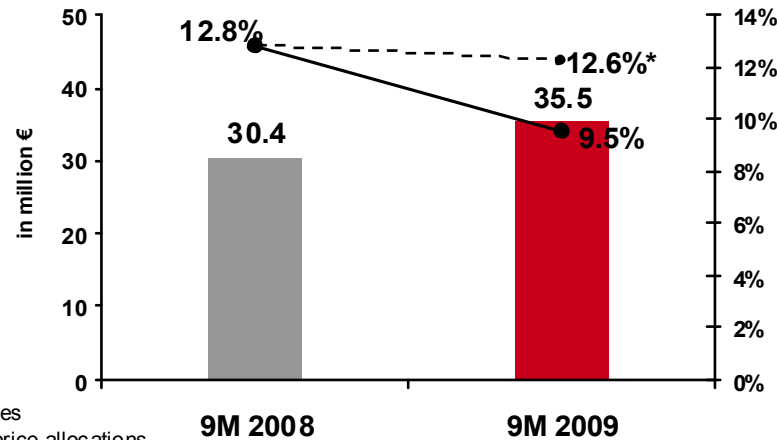


# EBITDA and EBIT

## EBITDA



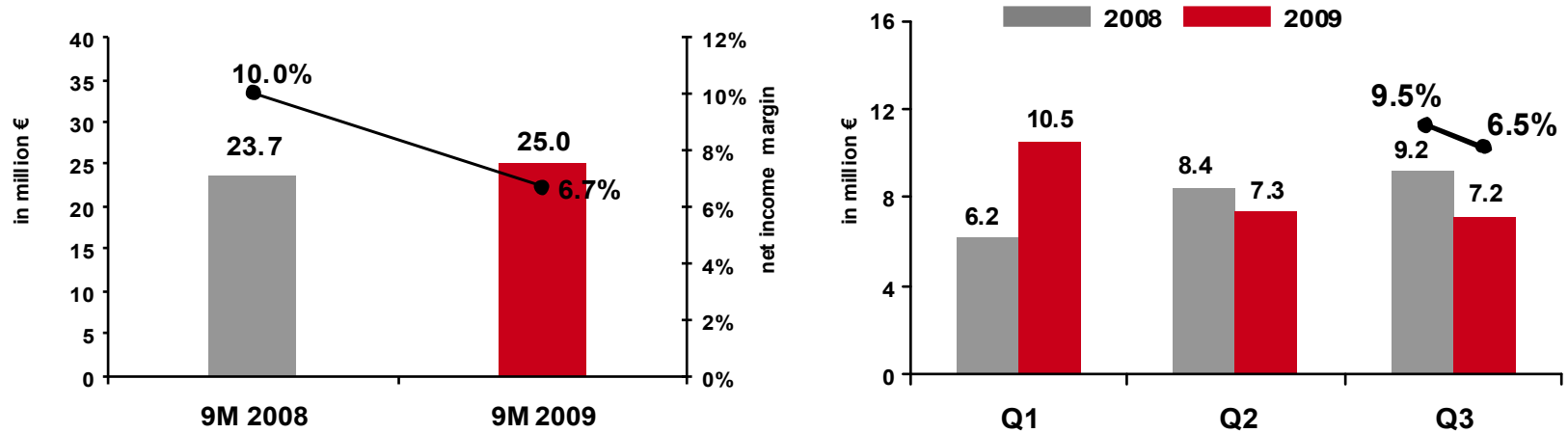
## EBIT



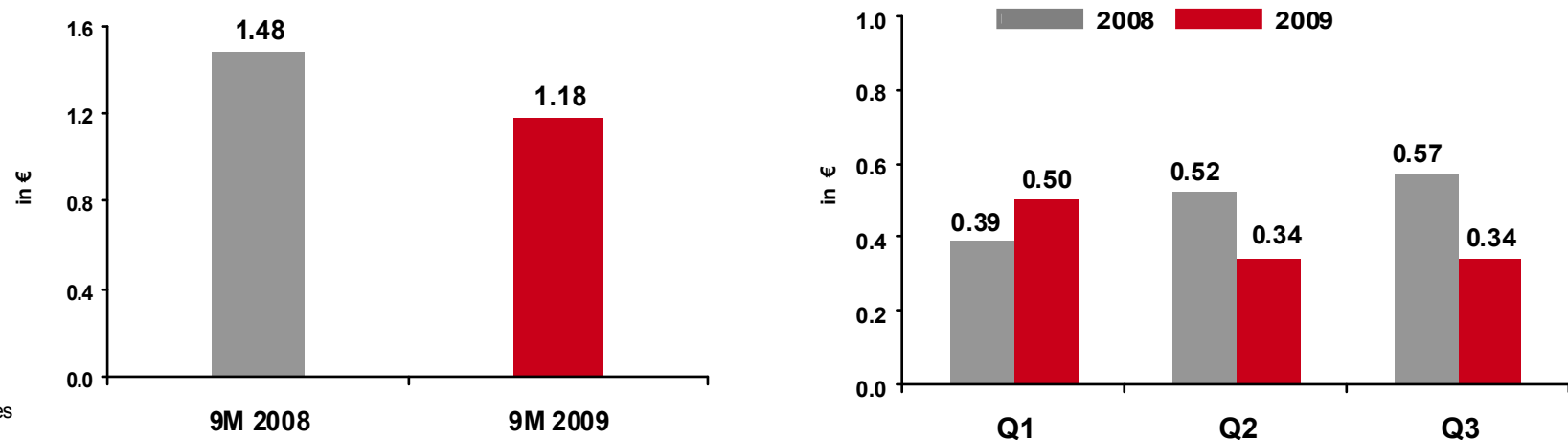
Margins refer to sales  
\* before purchase price allocations

# Consolidated Net Income and Earnings Per Share

## Consolidated Net Income

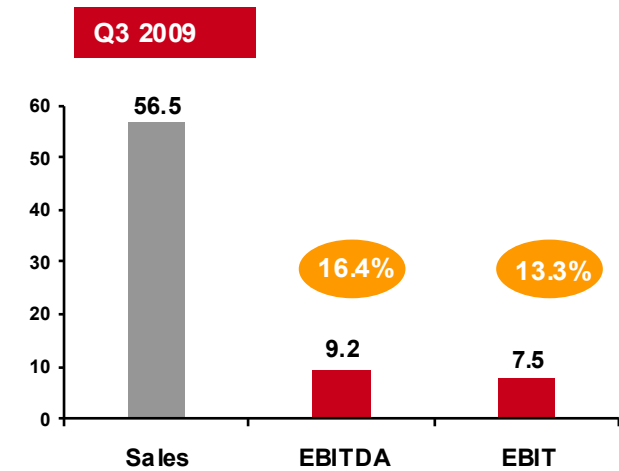
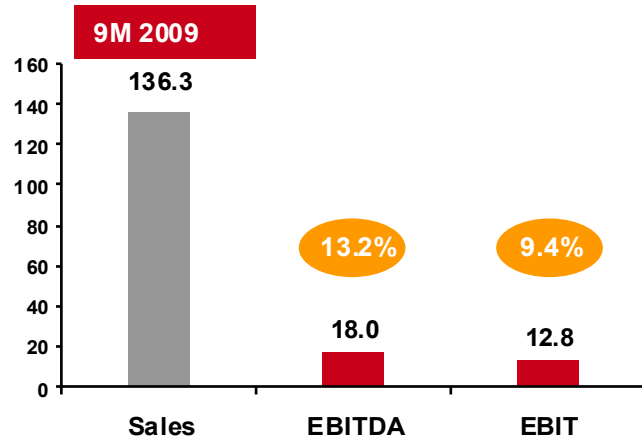


## Earnings Per Share

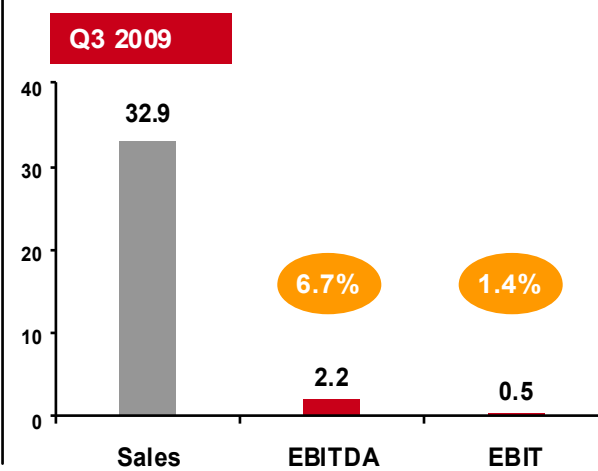
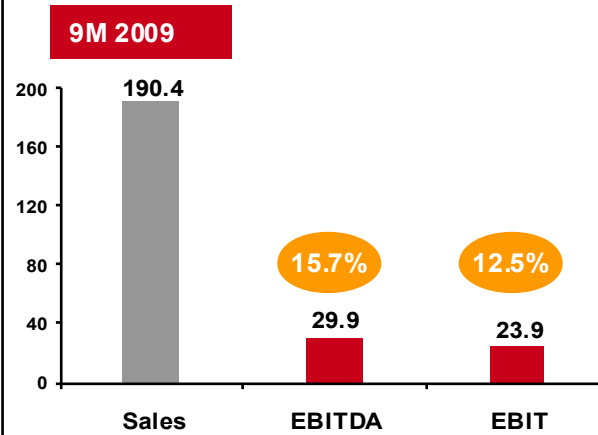


Margin refers to sales

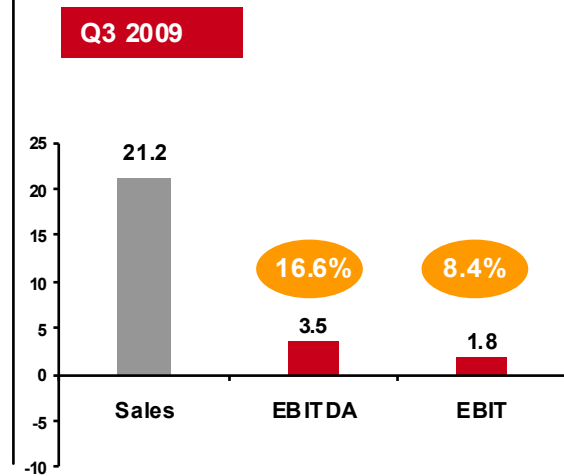
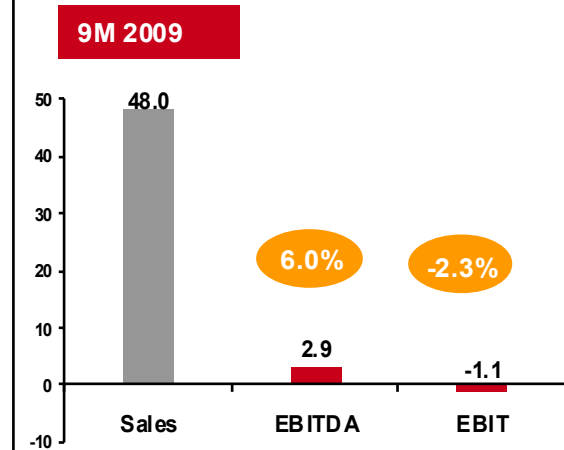
## Silicon & Wafer



## Solar cell & Module\*



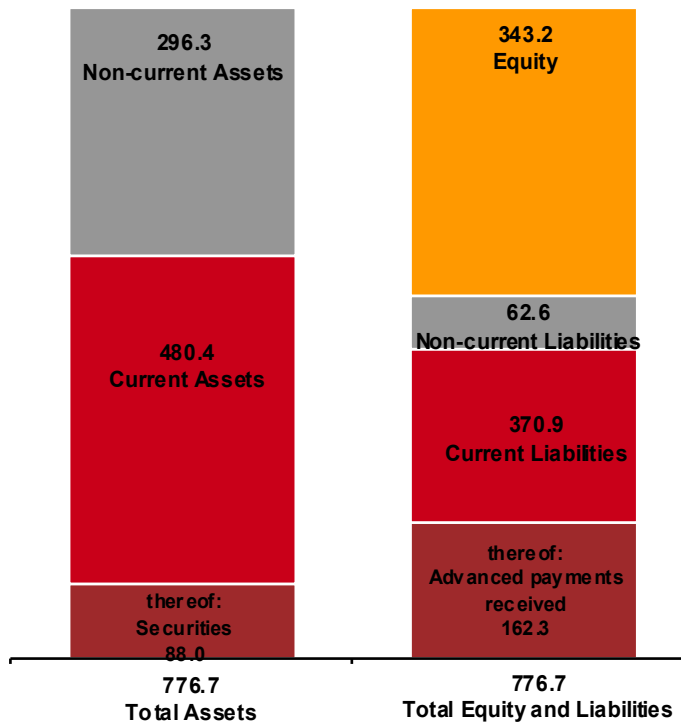
## Thin film



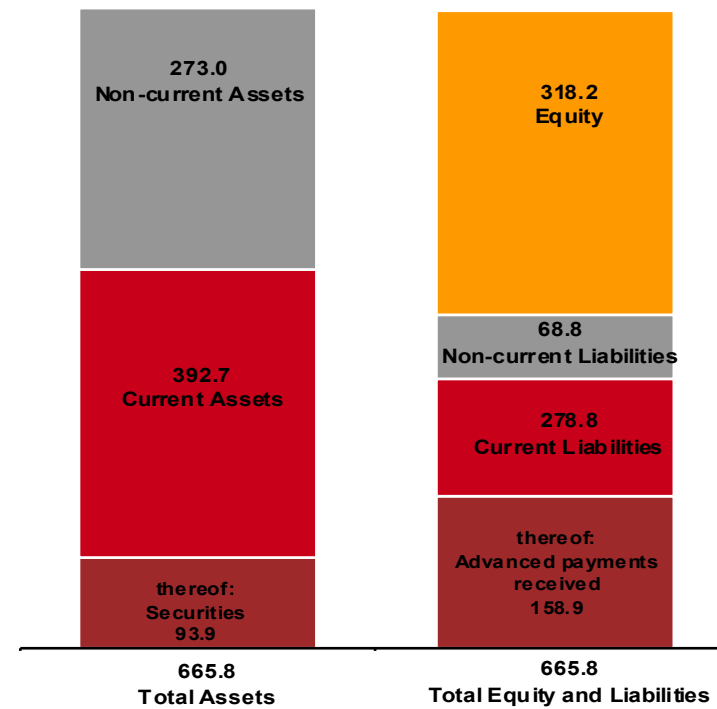
Margin refers to sales  
\* Including other

# Balance Sheet

Balance Sheet as of September 30, 2009

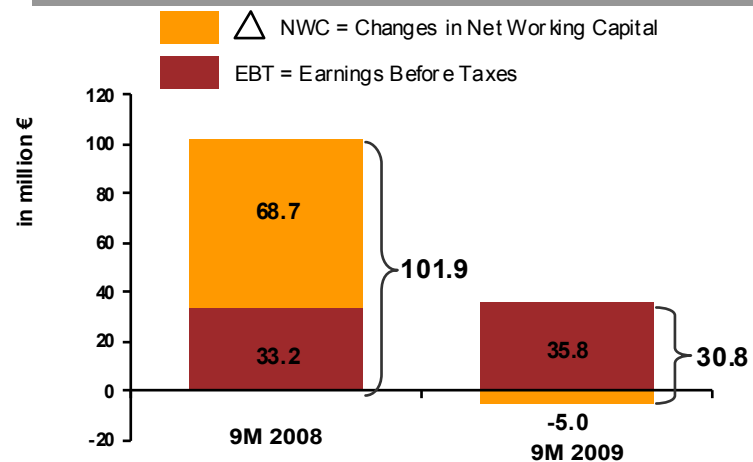


Balance Sheet as of December 31, 2008

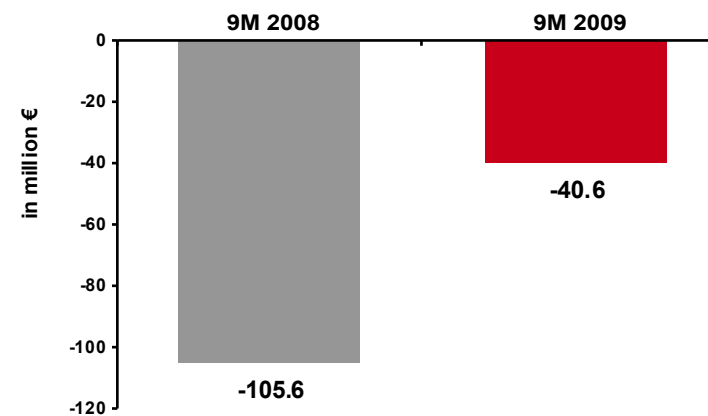


- Equity Ratio: 44.2%
- Liquidity: € 165.2 million

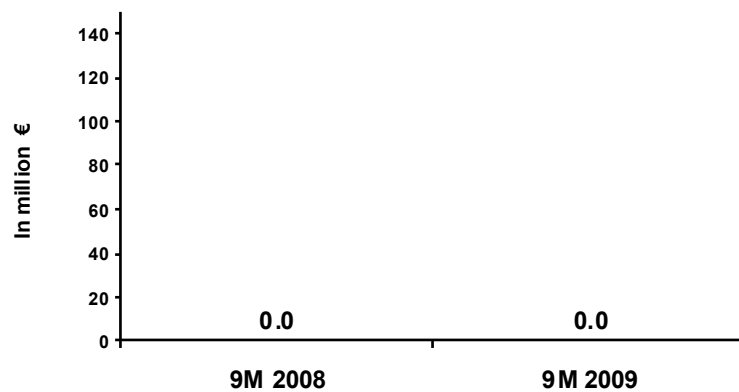
## Cash Flow from Operating Activities



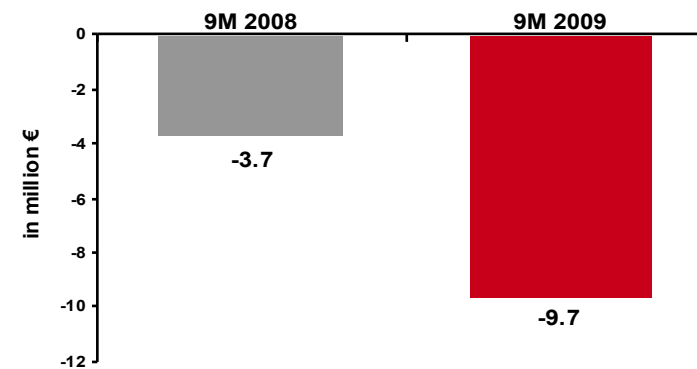
## Cash Flow from Investment Activities



## Cash Flow from Financing Activities



## Total Cash Flow



**1. centrotherm photovoltaics at a Glance**

**2. Highlights**

**3. Financial Results**

**4. Outlook**

**5. Appendix**



## **2009 Outlook - confirmed**

- Double-digit growth
- Sales: EUR 500 - 550 million
- Further increase in EBITDA

## **Objectives 2010**

- Gaining further market shares
- Market launch of new, innovative products
- Strong focus on R&D activities
- Intensifying “Performance Plus”- Program

**1. centrotherm photovoltaics at a Glance**

**2. Highlights**

**3. Financial Results**

**4. Outlook**

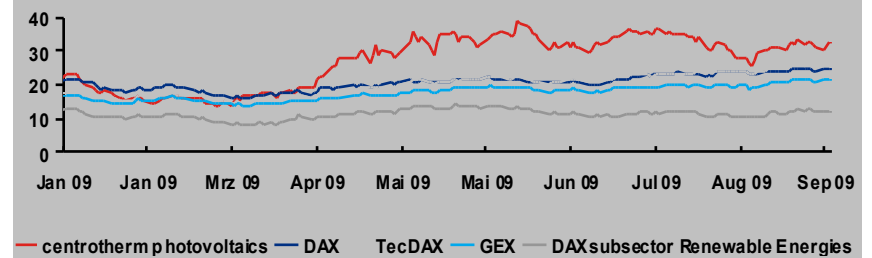
**5. Appendix**

# Key Share Data And Shareholder Structure

## Key Share Data

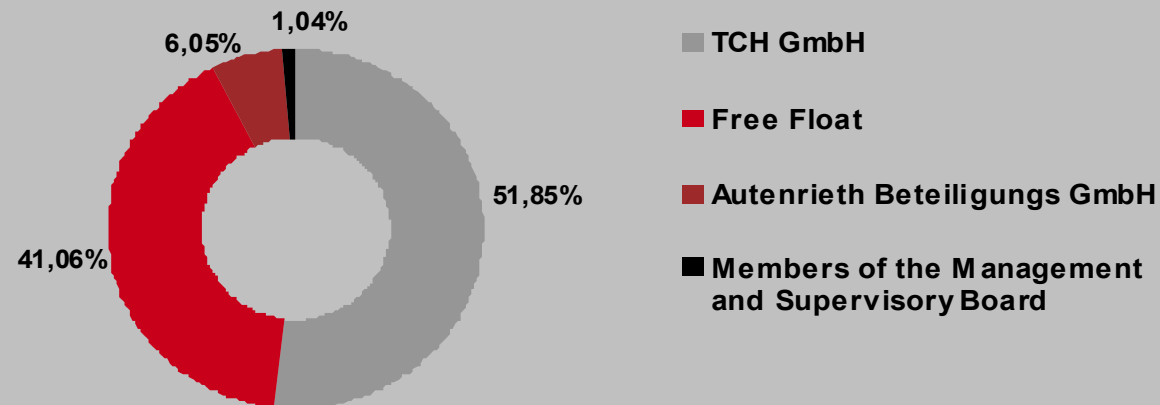
|                  |              |
|------------------|--------------|
| WKN              | A0JMMN       |
| ISIN             | DE000A0JMMN2 |
| Number of shares | 21,162,382   |
| Share capital    | 21,162,382   |

## Share Performance



Indices rebased to centrotherm photovoltaics share price

## Shareholder Structure





## centrotherm - continuing innovations

**Contact:** Saskia Schultz-Ebert  
Investor Relations  
centrotherm photovoltaics AG  
Johannes-Schmid-Strasse 8  
89143 Blaubeuren  
Tel +49 (0)7344 9188-890  
Fax +49 (0)7344 9189-389