

Striving for mass-production of thin-film solar modules:
The growth strategy of the technology company S U L F U R C E L L

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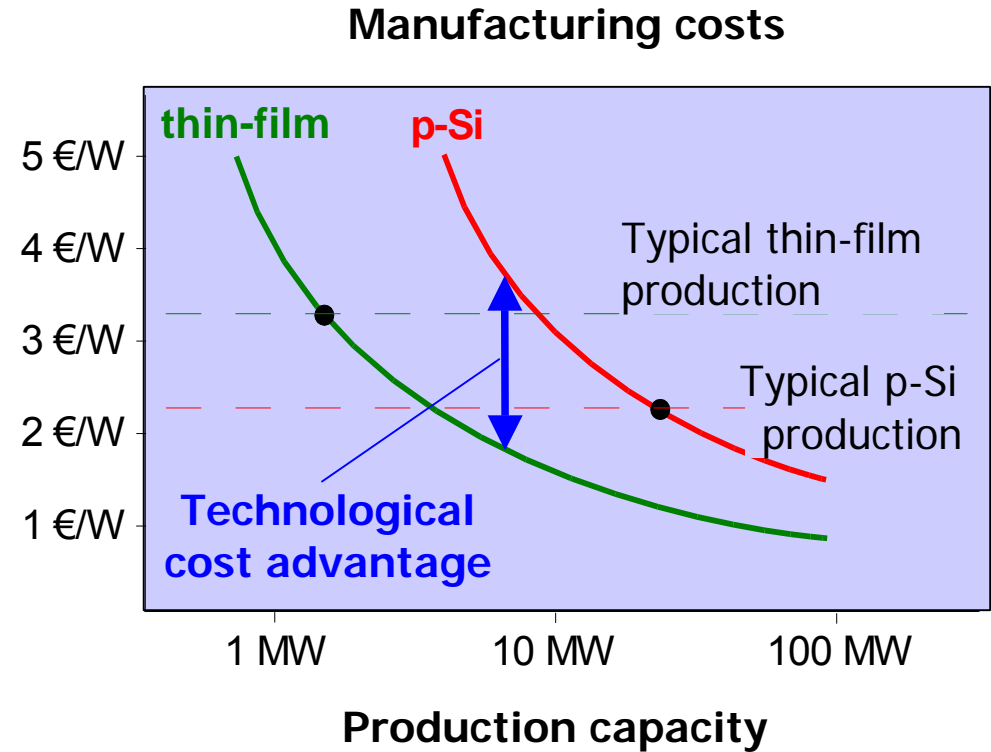


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Fast and above-average growth of thin-film production crucial for price competitiveness and future business prospects

Thin-film technology

- Thin films on glass instead of wafers as light-absorbing material
- 99 % less material need
- No use of high-purity Silicon
- But:
 - Market share < 10 %
 - No large-scale productions

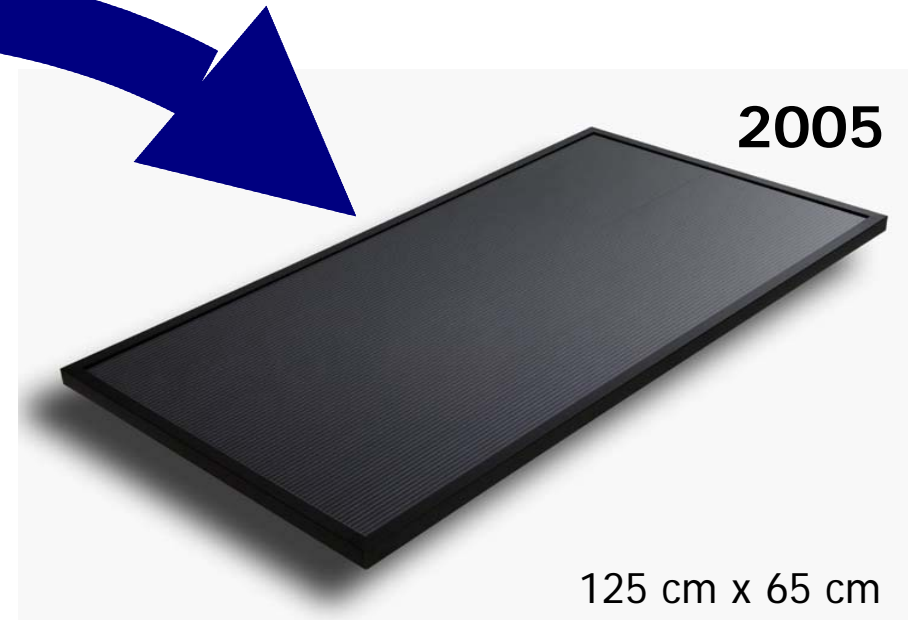
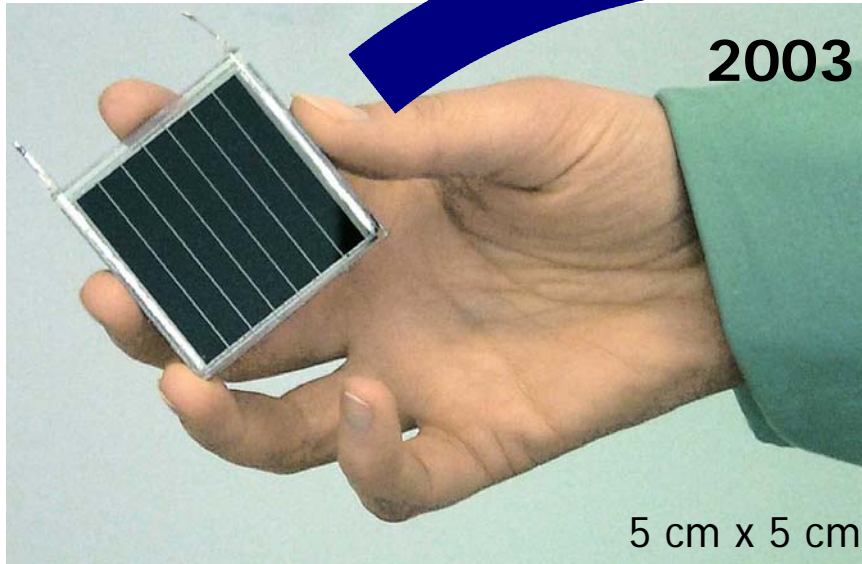


Sulfurcell technological strategy

- Inherent production stability due to uncomplex preparation methods
 - Simple cell structure
 - Sequential preparation of the compound CIS
- Productivity
 - Rapid processes, Sulfur instead of Selenium
- Large-area deposition methods
 - Sputtering techniques for all thickness-defining process steps
- Cost-saving materials
 - Sodalime glass as substrate material



Scale-up achieved in 2005



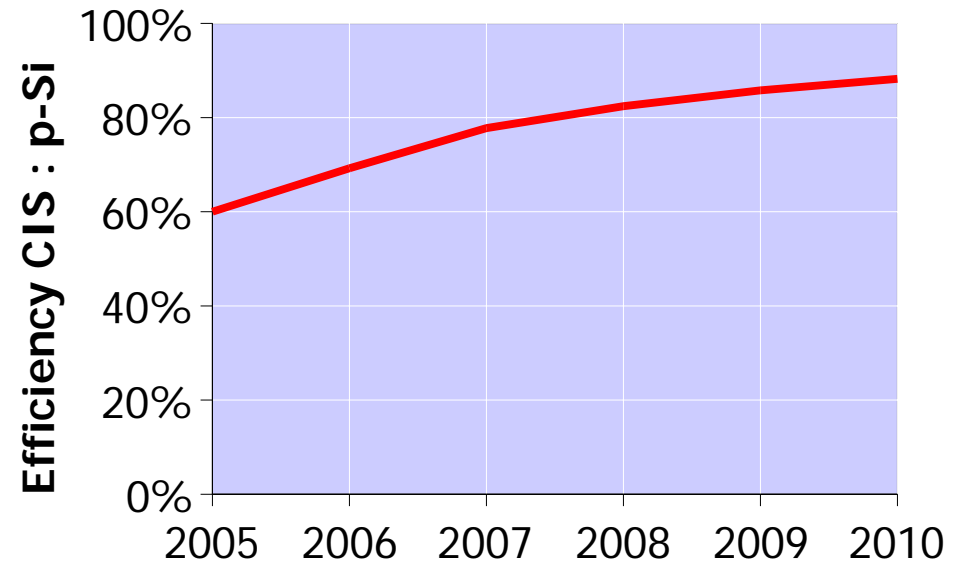
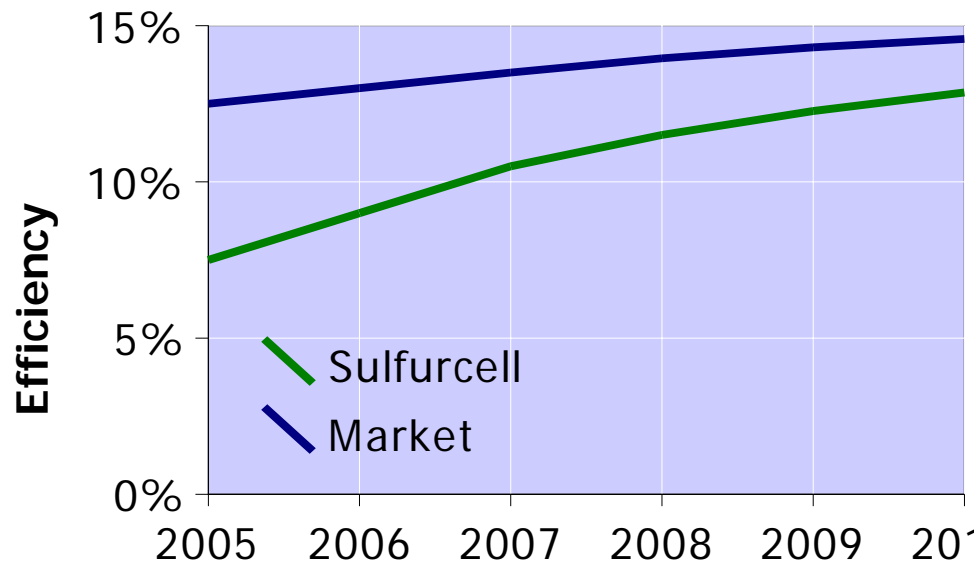
Hahn-Meitner-Institute (HMI)

- Maximum cell efficiency: 13 %
- Maximum module efficiency: 10 %

Sulfurcell

- VC-financed Start-up
- Investors: M+W Zander, Vattenfall, local VCs et al
- Exclusive partner of HMI
- Actual module efficiency: 7 % or 55 Wp, plan 2006: 8 % or 65 Wp

Preference for a highly productive technology, above-average efficiency increase due to early development stage

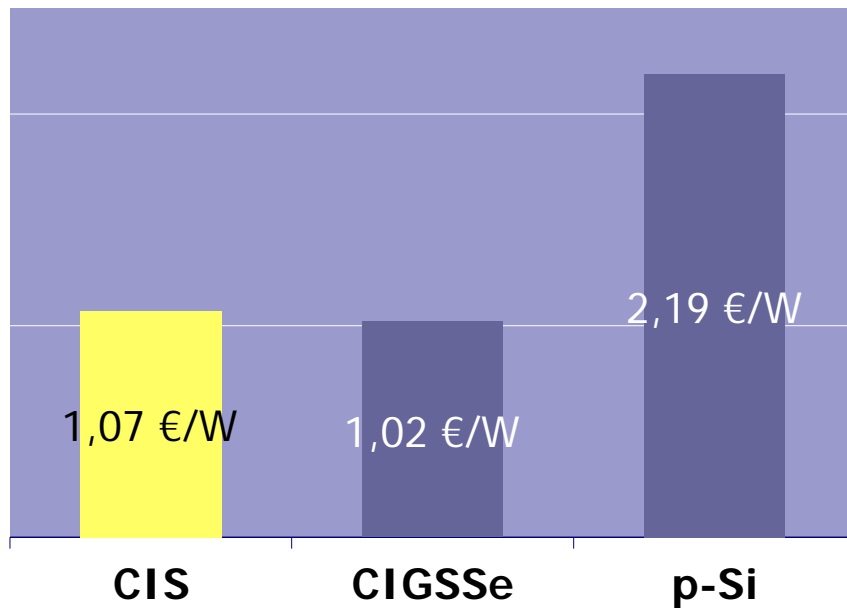


Unique combination of low material costs and competitive capital expenditure

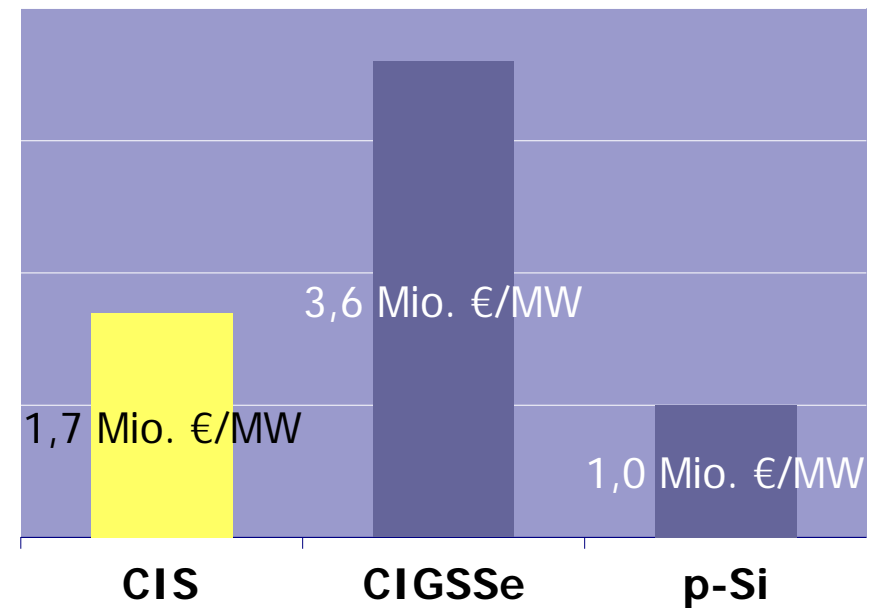
Key-number comparison of cell & module-productions based on:

- Sulfurcell technology (CIS)
- Copper-Indium/Gallium-Selenide technology (CIGSSe)
- polycrystalline Silicon (p-Si)

Material costs



Investment



Sale and application of CIS solar modules

- High level of clients interest
- LOIs with wholesalers in preparation
- Market entry: January 2006
- First PV systems installed in summer 2005
- Production volume 2006: 2 MW



Display at 20th European Solar Energy Conference and Exhibition, Barcelona 2005



First PV system with Sulfurcell modules

Concept for building the „CIS fab“

Technology

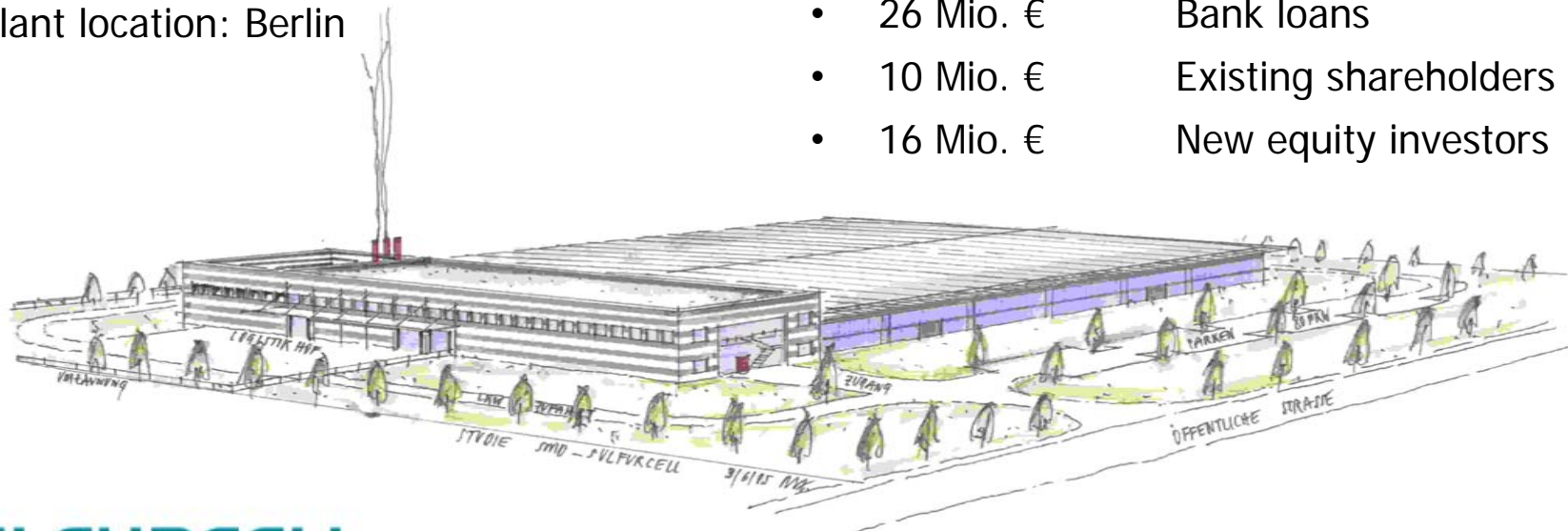
- Set up a 50 MW production in 2 steps:
2006: 30 MW → 2008: 50 MW
- Low technical risks due to
 - Use of proven technology from pilot production line
 - No scale-up of the substrate size
- Planned start: in II/06
- Plant location: Berlin

Required capital 2006: 66 Mio. €

- 52 Mio. € Equipment
- 4 Mio. € Pre-operating expenses
- 10 Mio. € Working capital & reserves
- (facility leased)

Financing

- 14 Mio. € Public funds
- 26 Mio. € Bank loans
- 10 Mio. € Existing shareholders
- 16 Mio. € New equity investors



Conclusion

- Sulfurcell has succeeded in developing an innovative thin-film technology featuring a unique combination of low-cost materials and an attractive level of investment.
- The company is striving for above-average growth in order to match the capacity of the conventional manufacturers by 2010.
- Applying the same technologies as in the pilot-production, Sulfurcell plans to build a 50 MW-plant in 2006.
- Excellent opportunity for a new equity investor.