

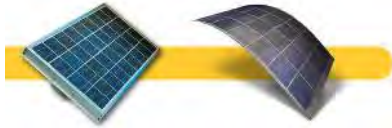
HELLENIC ASSOCIATION OF PV COMPANIES



Photovoltaic Market in Greece

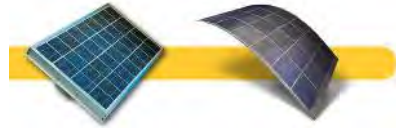
D. Kyriakides
BoD, HELAPCO

6yh SEED - Thessaloniki, May 2012



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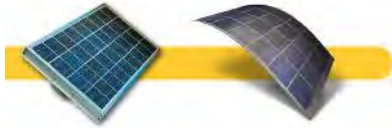
Hellenic Association of PV Companies

HELAPCO:

- ❖ Non-profit legal entity
- ❖ Founded in 2002 by major companies active in PV equipment supply, system design and installation
- ❖ Today there are more than 100 members representing >80% of the market

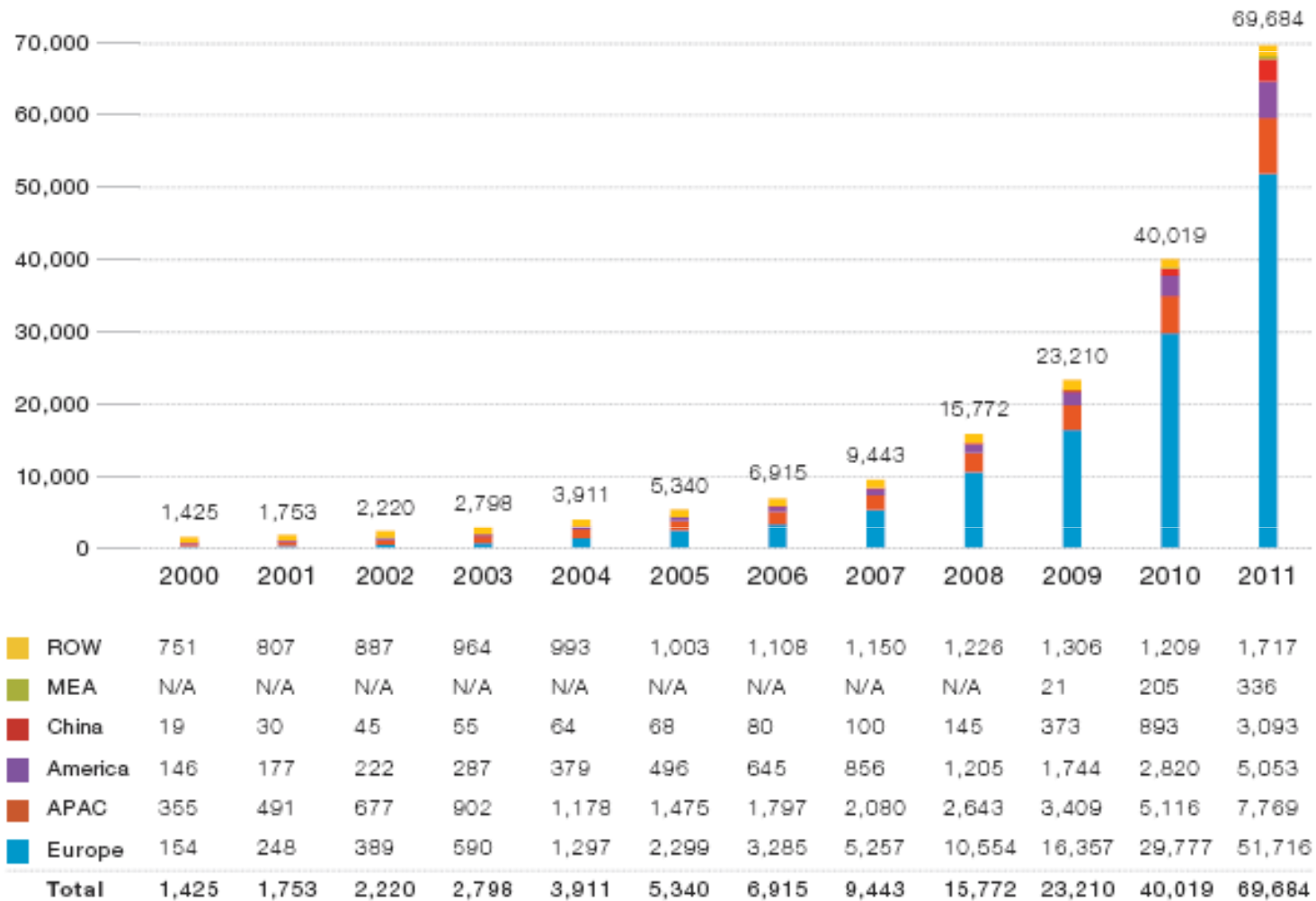
Targets:

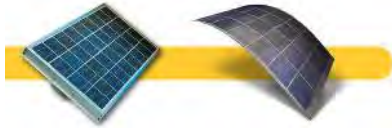
- ❖ Development of a healthy and sustainable PV market and gradual independence from support schemes and subsidies
- ❖ Resolving bureaucratic issues and other development delays
- ❖ Reaching grid parity



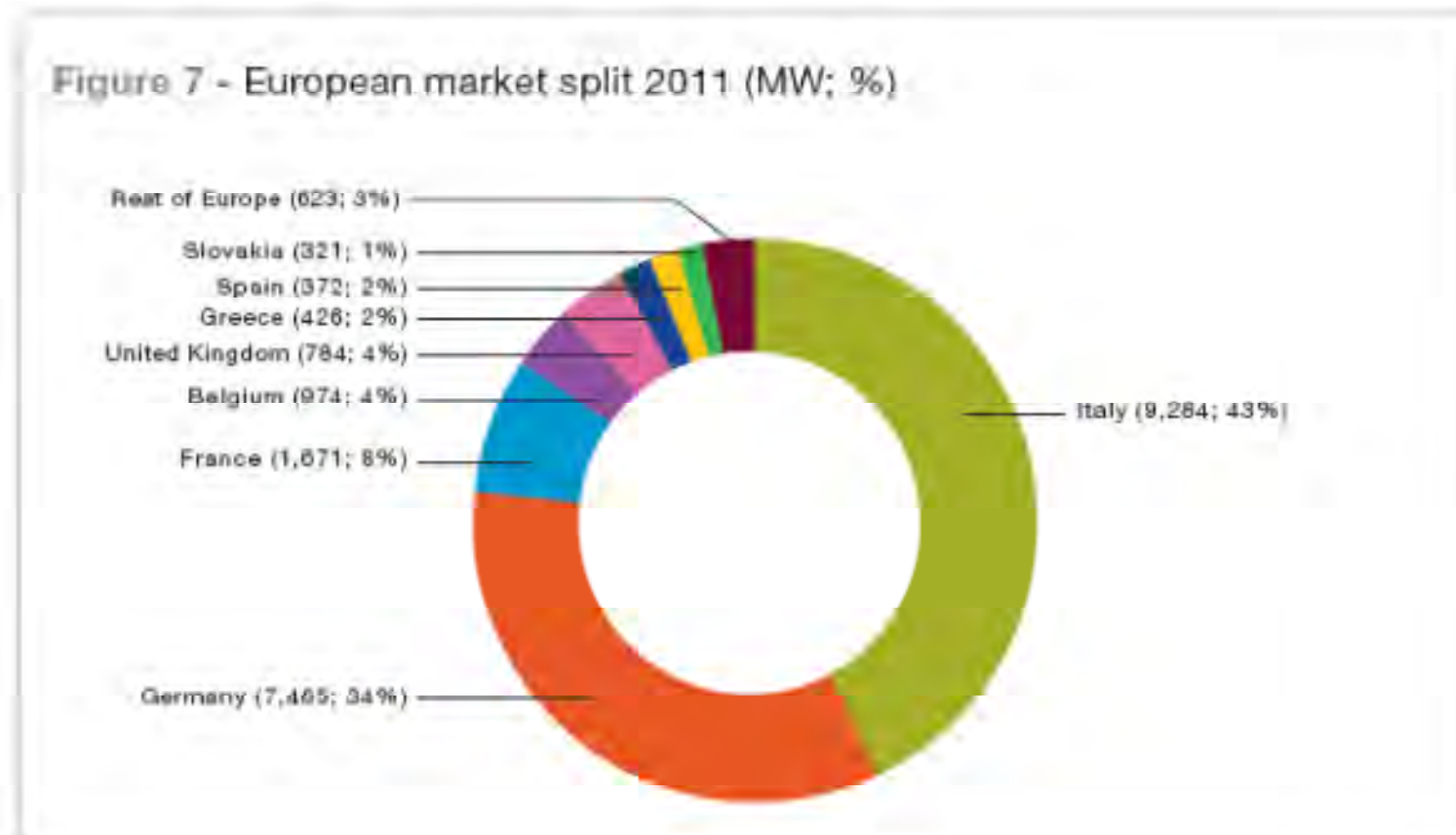
Global PV Market Evolution

Figure 1 - Evolution of global cumulative installed capacity 2000-2011 (MW)

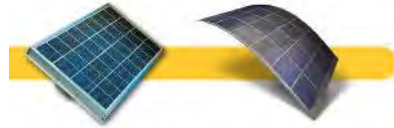




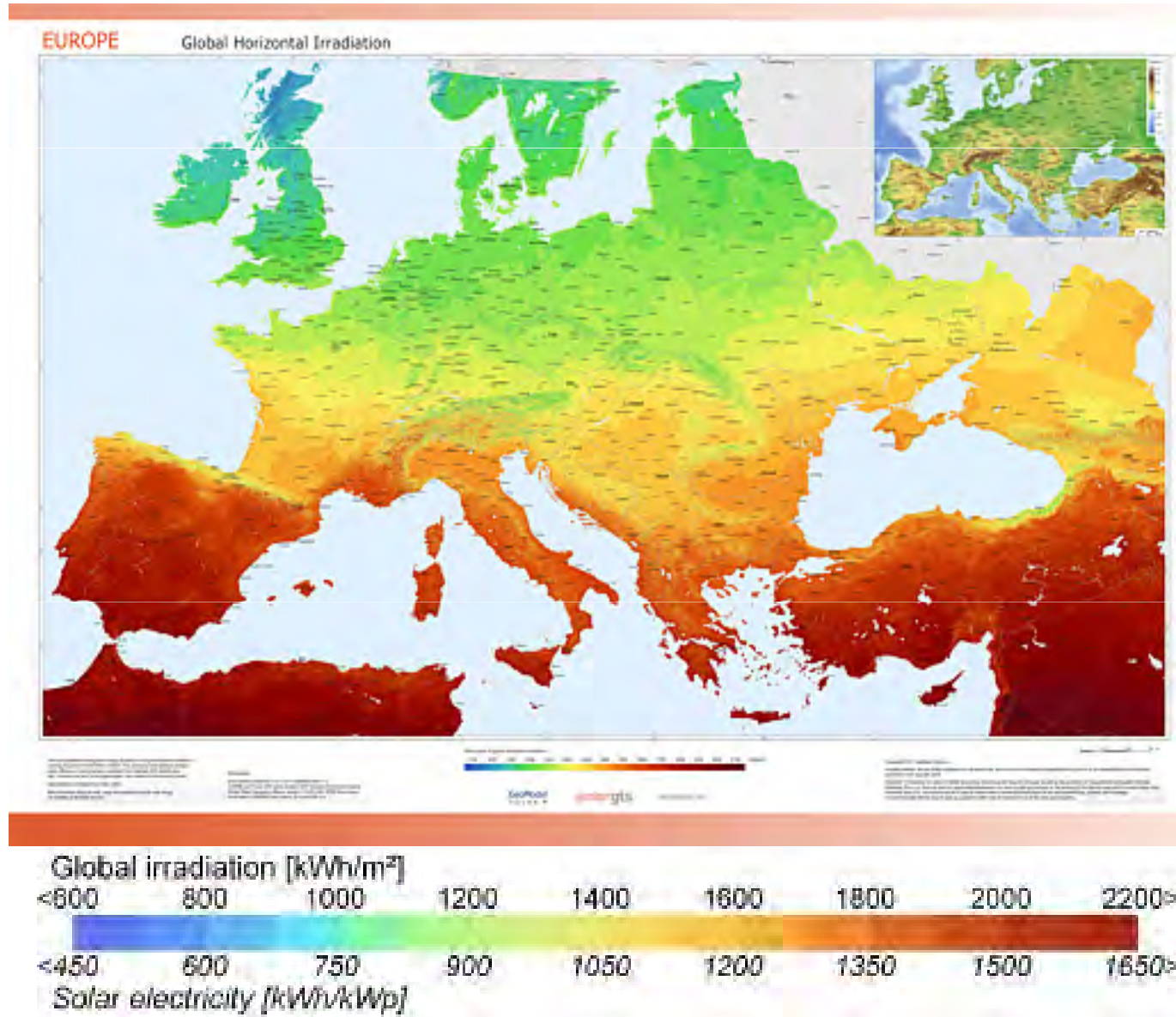
European PV Markets in 2011

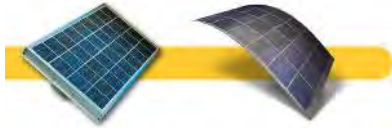


Total New Capacity in 2011: 22 GWp



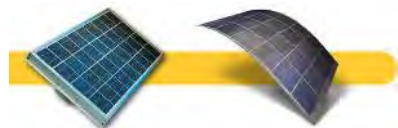
Solar Irradiance Map





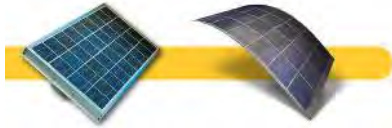
National Renewable Energy Action Plan

	2014		2020	
MWp	Farmers	Other	Farmers	Other
Target	500	1000	750	1450
TOTAL	1500		2200	



FiT [€/kWh]

Month/Year	Residential <10kWp	10kWp<P<100kWp	>100kWp
June 2006-February 2010	-	0,450	0,400
August 2010	0,550	0,441	0,392
February 2011	0,550	0,419	0,373
August 2011	0,550	0,395	0,351
February 2012	0,495	0,329	0,292
August 2012	0,470	0,306	0,272
February 2013	0,447	0,284	0,253
August 2013	0,424	0,264	0,235
February 2014	0,403	0,246	0,218
August 2014	0,383	0,229	0,203
February 2015	0,363	1.4xSMP	1.3xSMP
August 2015	0,345	1.4xSMP	1.3xSMP



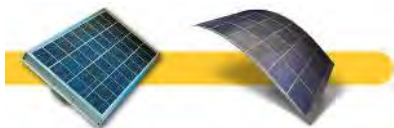
IEA director statement on incentives

The executive director of the International Energy Agency (IEA), Maria van der Hoeven, says

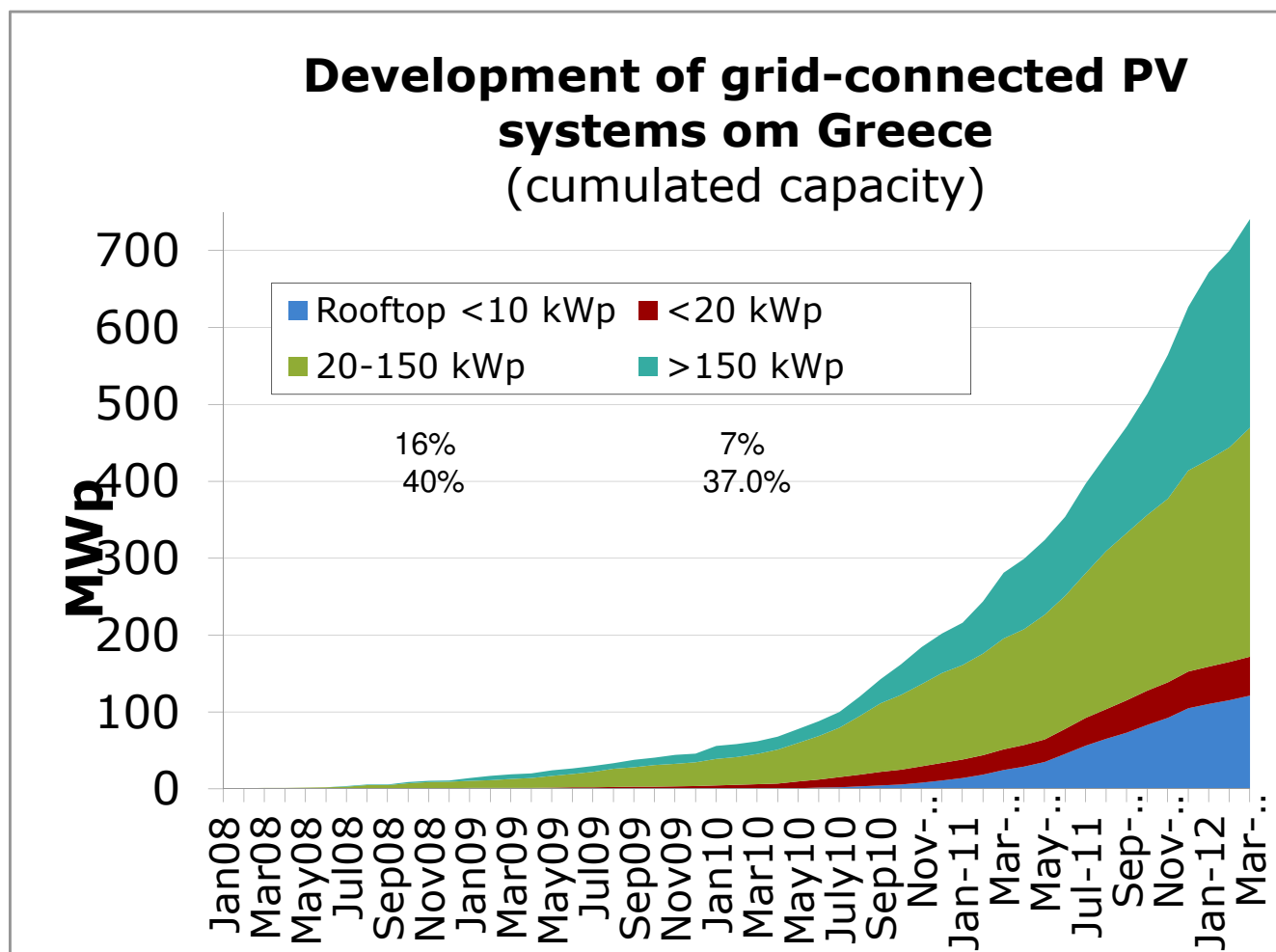
“Renewable energy is swiftly coming of age, reducing the need for public support.”

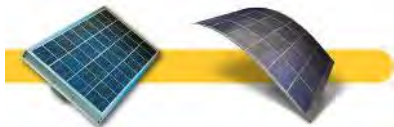
“Changes to incentive policies must be made in a transparent and predictable way and should never be retroactive.”

“Some \$66 billion in economic incentives were spent worldwide on renewable energy in 2010, less than a fifth of the \$409 billion in fossil-fuel subsidies the same year.”



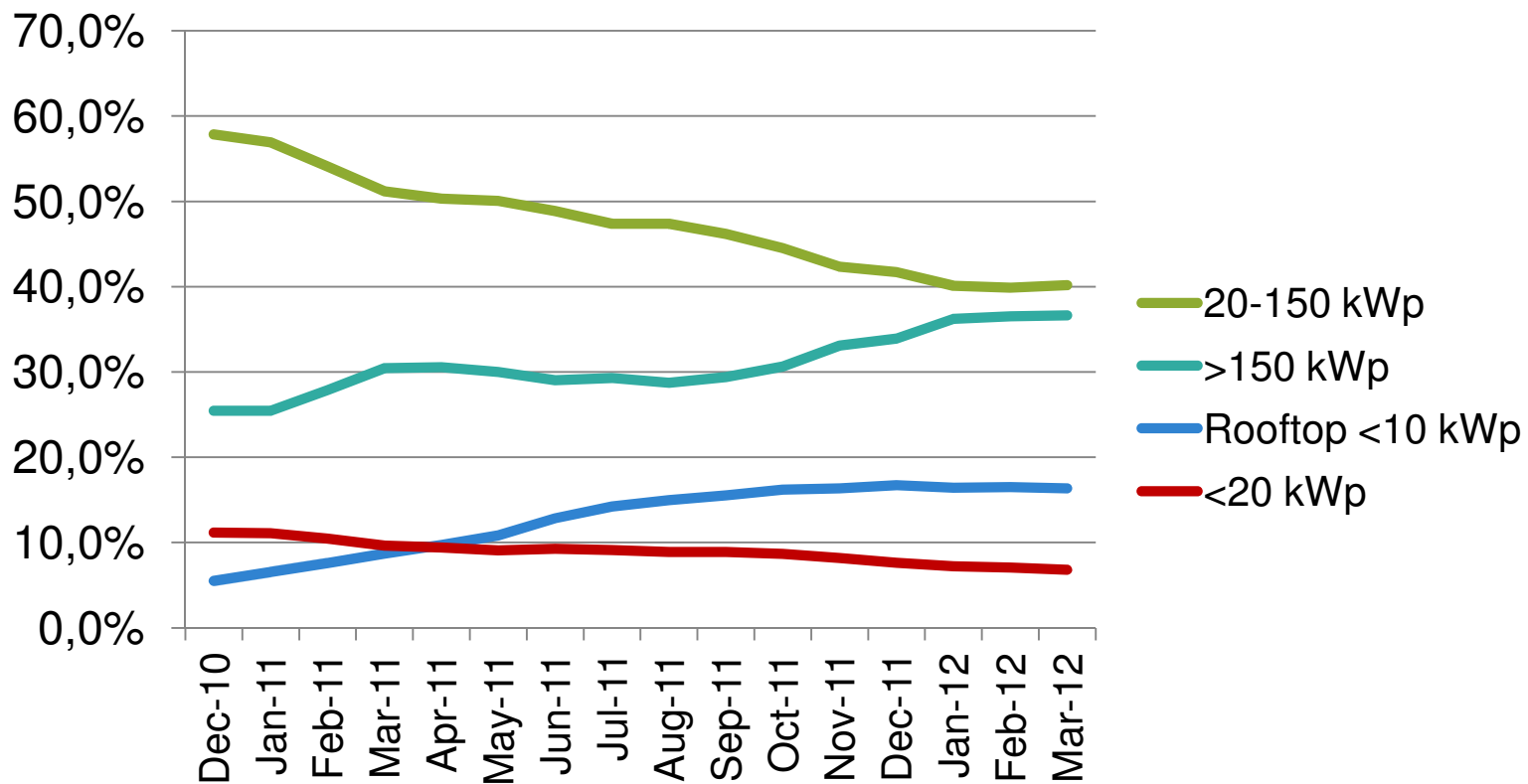
Greek Market Statistics

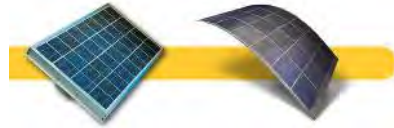




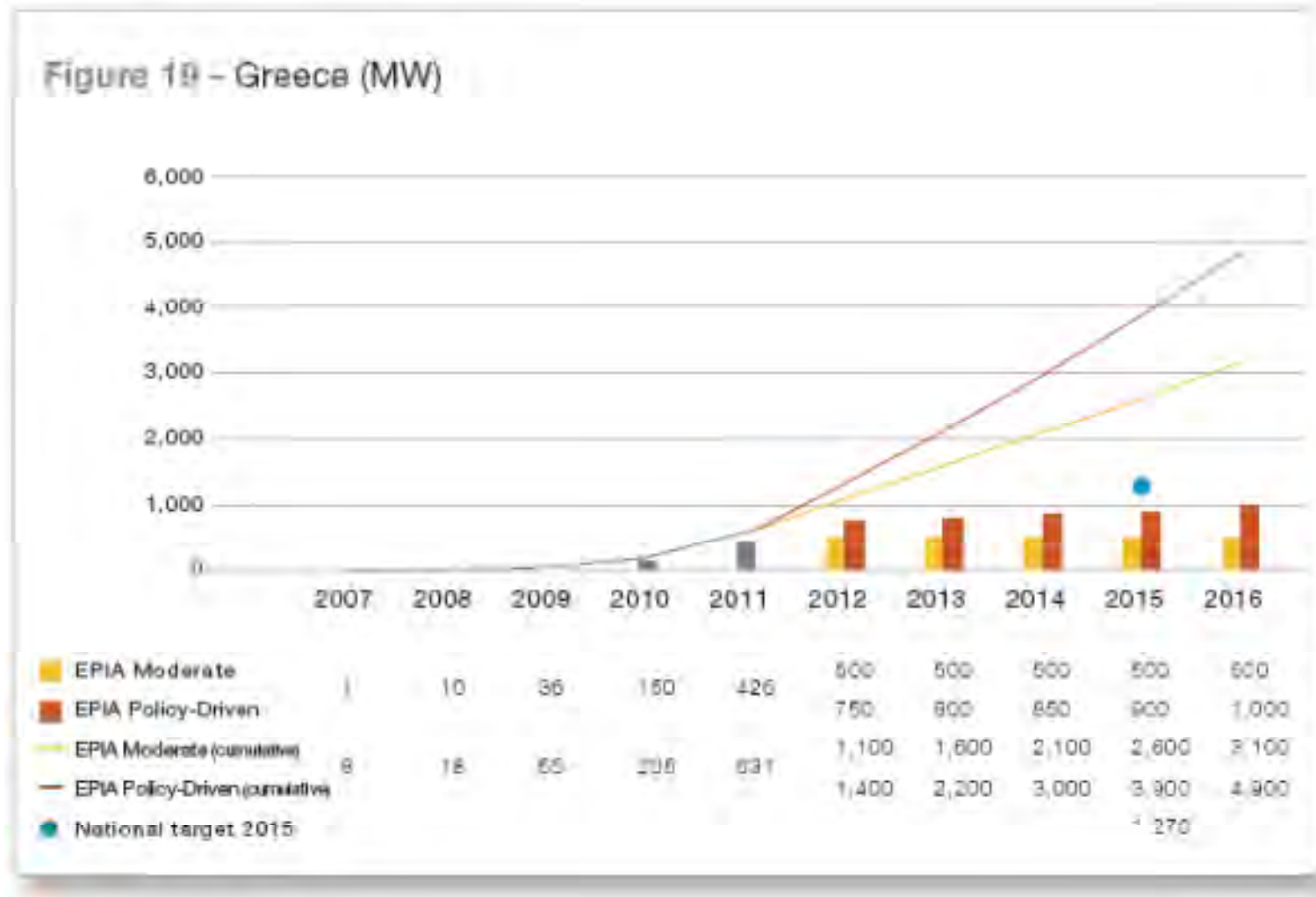
Market Statistics

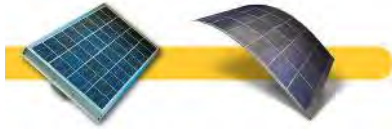
Market Segment Share Trends



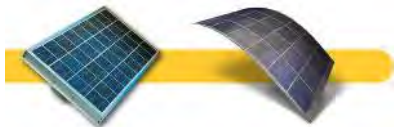


Market Outlook

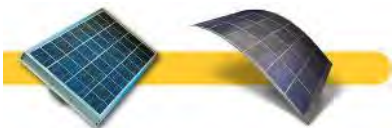




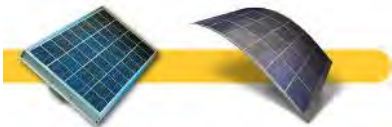
10kWp residential rooftop, Athens



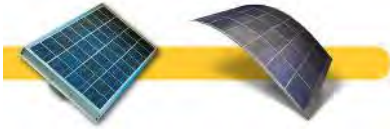
5kWp Façade, Athens



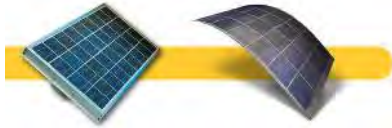
200kWp Industrial rooftop, Athens



100kWp tracking system, Kilis

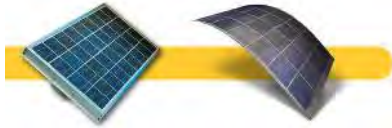


10MWp ground mounted park, Farsala



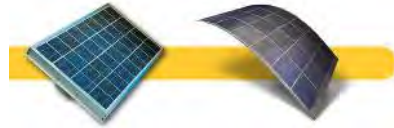
Mega Projects

- **Fast Track**
 - 200MWp – PPC Renewables
 - 131MWp – Solar Cells Hellas Group
 - 126MWp – Silcio
- **Helios Project (2-10GWp)**



Helios Project

- Capacity is not included in RES National Targets
- Produced energy to be exported (Germany?)
- Statistical or physical transfer
- Investors and tariff level TBD
- Technical and legislative issues to be resolved

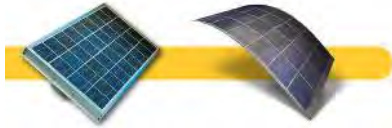


Helios Project: Grid Interconnections



Connection options:

- (a) Western Balkans
(existing – 150kW)
- (b) Eastern Balkans
(existing – 800MW)
- (c) Italy mainland
(existing – 500MW)
- (d) Adriatic Sea
(planned – 10GW)

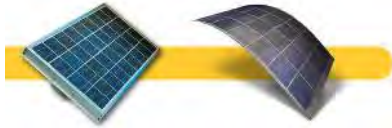


Production Facilities in Greece

Production Facility	Product	Capacity
Heliosphera	Thin Film Micromorph	60 MWp
Solar Cells Hellas	Wafers, Cells, Modules	80/80/80 MWp
Silcio/Piritium	Wafers, Cells, Modules	40/29/9.5 MWp
Exel Group	mc-Si Modules	50 MWp
Stel Solar	mc-Si Modules	10 MWp

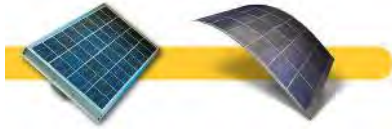
Total investments ~500M€, >200MWp FTE 8,300





Conclusions

- Despite financial turmoil, PV sector continues to grow – in Greece and internationally
- High FiT and solar irradiance lead to attractive ROI
- Residential PV sector grows fast, utility scale projects are planned
- Helios project could be one of the most important PV projects in Europe, leading to grid interconnections and high RES penetration on a European level
- Small industrial base exists in Greece, dealing with international competition



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Thank you for your attention!

