# EUROPEAN PHOTOVOLTAIC INDUSTRY ASSOCIATION

**Overview of current market trends for PV systems** 

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European Photovoltaic Industry Association

## Could PV electricity be cheapter than new nuclear ?

# 109 EUR/MWh

Hinkley Point - UK



# 80 EUR/MWh

Fraunhofer ISE – Central Germany – Cheapest utility-scale





## **Market Development**



#### Rapid Market Development





#### 2013 PV Market

Growing market. At least 35 GW (installed <> connected to the grid)





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#### Evolution of the Global Installed PV Capacities





> 135000

#### First Power Source Installed from 2011 to 2013 in Europe

Net power generation capacities added in the EU 27 in 2012 (MW)



Based on EPIA, ESTELA, EWEA and Platts analyses

Source: EPIA, "Global Market Outlook for Photovoltaics 2013-2017", 2013

In the same time, demand grew less than 5%



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### The EU trio: Gas / Wind / PV

140 80 120 Other renewable 7 100 60 80 Wind 60 29 New production 40 40 20 PV 2 19 20 0 -20 Gas -15 -17 15 -40 0 production Geothermal Huclear Fueloil Biomass Ocean Coal rhydro Waste ୍ଟେ 900t 625 wind 84 Nuclear -8 Coal -20 \_ost -12 Utility-scale PV Rooftop PV -40 Wind offshore Source: EPIA, "Global Market Outlook for Photovoltaics 2013-2017", 2013 Wind onshore

Net generation capacity added in the EU 27 2000-2012 (GW)

Theoretical balance of new electricity production in the EU 27 in 2012 (TWh)

Based on EPIA, ESTELA, EWEA and Platts analyses

Source: EPIA, "Global Market Outlook for Photovoltaics 2013-2017", 2013



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#### Market size

#### 

	2010	2011	2012			
1	Germany	Italy	Germany			
2	Italy	Germany	Italy			
3	Czech Rep.	China	China			
4	Japan	USA	USA			
5	USA	France	Japan			
6	France	Japan	France			
7	China	Belgium	Australia			
8	Belgium	UK	India			
9	Spain	Australia	UK			
10	Australia	Greece	Greece			
Market level to access the top 10						
	383 MW	425 MW	912 MW			

China:	8 - 12 GW		
Japan:	6 GW		
USA:	4 GW		
Germany:	3.3 GW		

#### Year MW Italy Germany Germany Germany Germany Italy China USA Spain China

...



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#### Market Share per Region: From Europe to Asia

Share of PV Market per Region 2000-2012 100% 90% Middle East & Africa 80% Europe 70% Asia Pacific 60% 50% America 40% 30% 20% 10% 0% 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013

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## **PV Market Drivers**



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#### **Drivers to PV Market Development**



China:FiTJapan:FiTUSA:Tax breaks & net-meteringGermany:FiT and SC

**21% 61% 5%** <



#### **Grid Parity and Competitiveness**



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#### What does « competitive » means ?





source: EPIA / IEA PVPS - Gaetan Masson

#### PV Competitiveness on Electricity Market

LCOE – Utility-scale PV – 1 EUR/WP – 6,8% WACC - 20 years - 2010 Electricity Market Price – Merit order effect not considered



#### LCOE Ground Mounted - 1 EUR/Wp



## **PV Market Trends**



## PV in Europe (2012)





#### Stagnating Europe

European annual PV market scenarios until 2017 - Business-as-Usual and Policy-Driven (MW)



Source: EPIA, "Global Market Outlook for Photovoltaics 2013-2017", 2013



#### MARKET EVOLUTION

European PV cumulative capacity forecasts compared with EPIA's new 2020 scenarios\* and NREAPs targets (MW)



\* EPIA, "Connecting the Sun: Solar photovoltaics on the road to large-scale grid integration", 2012. \*\* The percentage indicates the share of electricity demand.

Source: EPIA, "Global Market Outlook for Photovoltaics 2013-2017", 2013



#### PV In the World (2012)





#### A Growing Global PV Market





#### PV in the Global Electricity Mix

135 GW in 2013  $\rightarrow$  160 TWh

0.8 % of the Global Electricity Demand.

35 GW in 2013	2020	IEA Current Policies	IEA 450 Scenario	2035	IEA Current Policies	IEA 450 Scenario
		scenario			scenario	
30 GW a year	310 GW / 375 TWh	1.3 %	1.4 %	760 GW / 1000 TWh	2.5 %	3.1 %
60 GW a year	520 GW / 620 TWh	2.1 %	2.3 %	1420 GW / 1850 TWh	4.6 %	5.8 %
100 GW a year	800 GW / 960 TWh	3.3 %	3.6 %	2300 GW / 3000 TWh	7.4 %	9.4 %



#### Conclusions

135 GW installed – 2013 was another record year.

Still PV produces less than 1% of the World Electricity Consumption

The market is still heavily dependent on support policies

The growth in 2013 was fulled by 2 countries in Asia: Japan and China (>50%)

Europe's growth has been fueled mainly by 2 countries: Germany: 36 GW – Italy: 18 GW (67%)

The post-incentives era will see two separate sets of segments developing:

- An energy-savings driven market for prosumers
- A power generation market for utility-scale PV

Challenges are numerous and complex: grid and electricity market Integration, profitability of incumbent players, ...

Will 2014 be the year of a widespread development of PV ?







## THANK YOUR FOR YOUR ATTENTION

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