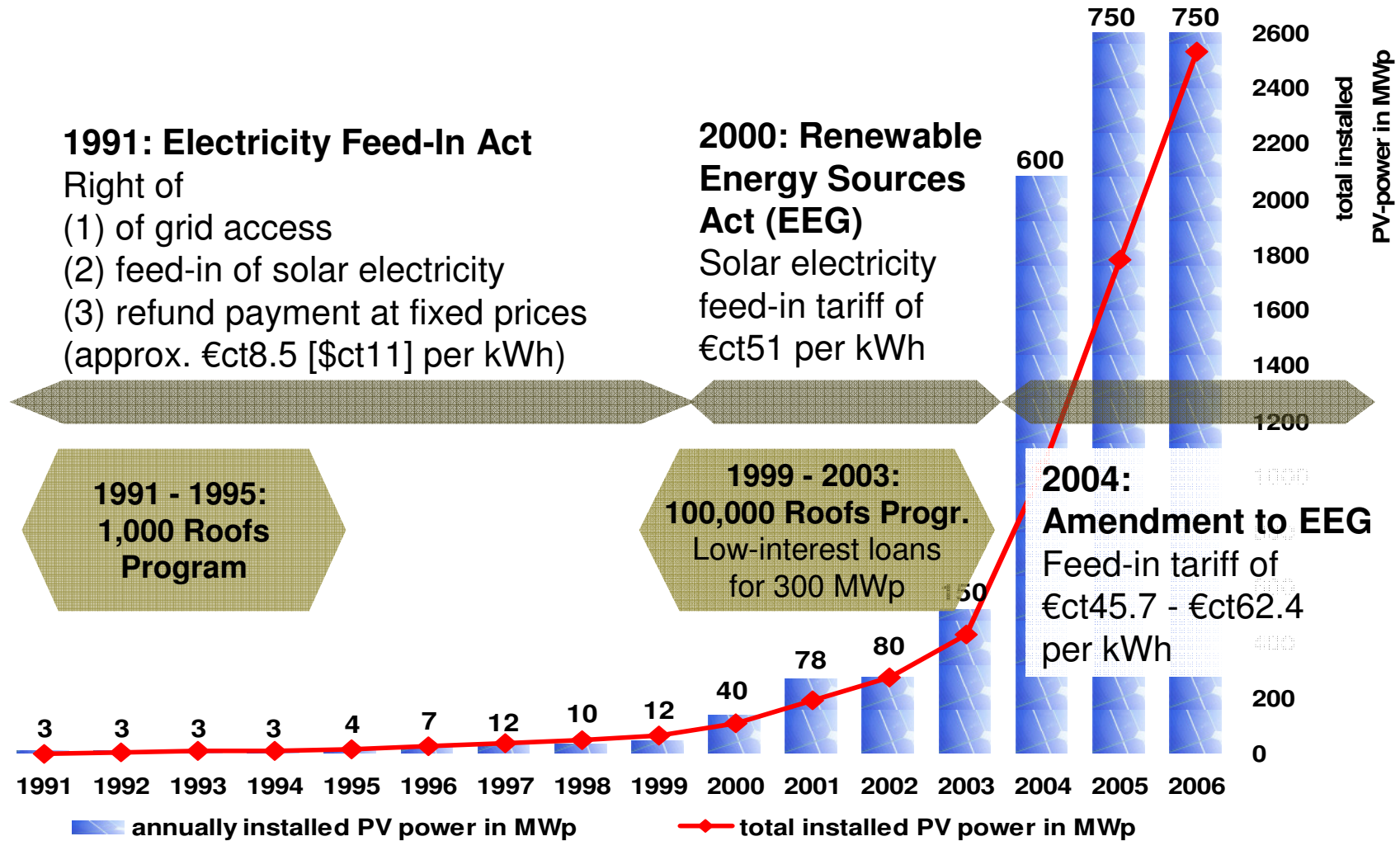


# German PV industry – status & trends

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**Seminar “Solarthermie und Photovoltaik in Italien”**  
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**Rom**

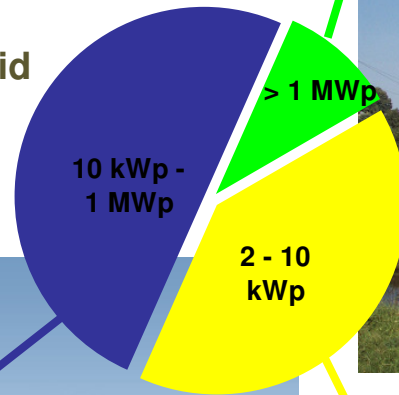
## Development of the German PV-market



# MARKET SEGMENTS

## Use of Photovoltaics in Germany

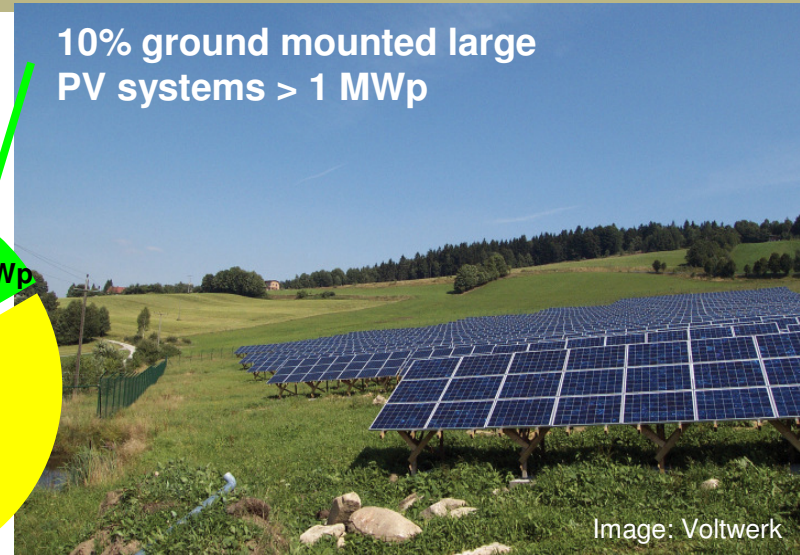
- More than 200,000 PV systems have already been installed
- 98% of systems are connected to the grid



50% multi family houses, public and social buildings, farms, commercial plants 10-1000 kWp



10% ground mounted large PV systems > 1 MWp

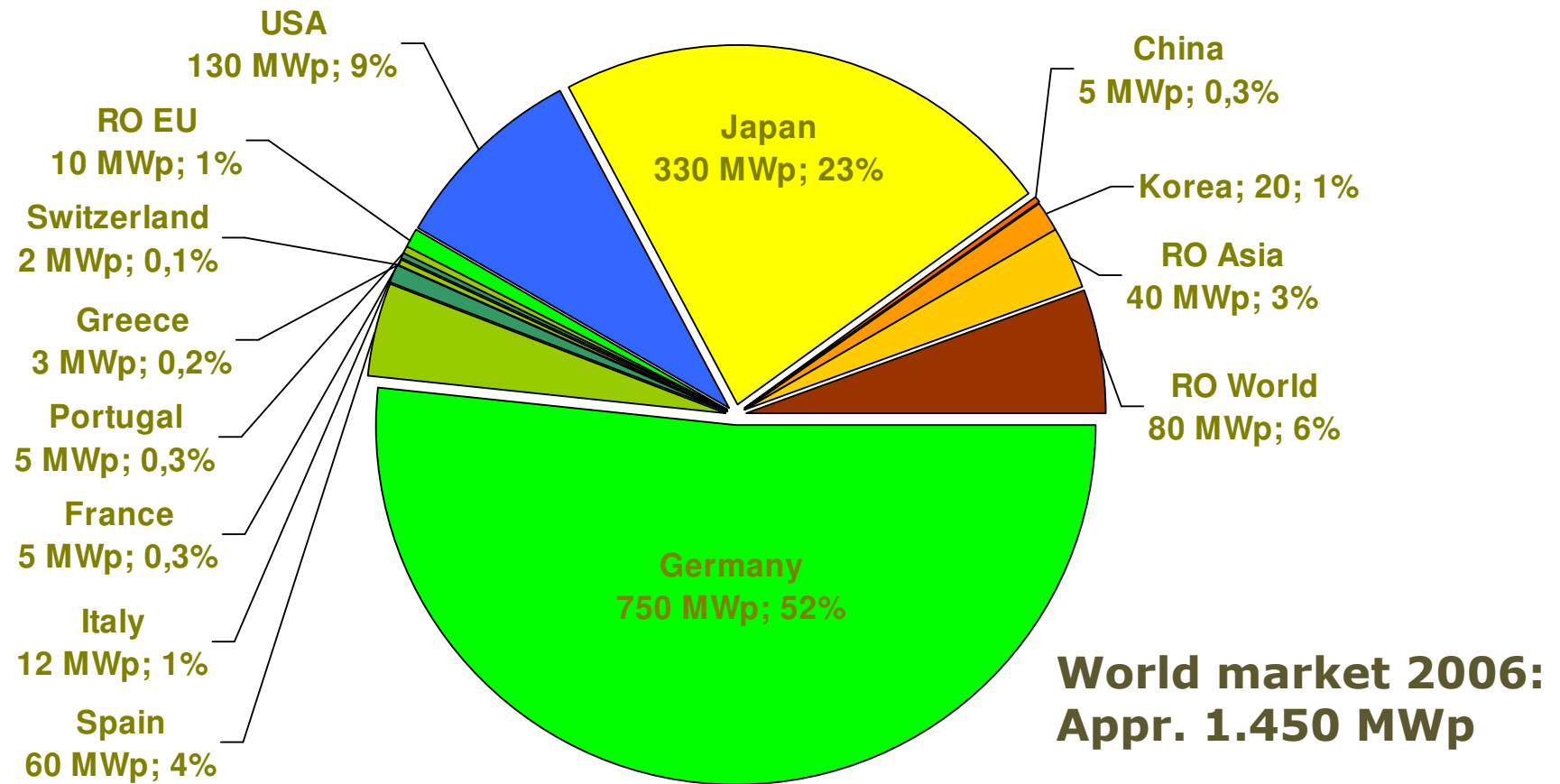


40% small PV systems on private residential homes 1-10 kWp



## Photovoltaic World Market 2006

Since 2004 Germany has become the largest PV-market



## GERMAN PV INDUSTRY

Large market size and differentiated market segments have lead to a very competetive national PV industry.

Silicon	Wafer	Cells	Modules	Special modules	Inverters / Battery charger
Wacker Chemie	ASI Intertech	Deutsche Cell	GSS	ASS	Aixcon
PV Silicon	Deutsche Solar	Ersol	Heckert-B.X.T.	Glaswerke Arnold	Dorf Müller
	PV Silicon	Schott Solar	Schott Solar	Schüco	Kaco
feedstock	Schott Solar	Sunways	Scheuten	Sunovations	Siemens
PV Silicon	(Conergy)	Q-Cells	Solar-Fabrik	Sunware	SMA
		(Conergy)	Solara	Webasto	Solar Konzept
			Solarwatt	Solarc	Solar-Fabrik
			Solon	Solarnova	Würth Solergy
			Sunset	Solarwerke Brandenburg	Steca
			SMD	Thin-film modules	Sunways
			(Conergy)		
				Antec	
				Sulfurcell	
				Würth	
				Schott Solar	
				Odersun	



Source: Invest in Germany

## GERMAN PV INDUSTRY DEVELOPMENT

### Successful interaction between PV market and German PV industry development

- More than €10 billion (\$12 billion) invested in PV systems since 2000
- More than €2 billion (\$2.4 billion) invested in manufacturing plants since 2000
  - About 40 companies produce silicon, wafers, cells, modules and inverters
  - Modern and automated production lines
  - Strong technological development and increased R&D activities
  - Improved efficiency, improved products
- Drop in costs for PV systems of
  - approx. 25% from 1999 to 2003
  - 60% from 1991 to 2003
  - price reduction of 10% since June 2006

Source: BSW Solar



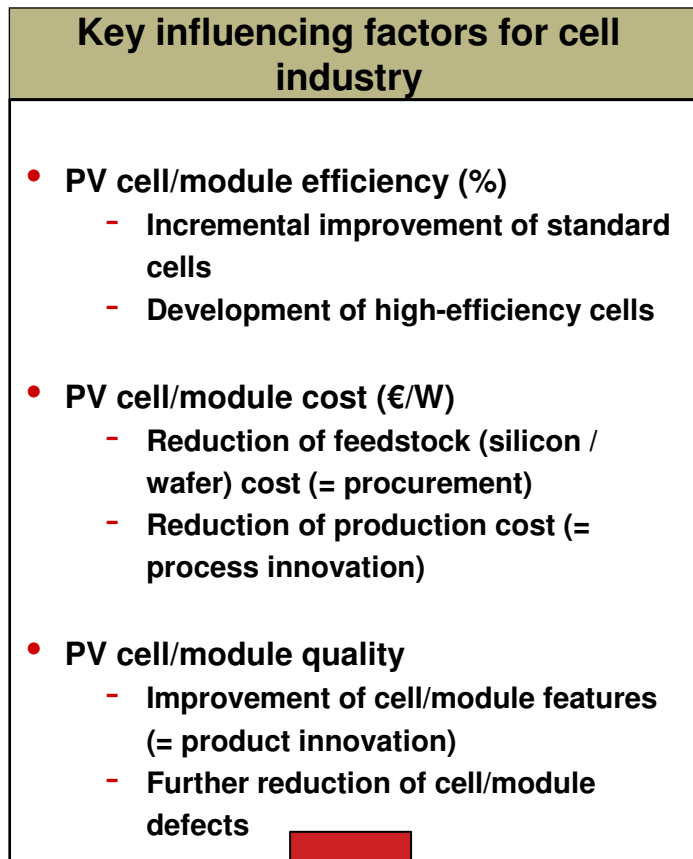
Image: Q-Cells



Image: Aleo

## TRENDS IN MODULE/CELL INDUSTRY

**Due to steady feed in tariff decrease PV industry is under strong pressure to make PV electricity competitive with grid prices.**



**Competitive economics of PV systems (Grid parity)**

- **Cost reduction has become the key issue for the PV industry as it races to achieve the objective of grid parity, and obtaining independence from further investment subsidies**
- **The 5% cost reduction prescribed by the German Renewable Energy Law is another powerful incentive for the industry to consolidate in search of greater efficiencies**

Source: eclareon intelligence, Photon International