Cost reduction strategies in solar cell production

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For additional information regarding risks, investors are referred to ErSol’s IPO prospectus and the annual report 2005.

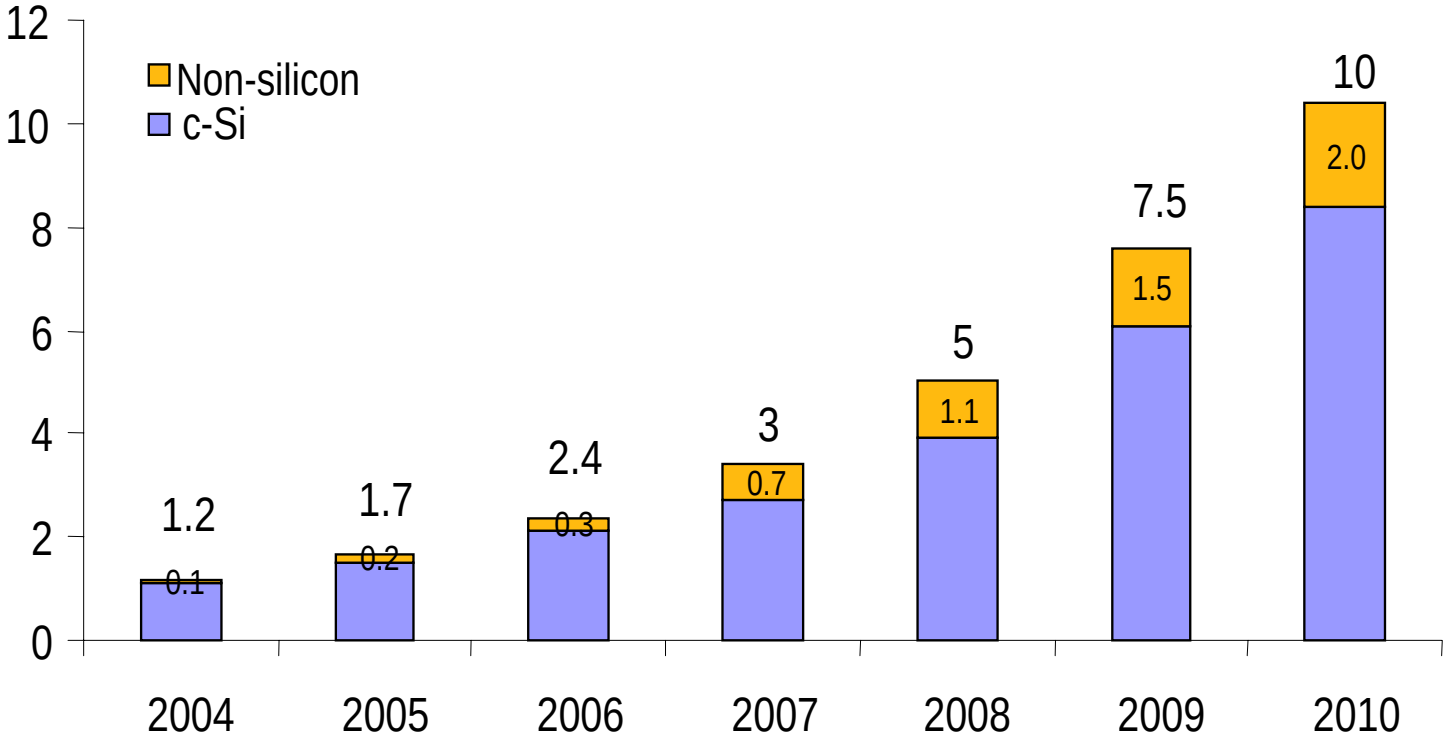
PV market development and characteristics

Development of PV market 2004-2010 (optimistic growth scenario)

ROUGH ESTIMATE

Total solar sector cell/module production

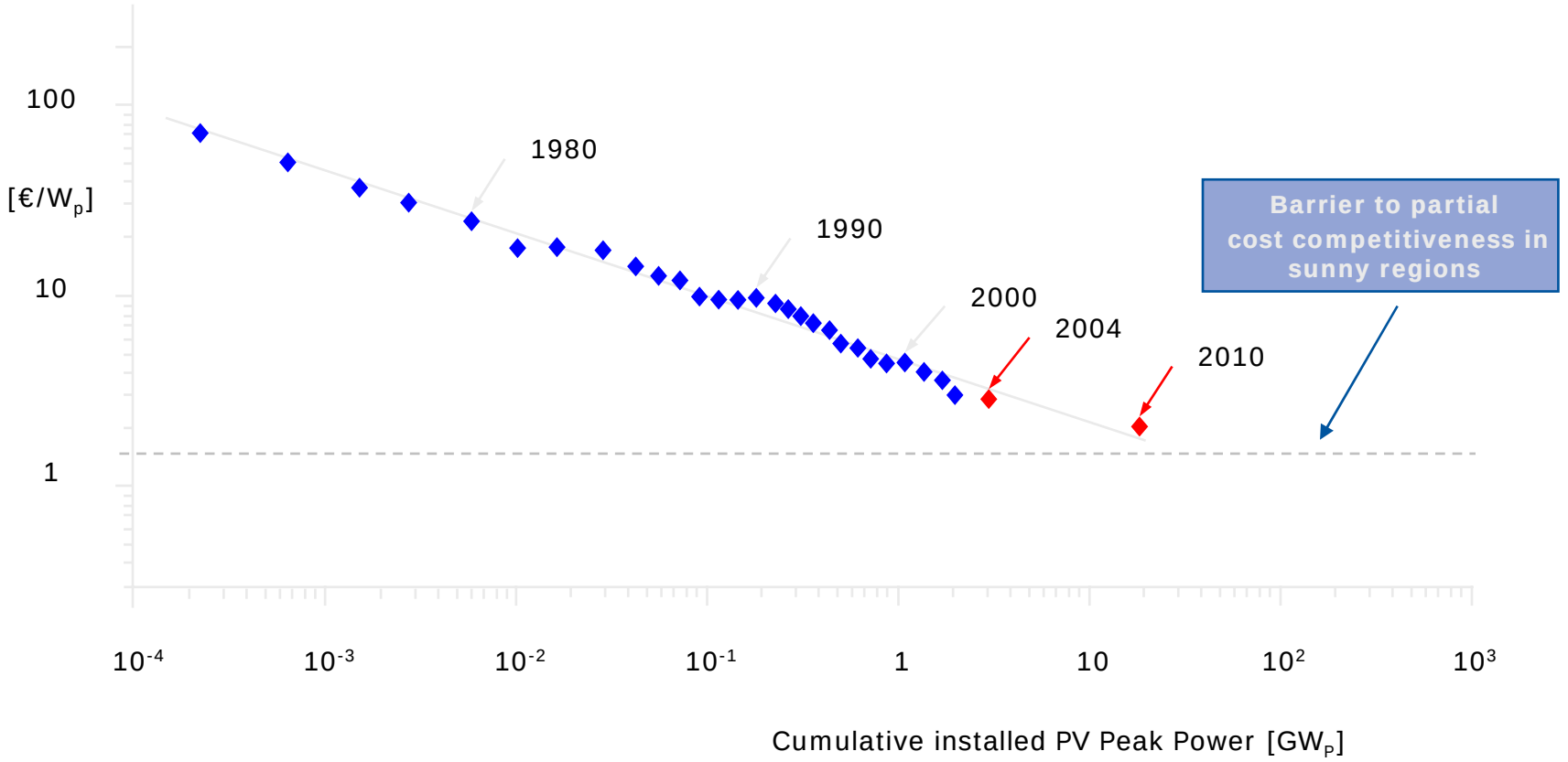
Gigawatts



Total 10 GW by 2010

Source: M. Rogol, 3rd Photon Silicon Conference, 3 April 2006 (Munich)

Price experience curve of photovoltaic modules



Sources: Fraunhofer Institut Solare Energiesysteme (ISE), EPIA, ErSol

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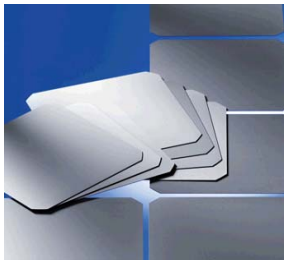
Conclusions from PV market characteristics

1. **“Grow or die”**
2. **Reduce production cost faster than price degression curve**

Positioning and strategy of ErSol Solar Energy AG

Value chain of crystalline silicon photovoltaics

Sun and sand… → → → → **… electricity**



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New company structure

ErSol Solar Energy AG

Production and distribution of solar cells (Erfurt, Germany)

100%	100%	35%	100%	100%
SRS Silicon Recycling Services, Inc.	**ASi Industries GmbH**	**Shanghai Electric Solar Energy Co. Ltd.**	**aimex-solar GmbH**	**ErSol New Technologies GmbH**
Camarillo/ California,USA	Arnstadt, Germany	Shanghai, P.R. China	Erfurt, Germany	Erfurt, Germany
Recycling of silicon	Mono-crystalline ingots and wafers (prod. & distribution)	Solar module production	Marketing of solar modules	Development of new photovoltaic technologies

Products of ErSol: Ingots and wafers

Mono-crystalline silicon ingots / wafers

Product

Key characteristics

- Ingots with a diameter of up to 230mm
- 45 MWp wafer production capacity in 2006
- Large wafer size 156x156mm

Production expertise

- More than 30 years of pulling experience ensures high productivity
- Optimised production process results in high silicon conversion rate
- Ongoing reduction of cost structure

Outstanding quality

- Each wafer is tested in 5,000 measuring points to ensure highest level of quality
- Strict documentation of testing process

Products of ErSol: PV cells

	Blue Power	Black Power
Product		
Key characteristics	■ Multi-crystalline solar cell ■ Ca. 50% of ErSol sales in 2006 ■ High efficiencies of up to 16%	■ Mono-crystalline solar cell ■ Ca. 50% of ErSol sales in 2006 ■ High efficiencies of up to 17%
Production expertise	■ 60 MWp call production capacity in 2006 ■ Extensive experience in cell manufacturing results in high productivity ■ Constant introduction of larger and thinner cell sizes	
Outstanding quality	■ ErSol's cells offer high degrees of efficiency, especially in dim and diffuse light ■ Low breakage rate and high cell stability	

ErSol enters into thin-film module production

- ErSol plans to develop production capacity of 40 MWp p.a., medium-term annual capacity target of >100 MWp as a second growth option
- Approx. 80 m€ investment (40 m€ in 2006 and 2007 each)
- Less than 1% of silicon consumption compared with conventional wafer technology
- Efficiency of approx. 6% on glass substrate
- Project developed within ENT – ErSol New Technologies
- Thin-film module production to be built in Erfurt, Thuringia
- Approx. 100 new permanent jobs

Characteristics of ErSol's company strategy

1. **"Integrated company" covering the most important segments of the value chain (Silicon, Wafers, Solar cells)**

2. **"Two-product strategy": High-end monocrystalline silicon and low-cost thin-film silicon products**

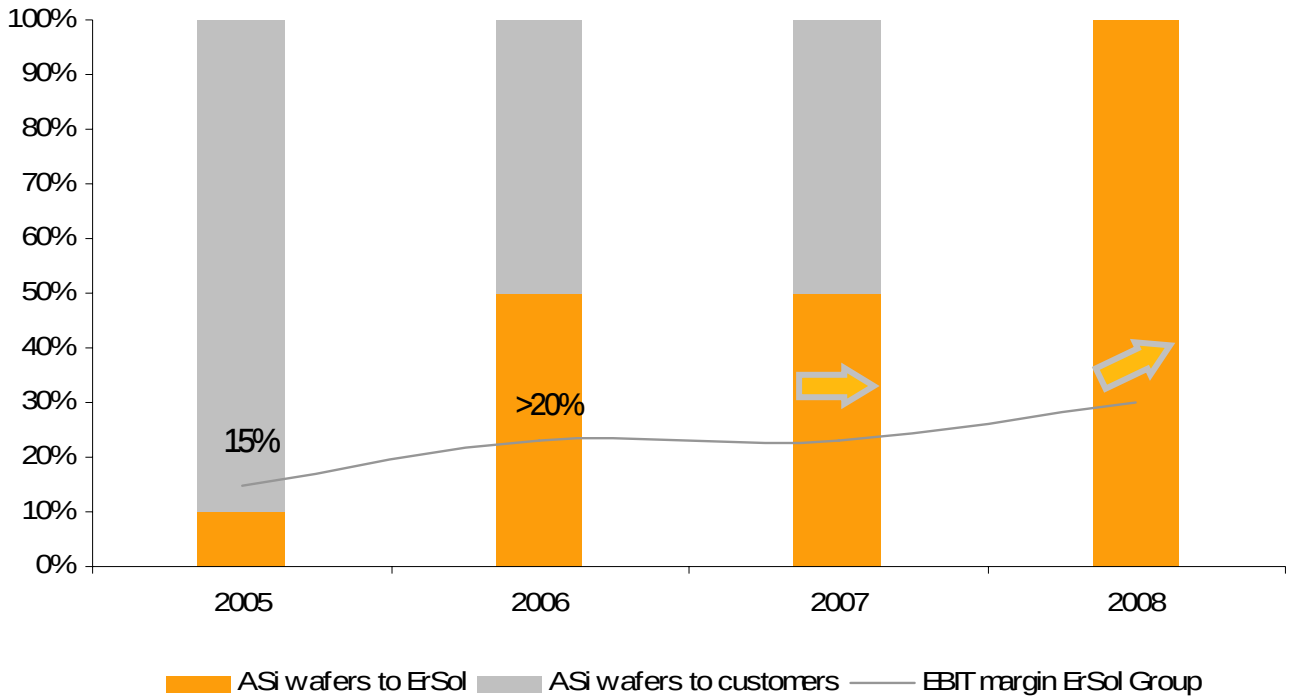
=> Ensuring higher than proportional growth with faster than market cost degression

Elements of growth strategy

- Increased integration of ASi
- Increased silicon procurement
- Advancements of technology
- Entry into low-silicon-consumption technologies

Increased integration of ASi

Integration of the wafer business into the ErSol Group



Full margin addition effect from 2008 onwards

More silicon secured through SRS acquisition in February 2006

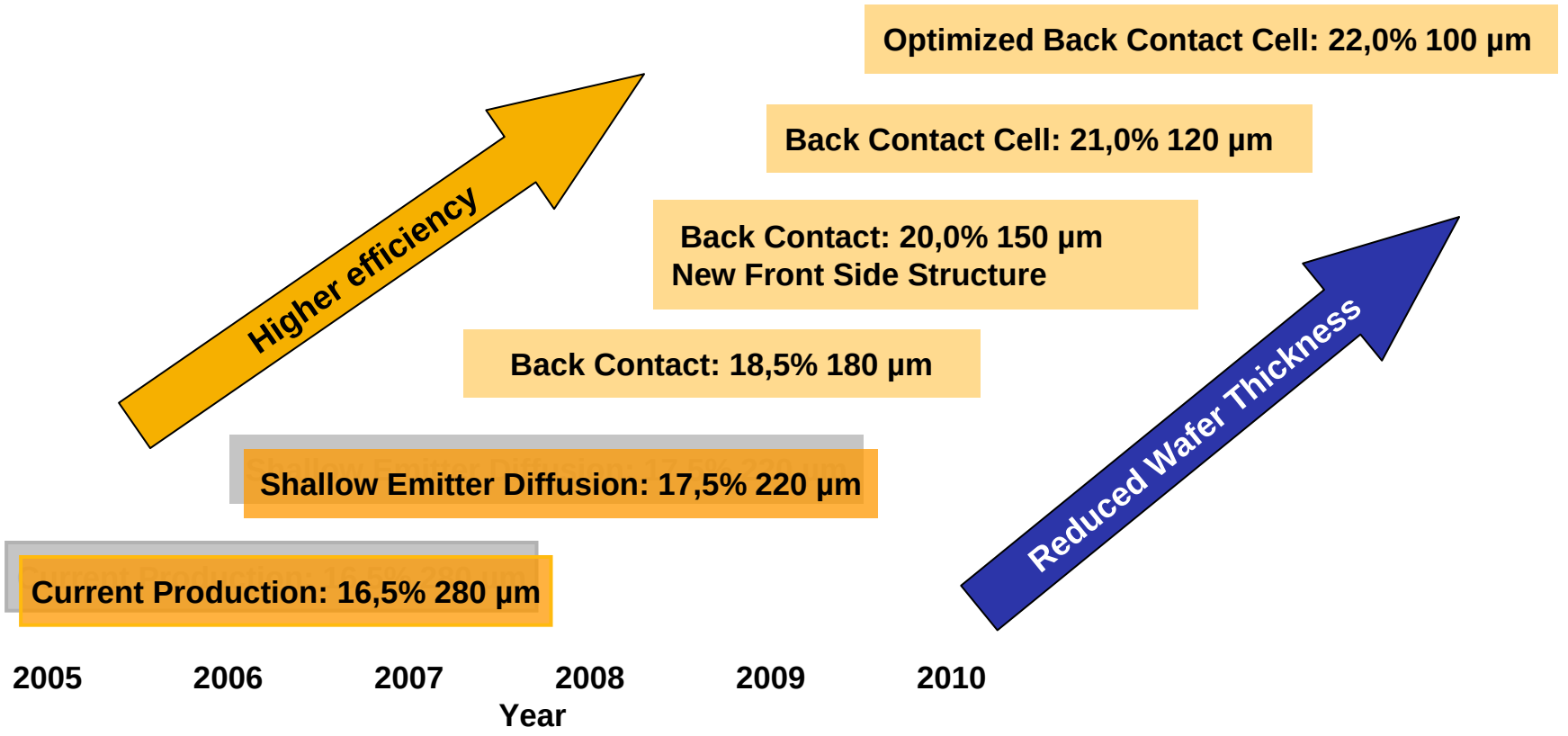
- Important addition to the upstream sector of the value chain
- Additional quantities of approx. 75 tons of scarce solar silicon for production in 2006
- Feedstock material of at least 15 MWp
- Positive impact on margins due to higher utilisation of raw material
- Price of approx. 19 million euros paid from equity

SILICON RECYCLING SERVICES, INC.

Silicon Recycling Services Inc. (SRS)

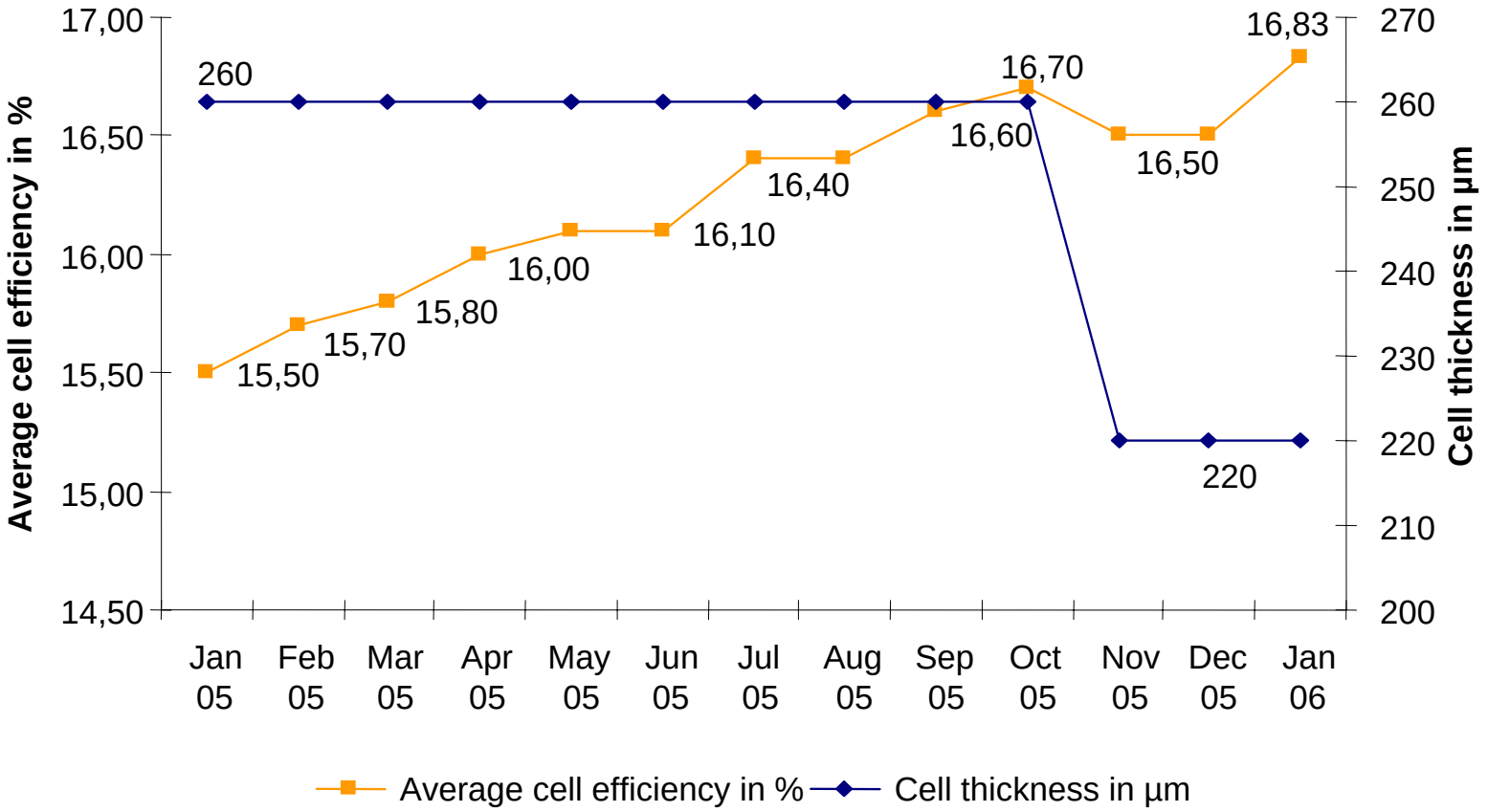
Advancements of technology

Instalment of ~8 million € technology program



Roadmap for mono-crystalline cell technology

Development of mono-crystalline cell technology within 2005



✓ **We're on track !**

Expected breakthrough in cost reduction for high-end mono c-Si

- Integrated production of ingots-wafers-solar cells
- Technological advancements (silicon yield, wafer thickness, cell efficiencies …)
- Economy of scale on the >100 MWp level

  - ✓ Accelerated achievement of cost reduction targets
  - ✓ New dimension of PV production cost
  - ✓ Grid equality in important key markets expected achievable on 2008 time scale
  - ✓ Higher margins at given price levels

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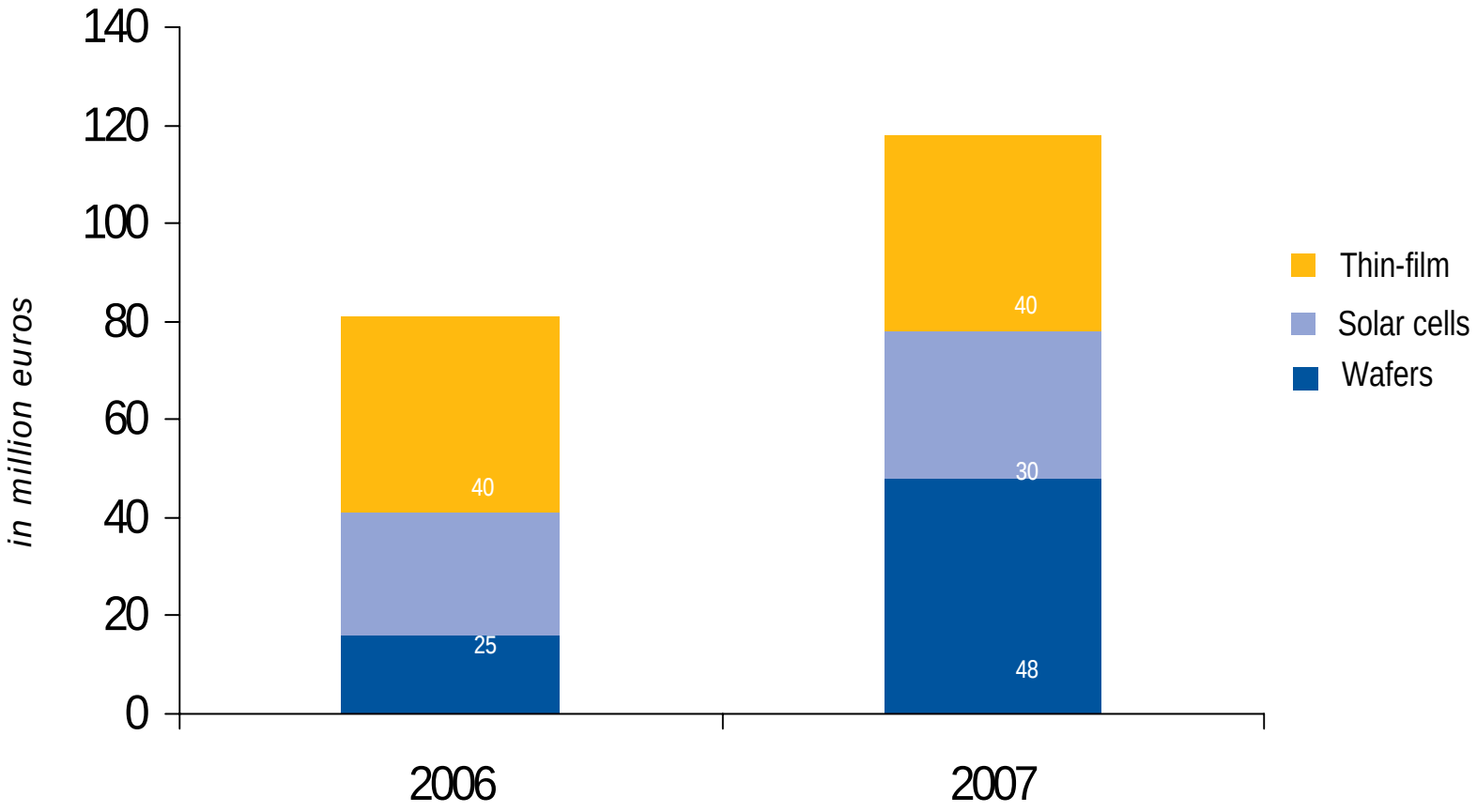
ErSol sets new growth targets for 2008

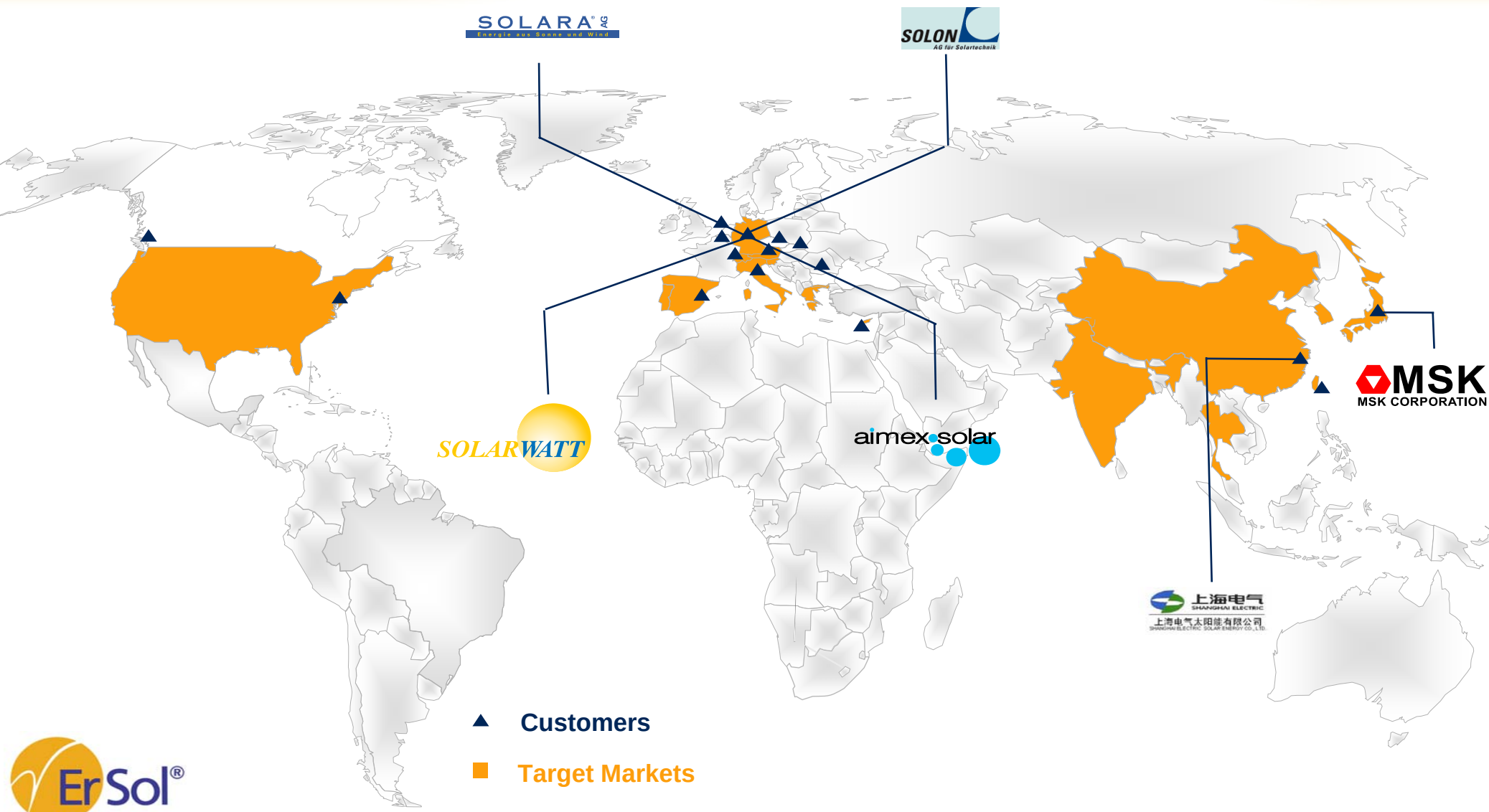
- Wafer production capacity quadrupled to 100 MWp by end 2007
- Crystalline cell production capacity tripled to 180 MWp by end 2007
- Additional growth through new and increasing thin-film cell technology contribution
- 220 MWp total cell capacity by 2008

Expected capital expenditure per business segment



Expected total investment >190 million euros within 2006-2007 …
… and several 100 new jobs in Thuringia !

Customers and Target Markets 2006 – from Erfurt to the world !



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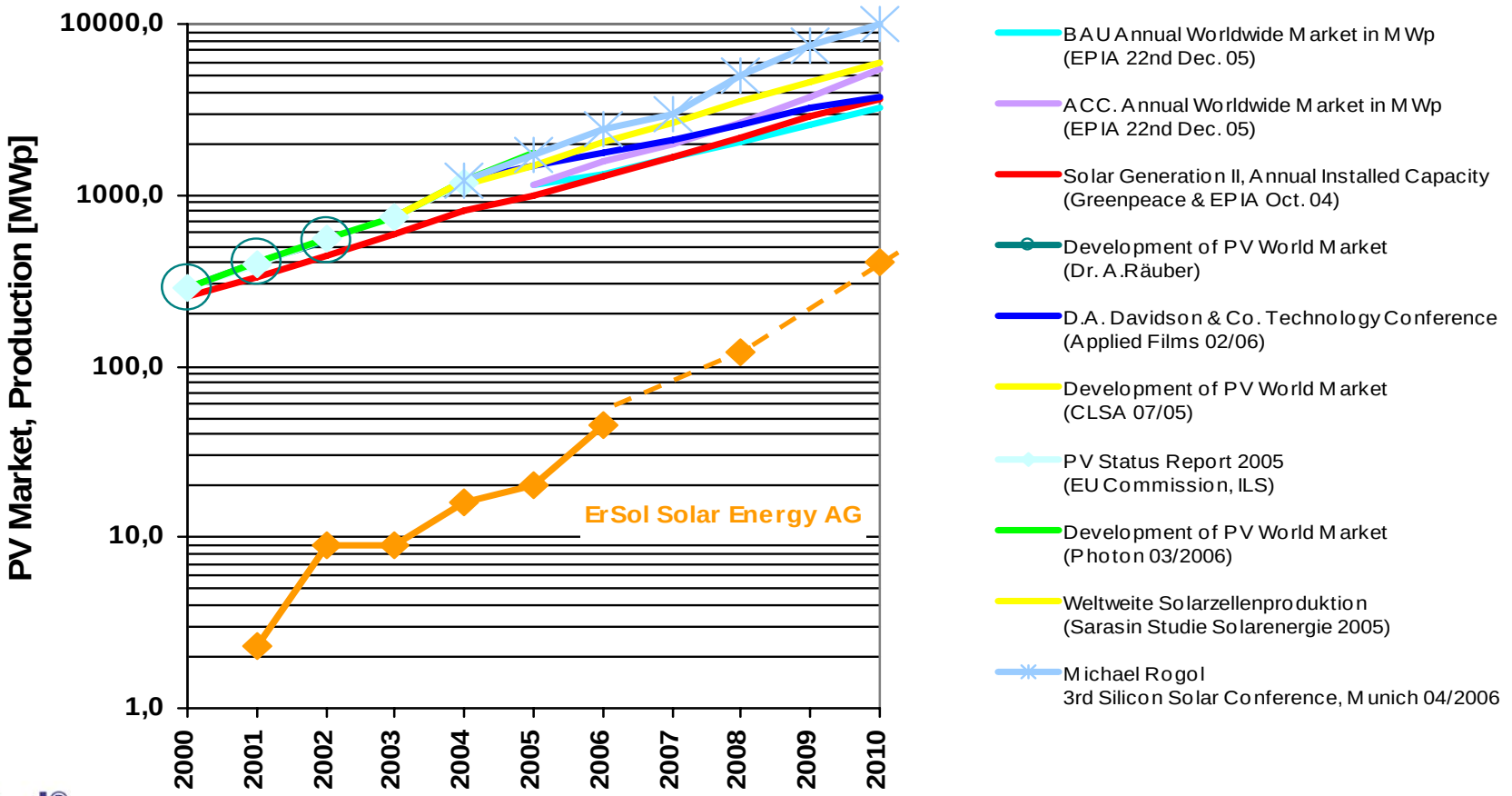
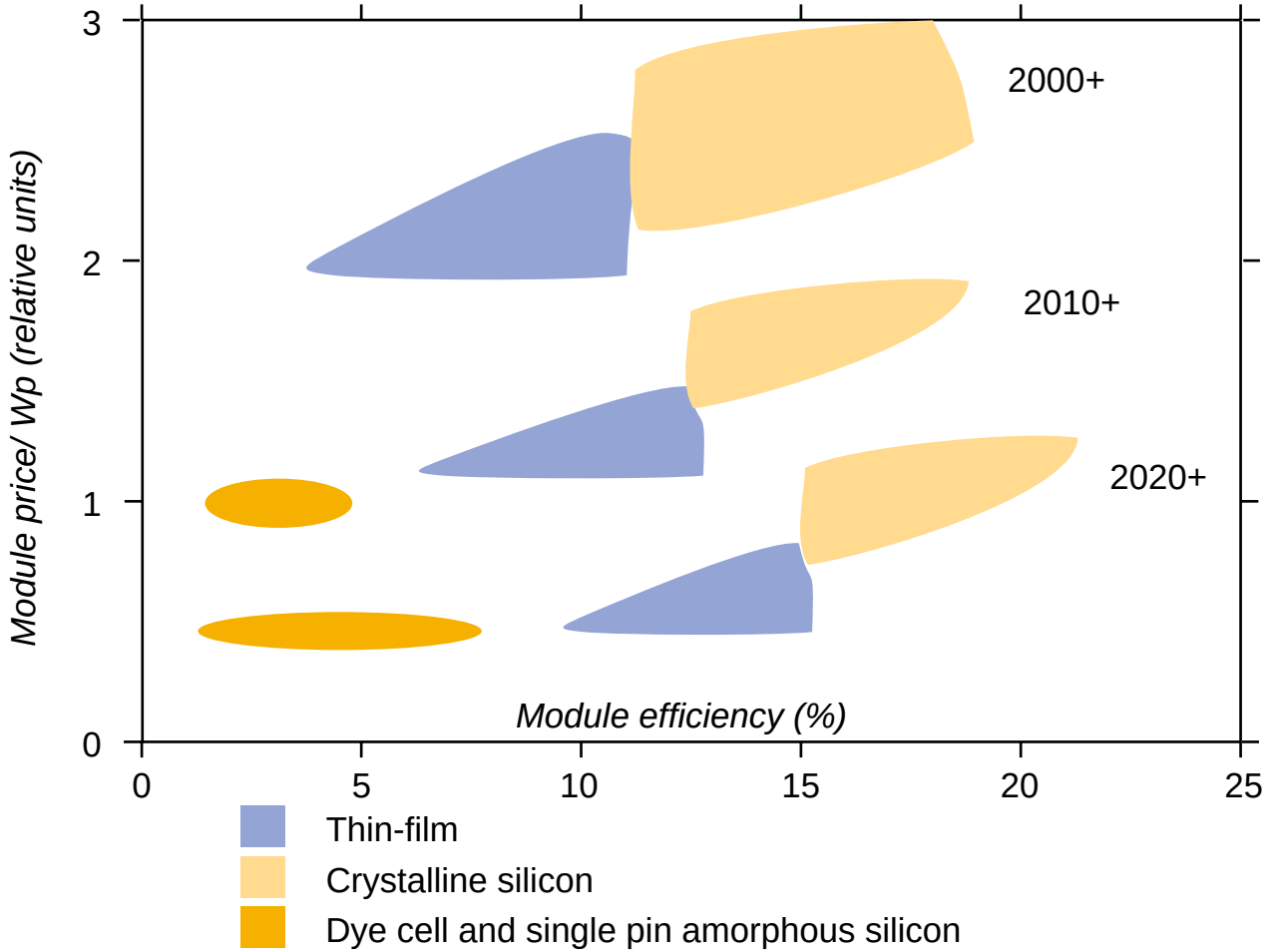
Overview of ErSol's expected positioning in the global PV market 2001-2010

World PV Cell/Module Production from 2001-2010



Cost reduction potential for different technologies



Source: Renewable Energy World May/June 2005

Summary on cost reduction strategies

- Cost reduction in silicon wafer-based technology through
  - efficiency increase of monocrystalline silicon solar cell
  - higher wafer yield from silicon through decreasing wafer thickness
  - integrated production from wafer to solar cell
  - economy of scale at >100 MWp/a production volume level

- Additional growth option and cost reduction potential through new thin-film cell technology

=> Competitiveness with both crystalline and thin film PV !!

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Thank you for your attention!

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