

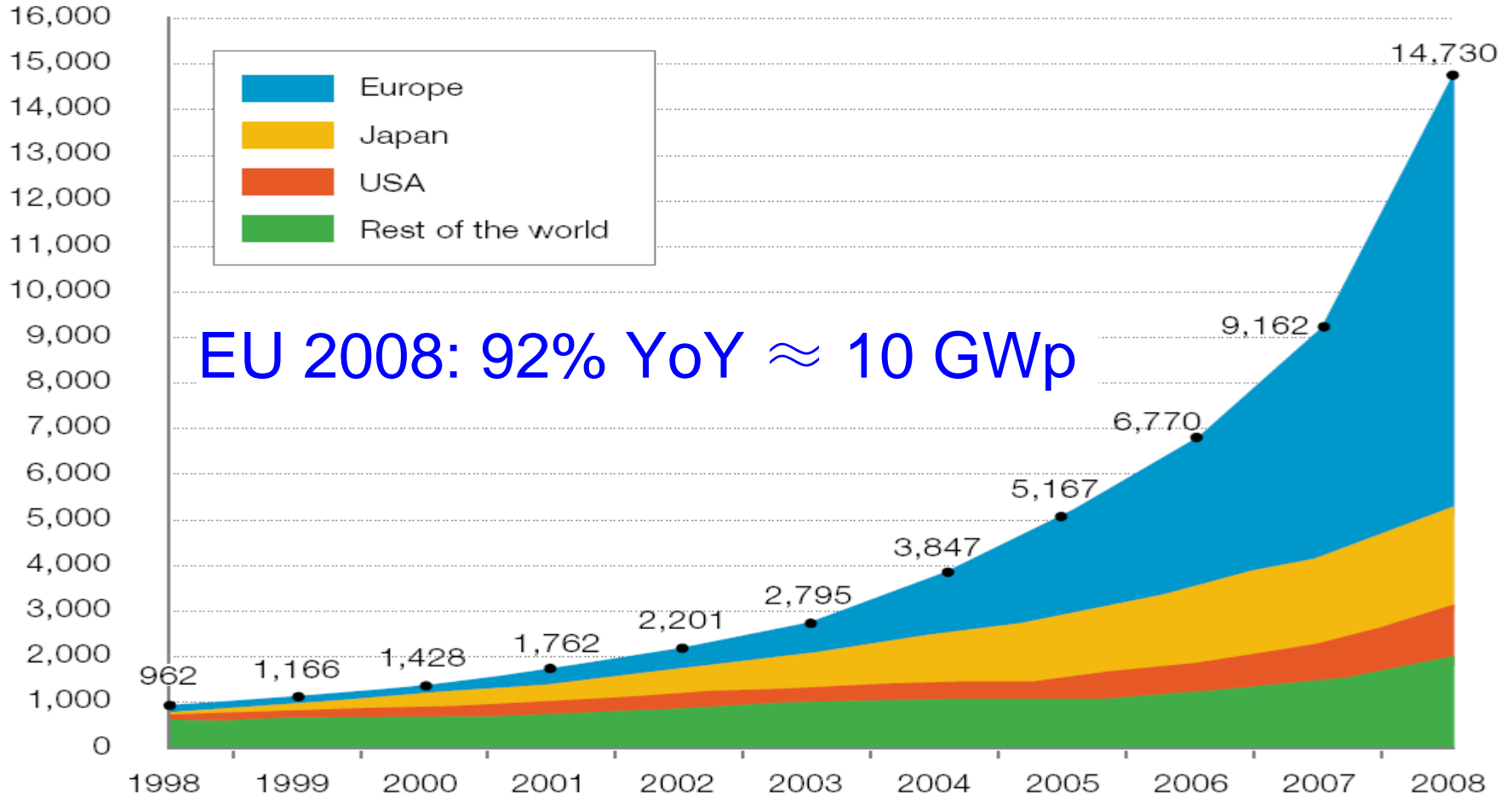
Supportive Policies for Solar Installations – Analysis of the EU Markets and Indications for the US Market



EU-CHINA
Energy and Environment Programme
中国 - 欧盟能源环境项目

Frank Haugwitz (韩飞)

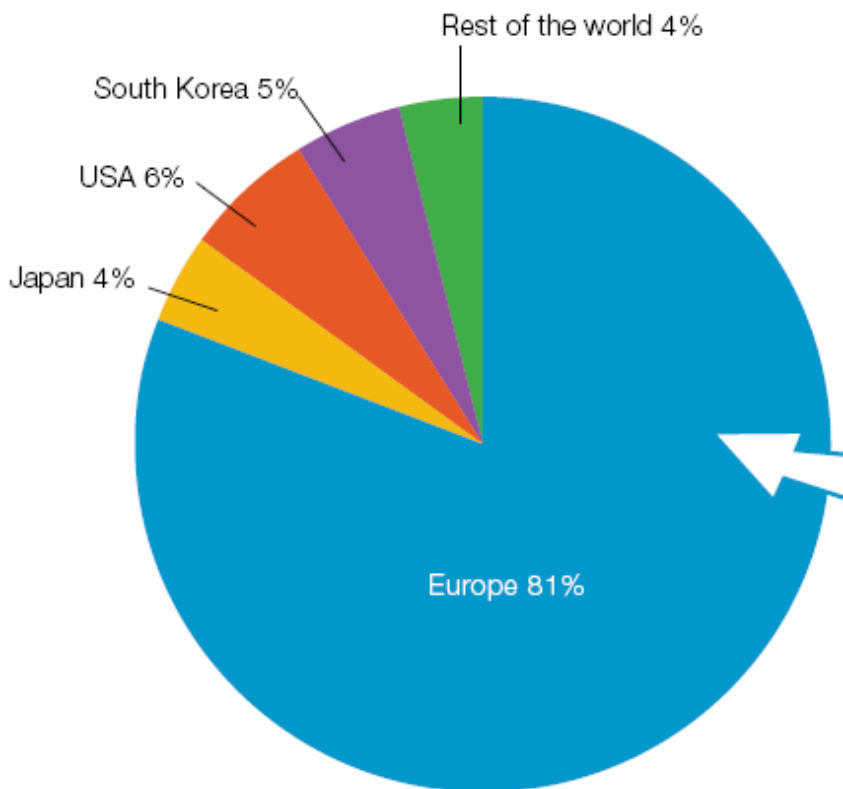
Global Cumulative MWp PV Installations per Region 1998-2008



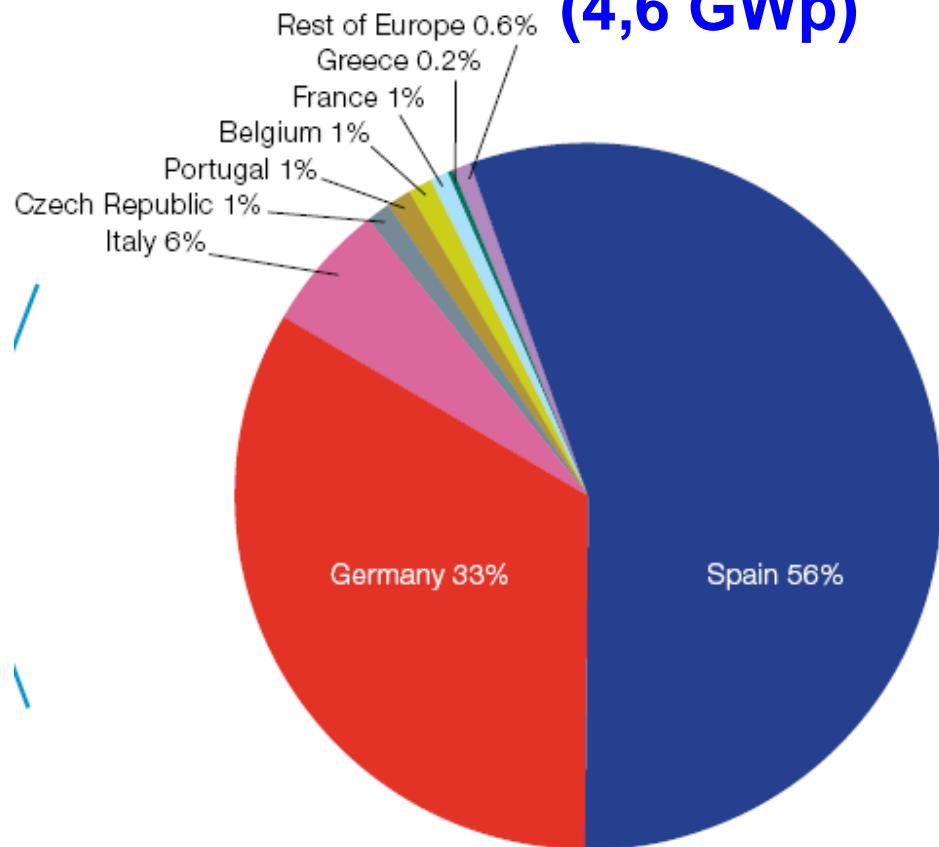
Source: EPIA Global Market Outlook March 2009

Regional Distribution of PV Markets in 2008

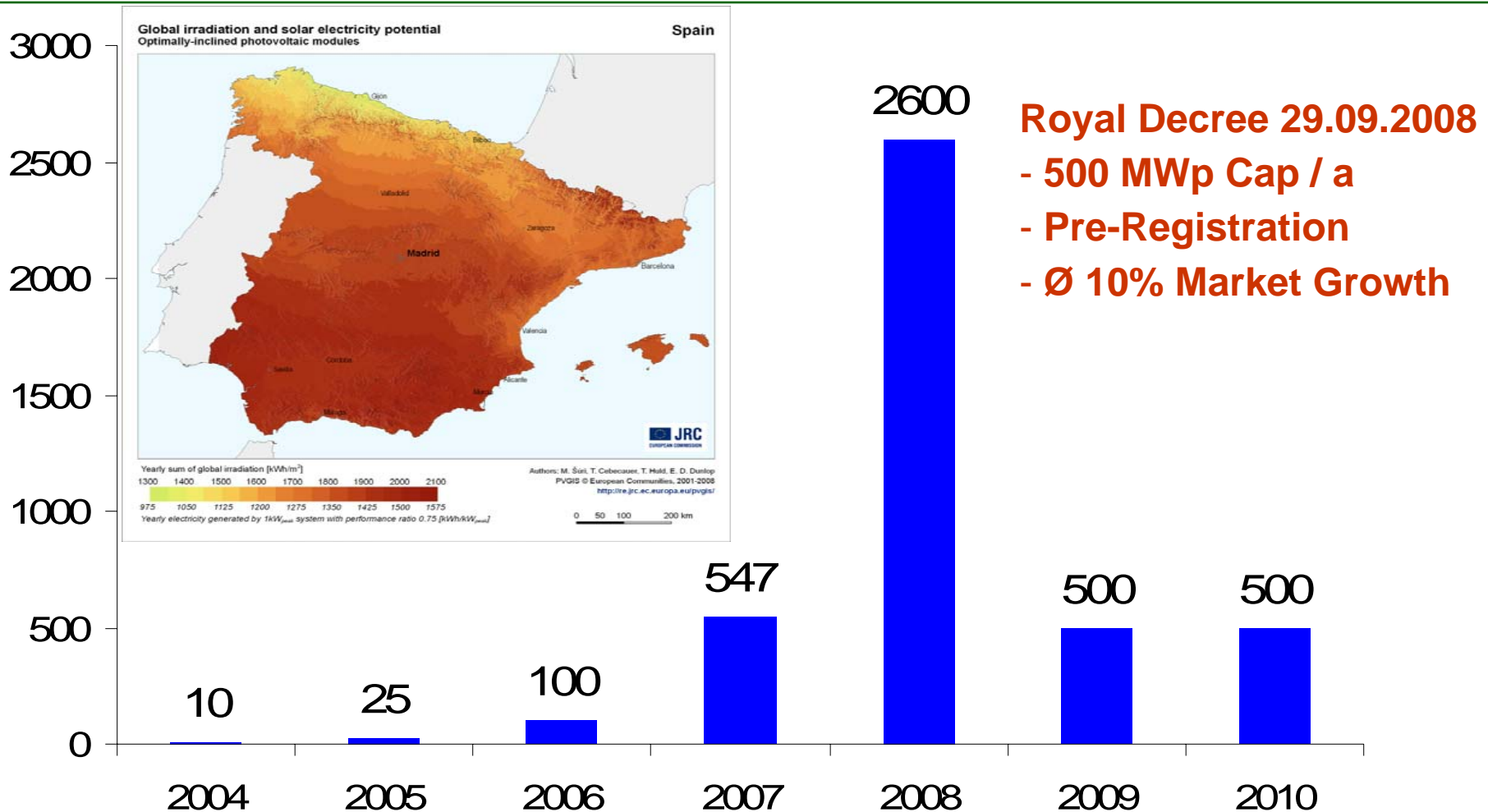
Global Markets in 2008 (5,6 GWp)



EU Markets in 2008 (4,6 GWp)



Spanish PV Market Development

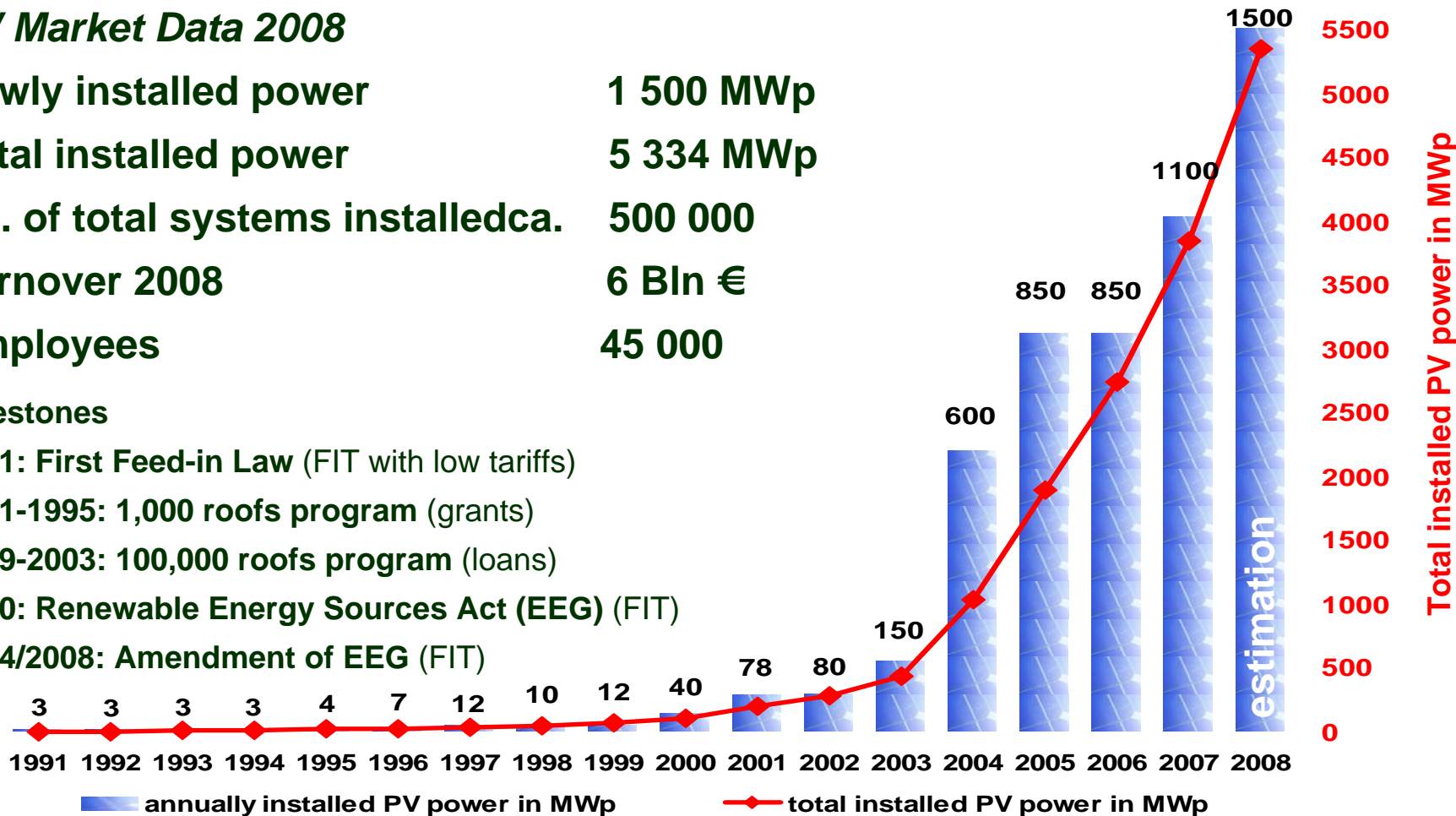


PV Market Data 2008

Newly installed power	1 500 MWp
Total installed power	5 334 MWp
No. of total systems installed ca.	500 000
Turnover 2008	6 Bln €
Employees	45 000

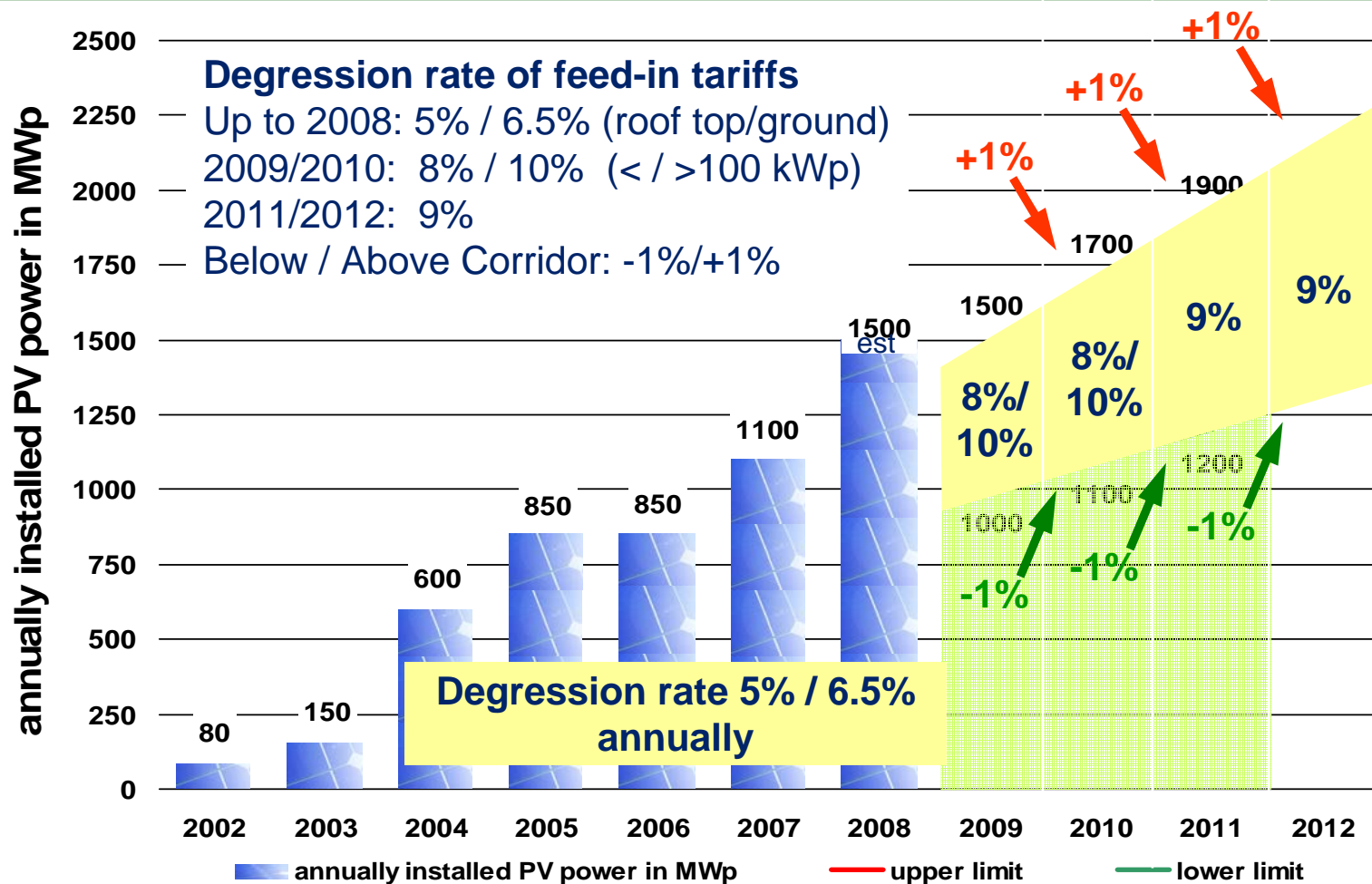
Milestones

- 1991: First Feed-in Law (FIT with low tariffs)
- 1991-1995: 1,000 roofs program (grants)
- 1999-2003: 100,000 roofs program (loans)
- 2000: Renewable Energy Sources Act (EEG) (FIT)
- 2004/2008: Amendment of EEG (FIT)



Germany

FIT-Amendment 06/2008



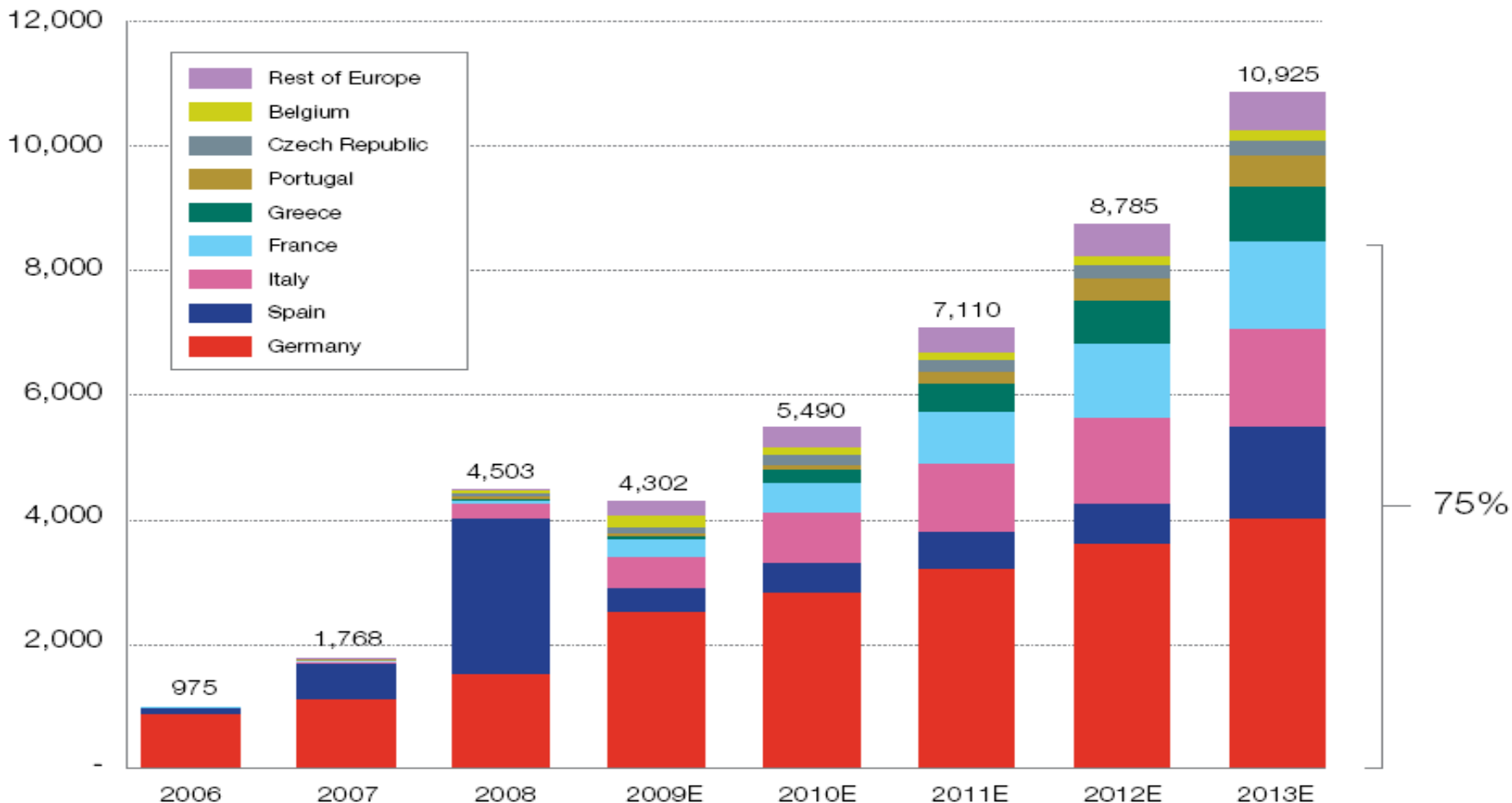
European PV Markets – Perspectives

Germany	FIT Amendment 06/2008 will ensure continuity until 2012; no changes expected, market demand for 2010 est. 2 GWp/a
Spain	Explosive growth in 2008; Royal Decree 09/2008 reduces the PV market to 500 MWp in 2009/2010 and foresees annual market growth of 10%
Italy	FIT, Natl. Target of 1200 MW by 2010/11, New FIT 2011 although tight control expected sound market development envisaged, admin barriers on regional level, market demand for 2010 est. 650-900 MWp/a
France	FIT, good market development, favorable conditions for BIPV, further improvements of framework conditions expected, 2010 est. 600 MWp/a
Greece	Jan 15, 2009 new FIT incl. degression from 08/2010 onwards, new Roof-Top Prog. to be initiated, former cap abolished, due to admin procedures applications for 3.7 GW are waiting to be approved

Promising Future European PV Markets:

Belgium (48 MWp), Czech Republic (51MWp), Portugal 50 MWp), Slovenia, UK, Turkey, ...

EU Annual Market Perspectives until 2013



Source: EPIA Global Market Outlook March 2009

US Policy and Incentive Landscape

Investment Tax Credit (ITC)

- 30% ITC extended through 2016

DOE Loan Guarantee

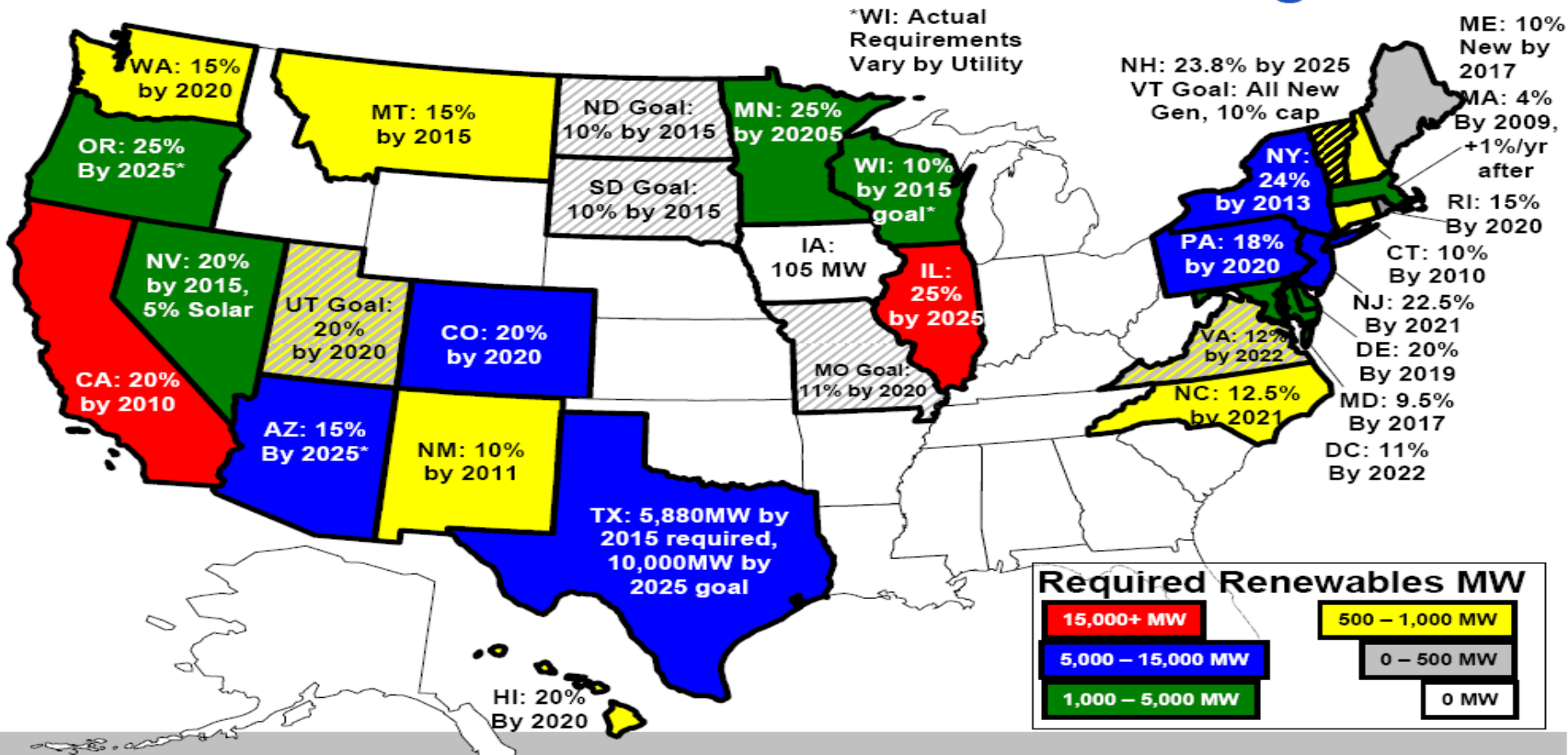
- \$6bb prog. to support \$60bb loans (assuming 10% default)
- Initial rules to be formulated in late April // Final rules expected by May/June

Energy Bill

- Cap and Trade program
- Emissions cap involve 3% below 2005 levels in 2012, 20% below in 2020, 42% below in 2030 and 83% below in 2050
- Includes National Renewable Portfolio Standard (RPS)
- Proposed in the current Federal Budget and faces opposition from 28 senators
- Bill is expected to be introduced in May with passing in July. Plans to implement the bill by next year

US Policy and Incentive Landscape

State Renewable Portfolio Standards – Aug 2008



Source: California Power Utility Commission

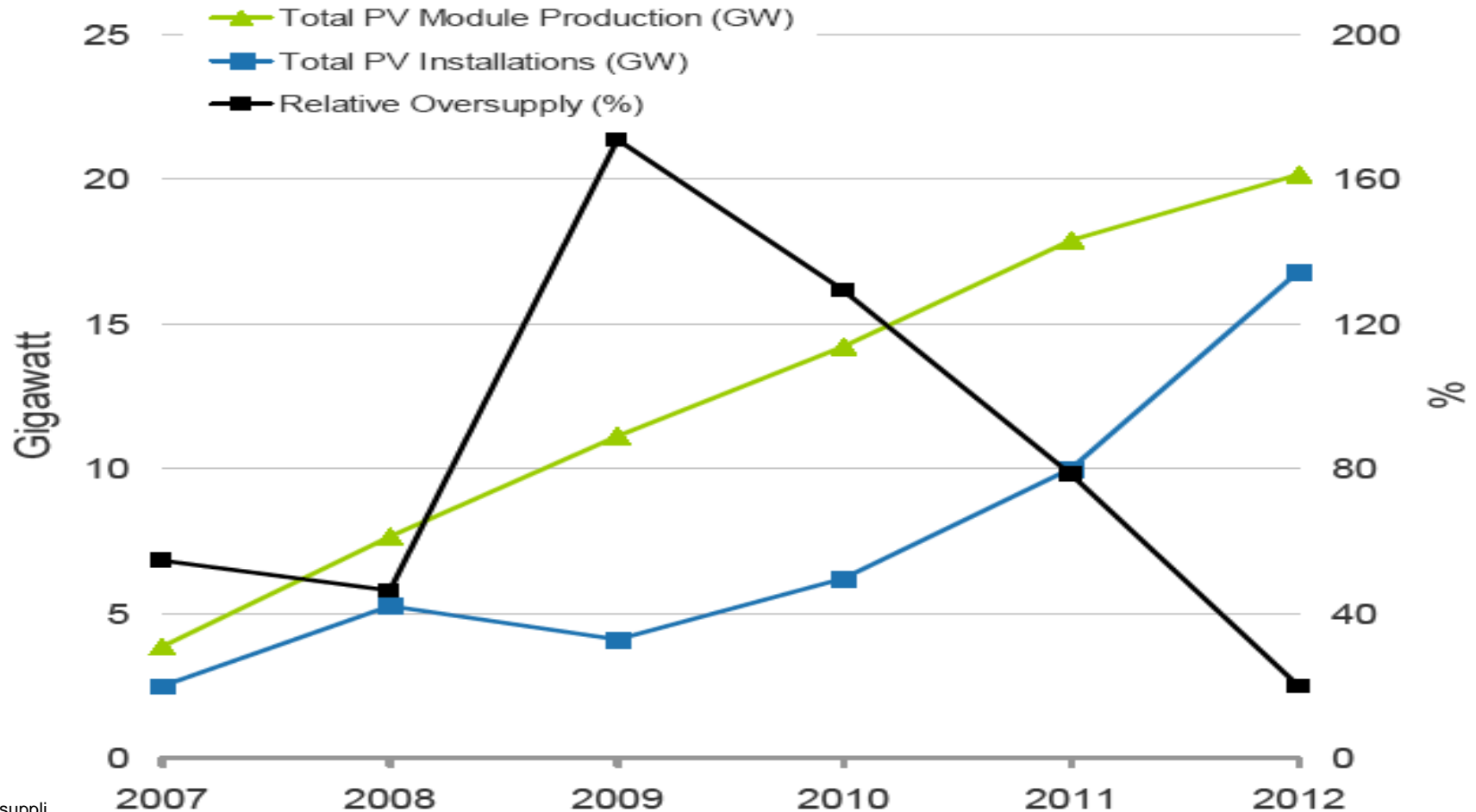
US Market Perspectives until 2010

2008: 3rd largest market with 342 MW \approx 81% YoY

	2009		2010	
	Confident	Optimistic	Confident	Optimistic
Residential	150	150	250	250
Commercial	300	350	500	600
Utility-Rooftop	75	150	125	200
Federal Build.	175	350	700	1400
Utility-Ground mounted	25	50	350	400
Total in MW	725	1050	1925	2850

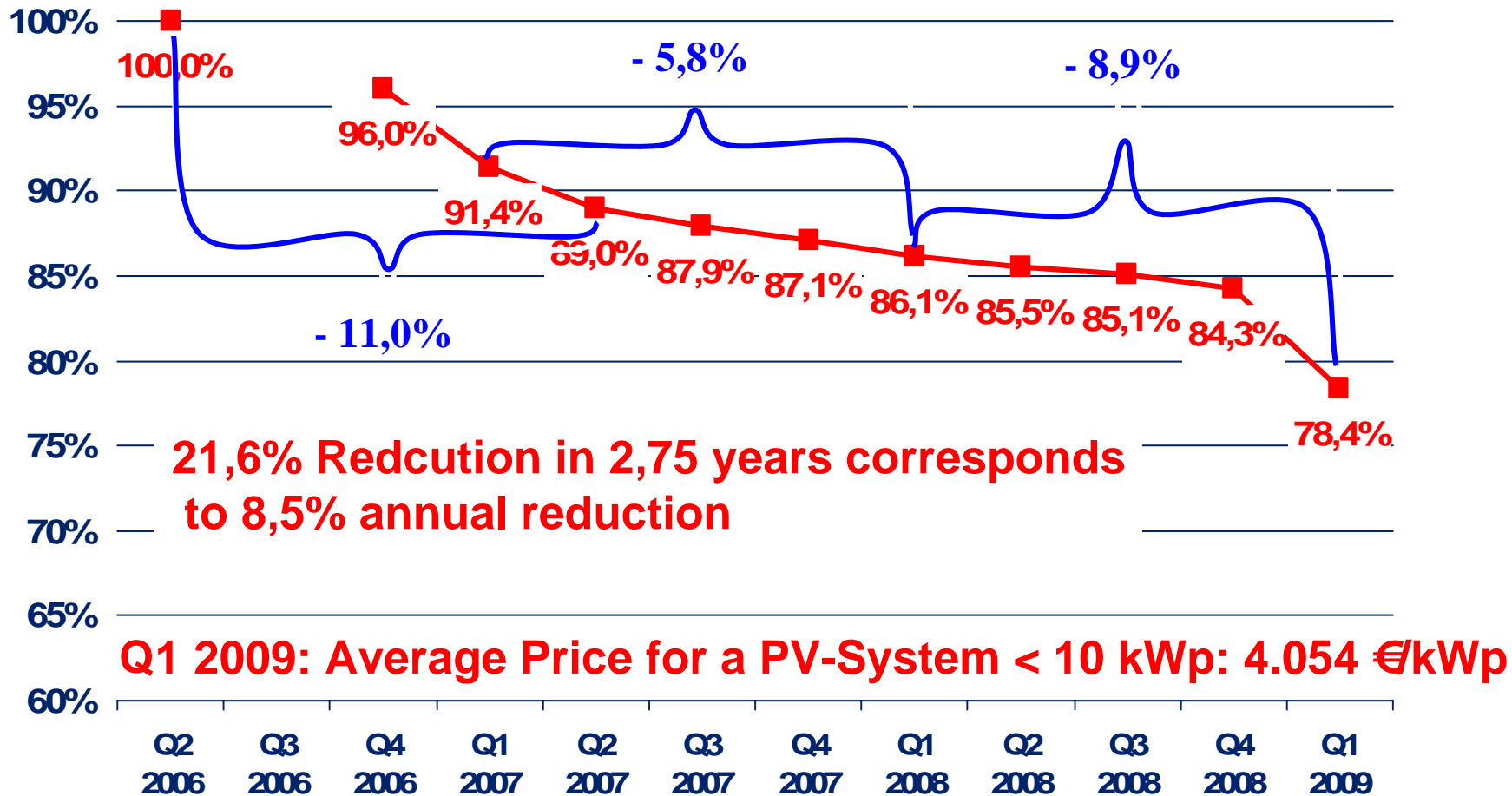
Source: Credit Suisse

Global Market Demand vs Module Production Capacity



Source: isuppli

German PV System Price Index



Source: Representative independent poll of 100 installers by EUPD-Research on behalf of BSW-Solar
PV-System Price means final customer price

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