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SOLAR
Pure Energy

HOW THE SECTOR SHALL ADAPT TO THE NEW CIRCUMSTANCES

- KEY NOTES ON THE ROMANIAN PV MARKET

Bucharest, 19th of November 2013

01 | MARTIFER SOLAR

At a Glance | Worldwide Presence | Core Business | Key Achievements

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HEADQUARTERS
Oliveira de Frades,
Portugal

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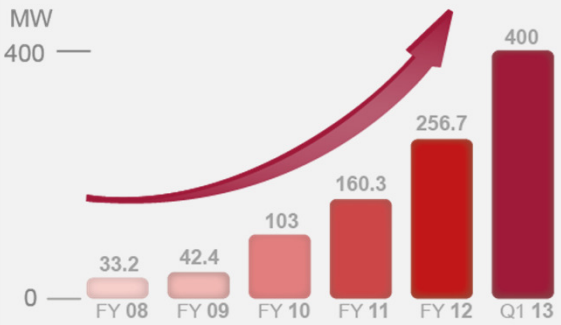
AT A GLANCE



- **Fully-integrated *global player* in the photovoltaic market**
- **Proven *track record* of 400MW implemented worldwide**
- **5 consecutive years of positive results, unequal in the sector's trend**
- **243 M€ in current backlog**
- **Ranked in the Top EPC Contractor list**

IHS Survey among 650 EPC contractors: 8th largest European and 31st on a global level

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WORLDWIDE PRESENCE

EUROPE

Portugal
Spain
Italy
Greece
Belgium
France
Czech Republic
Slovakia
United Kingdom
Germany
Romania
Ukraine

NORTH AMERICA

USA
Canada
Mexico

SOUTH AMERICA

Chile
Brazil
Ecuador

ASIA

India
Singapore
Japan

AFRICA

Cape Verde
Mozambique
South Africa

MIDDLE EAST

United Arab Emirates

True Global Presence | 25 countries across 4 continents

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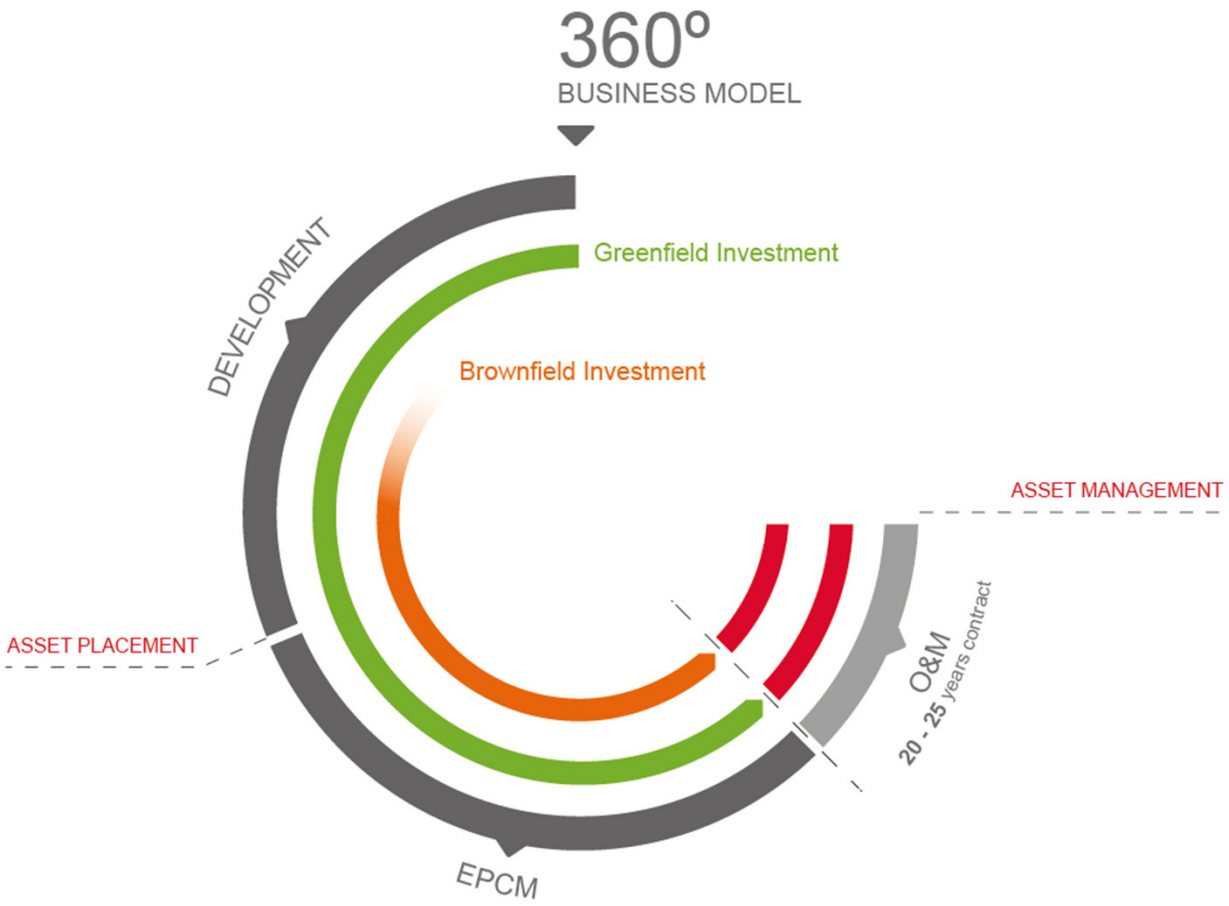
CORE BUSINESS

BUSINESS UNITS

DEVELOPMENT

ENGINEERING, PROCUREMENT
AND CONSTRUCTION MANAGEMENT

OPERATION & MAINTENANCE



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KEY ACHIEVEMENTS

475 Projects done in 4 continents
Asia | Europe | America | Africa

One of Latin America ‘s largest PV projects
Mexico, 38,6 MWp

One of Africa’s largest PV projects
Santiago and Sal, CAPE VERDE 7.5 MWp

One of Asia’s largest PV plants
Gujarat, INDIA 25 MWp

Highest PV installation in the world
Torre de Cristal, SPAIN

Europe
280 MW completed in 373 projects across 11 Countries

44 MW in North America
2 GW under development






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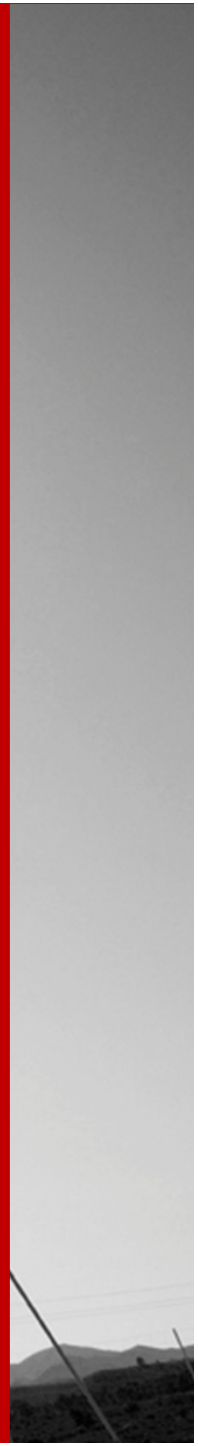
02 | ROMANIAN PV SHORT STORY

From boom to uncertainty - What happened?

MORATALLA
Murcia,
Spain



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FROM BOOM TO UNCERTAINTY – WHAT HAPPENED?

End of 2011

Stabilization of the promotion system for electricity produced from renewable sources, **confirming that 6 GCs would be granted to new PV installations** (GEO 88/2011.10.19).

July 2012

Law 134/2012 confirms the full application of law 220/2008 as amended by GEO 88/2011, and goes further providing for the **stability of the promotion system (6 GCs) until the end of 2013**.

Romania ranks 13th in E&Y top that measures the market attractiveness for investments in renewable energy projects

Industry players believe that finally the necessary stability was brought to the renewable energy sector, creating the conditions for a strong and sustained growth of the PV in Romania

49 MW of projects connected to the grid

More than 3 GW of PV projects under development , most of them with connection approval (ATR)

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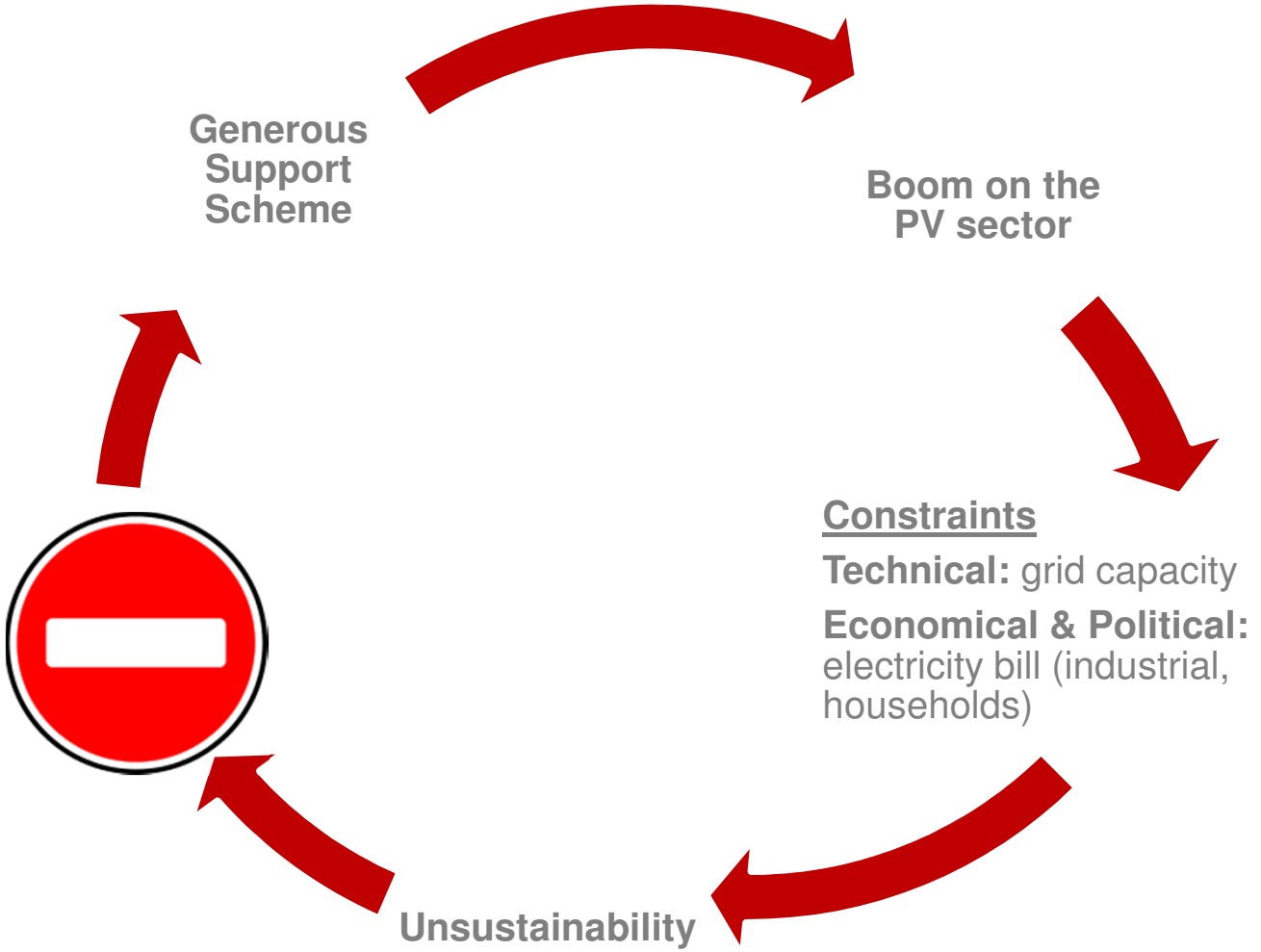
FROM BOOM TO UNCERTAINTY – WHAT HAPPENED?

2013

- During the first semester we have seen a significant increase of the projects under construction and grid connected.
- Rumors regarding possible changes in the renewables legal framework bring considerable concerns to the investors.
- GEO 57/2013 is enforced as of the 1st of July, bringing total uncertainty to the PV sector, as it opened the door for unpredictable revisions of the support scheme, as well to possible restrictions for new capacities to be installed.
- On the 29th of August, a draft proposal of Governmental Decision anticipates a reduction of 50% of the support scheme to PV

High uncertainty about the rules of the game/incentive scheme applicable for Q4 2013 and 2014

FROM BOOM TO UNCERTAINTY – WHAT HAPPENED?



More than 600 MW of PV projects installed

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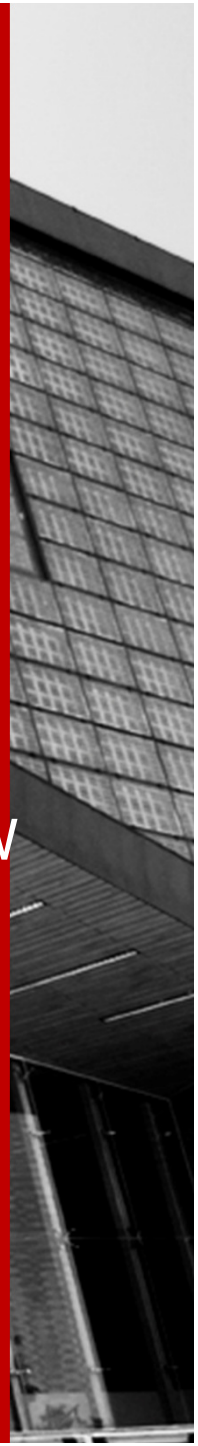
03 | PV GLOBAL MARKET OVERVIEW

ALCOBENDAS
Madrid,
Spain



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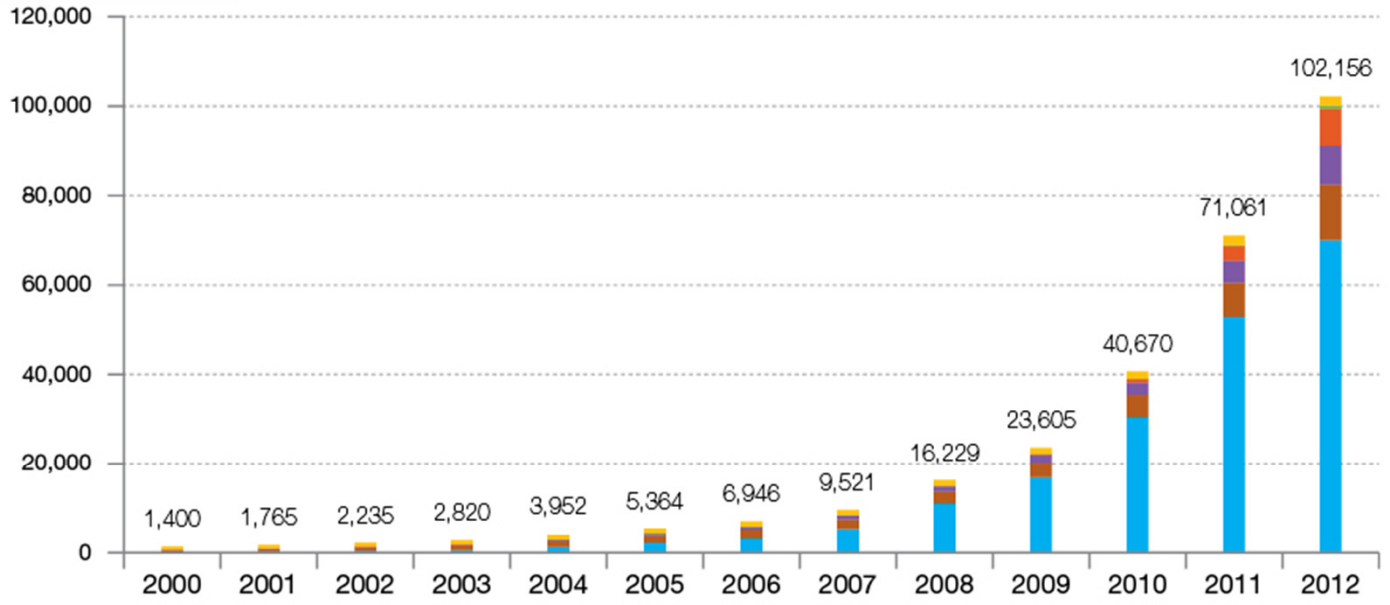
PV GLOBAL MARKET OVERVIEW

EVOLUTION OF GLOBAL PV CUMULATIVE INSTALLED CAPACITY 2000-2012 (MW)

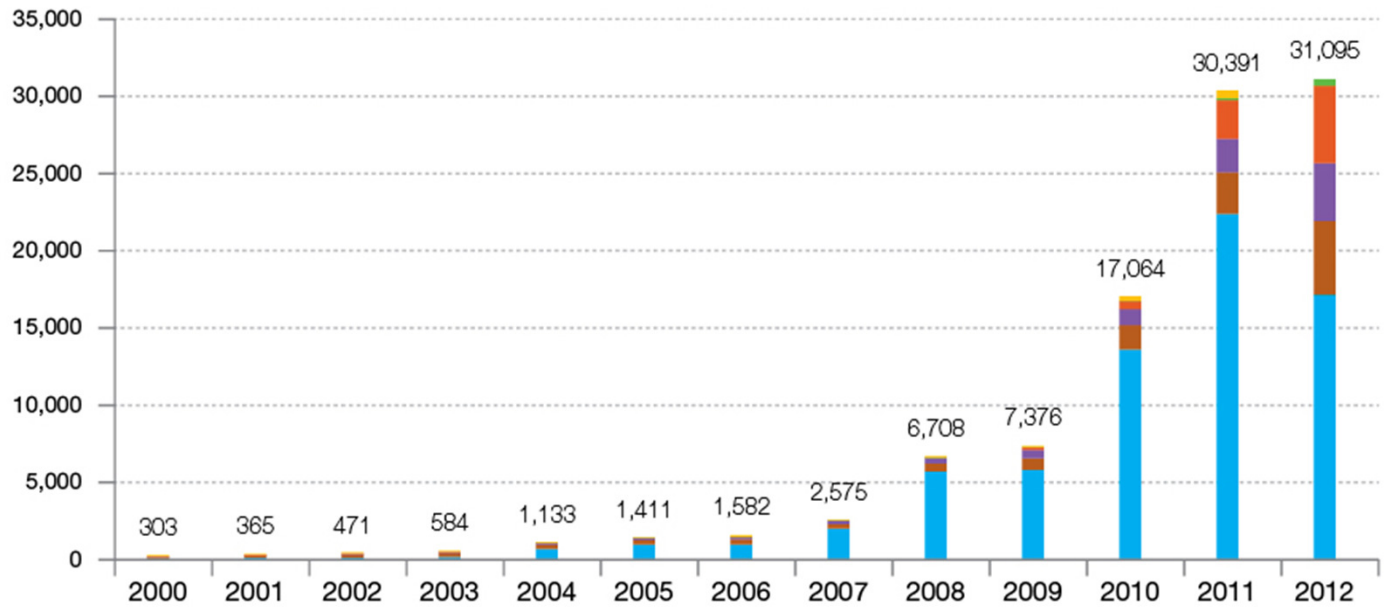


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ROW	751	807	887	964	993	1,003	1,108	1,150	1,226	1,306	1,590	2,098	2,098
MEA	n/a	n/a	n/a	n/a	1	1	1	2	3	25	71	192	601
China	19	24	42	52	62	70	80	100	140	300	800	3,300	8,300
Americas	146	178	225	290	394	501	650	863	1,209	1,752	2,780	4,959	8,717
APAC	355	495	686	916	1,198	1,500	1,825	2,096	2,631	3,373	4,956	7,628	12,397
Europe	129	262	396	598	1,305	2,289	3,281	5,310	11,020	16,850	30,472	52,884	70,043
Total	1,400	1,765	2,235	2,820	3,952	5,364	6,946	9,521	16,229	23,605	40,670	71,061	102,156

EPIA

PV GLOBAL MARKET OVERVIEW

EVOLUTION OF GLOBAL PV ANNUAL INSTALLATIONS 2000-2012 (MW)

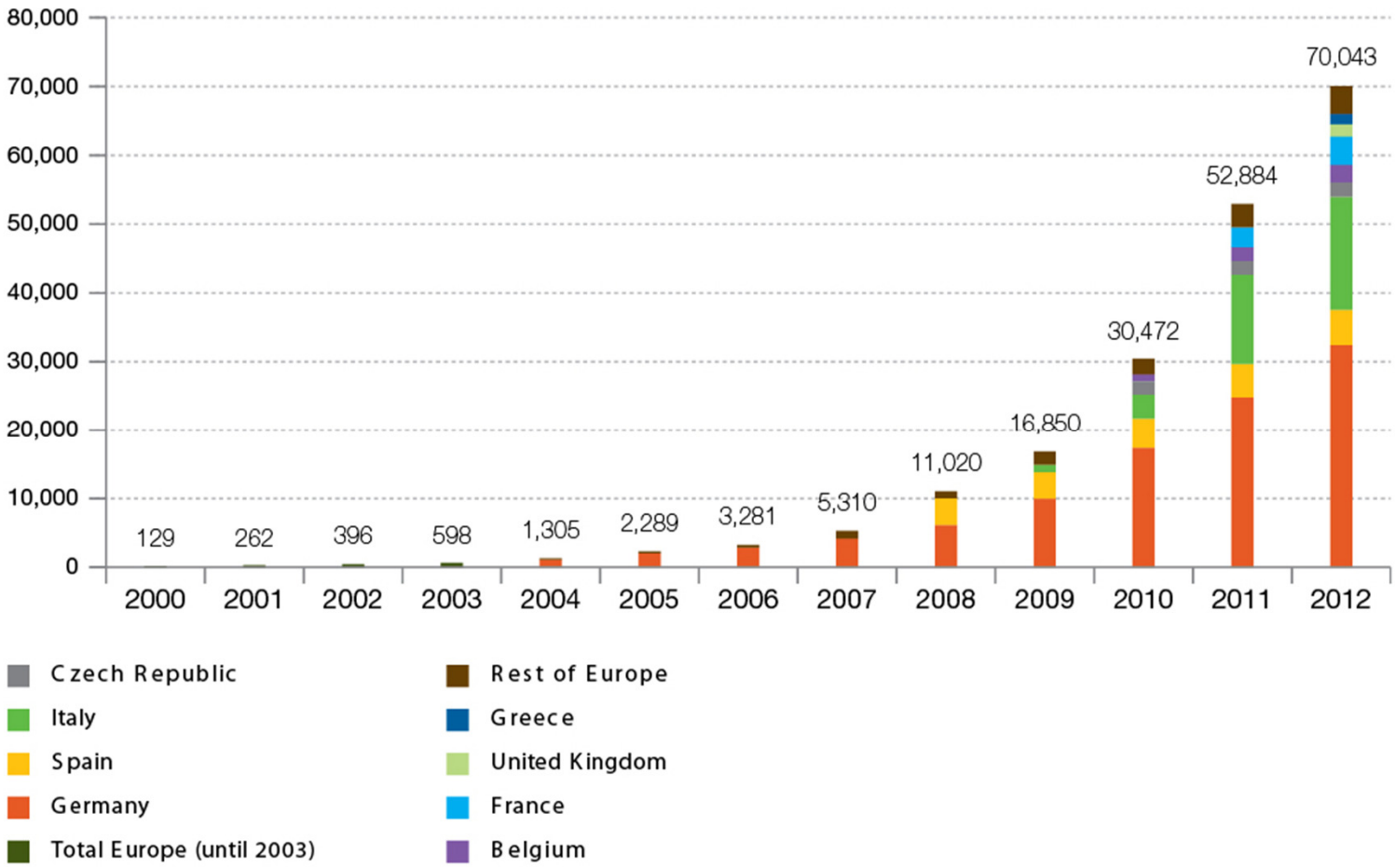


	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
ROW	88	56	80	77	29	10	105	42	76	80	284	508	-*
MEA	n/a	n/a	n/a	n/a	1	n/a	n/a	1	1	22	46	121	410
China	19	5	19	10	10	8	10	20	40	160	500	2,500	5,000
Americas	24	32	47	66	104	106	150	213	346	543	1,029	2,179	3,758
APAC	117	140	191	230	282	303	324	271	535	742	1,583	2,672	4,769
Europe	56	133	135	202	707	984	992	2,028	5,710	5,830	13,622	22,411	17,159
Total	303	365	471	584	1,133	1,411	1,582	2,575	6,708	7,376	17,064	30,391	31,095

EPIA

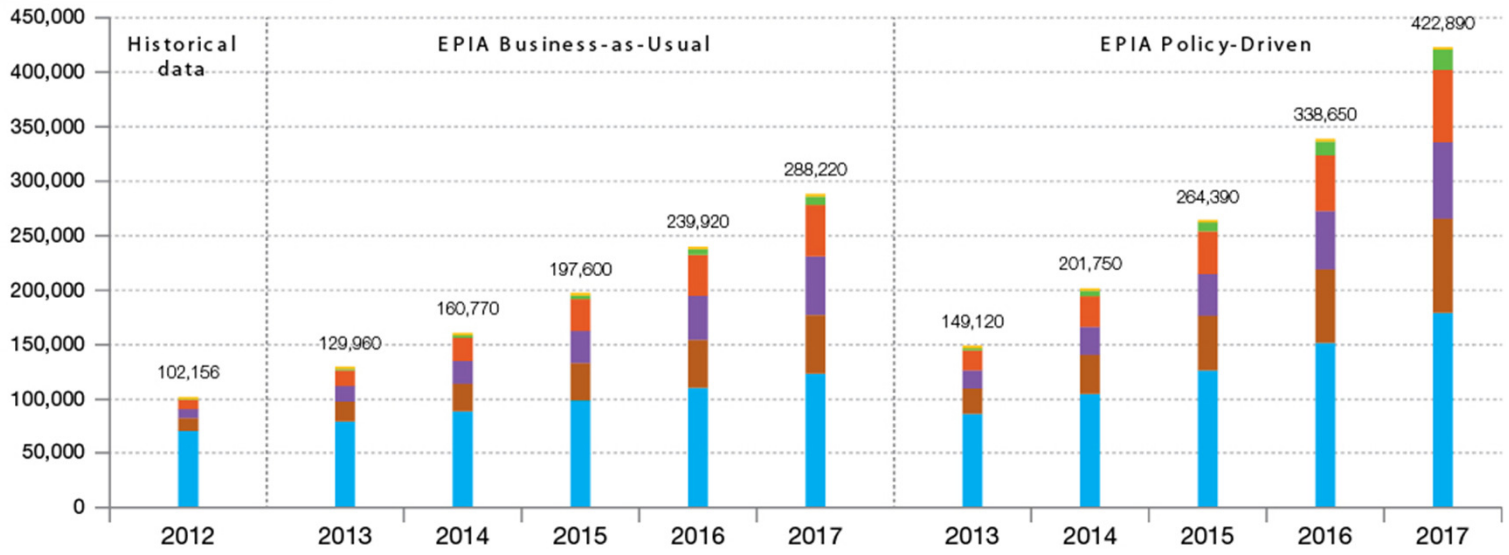
PV GLOBAL MARKET OVERVIEW

EVOLUTION OF EUROPEAN PV CUMULATIVE INSTALLED CAPACITY 2000-2012 (MW)



PV GLOBAL MARKET OVERVIEW

EVOLUTION OF GLOBAL PV CUMULATIVE INSTALLED CAPACITY PER REGION UNTIL 2017 (MW)



	2012	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
ROW*	2,098	2,098	2,098	2,098	2,098	2,098	2,098	2,098	2,098	2,098	2,098
MEA	601	1,260	2,180	3,480	5,380	7,780	2,100	4,800	8,200	12,700	18,750
China	8,300	14,300	21,300	29,300	37,300	47,300	18,300	28,300	39,300	51,300	66,300
Americas	8,717	14,430	21,090	29,880	41,090	53,820	16,810	25,900	38,400	53,790	70,380
APAC	12,397	18,130	25,060	33,720	43,230	53,590	22,990	35,470	49,760	66,760	85,810
Europe	70,043	79,750	89,040	99,120	110,830	123,640	86,820	105,180	126,630	152,010	179,560
Total	102,156	129,960	160,770	197,600	239,920	288,220	149,120	201,750	264,390	338,650	422,890

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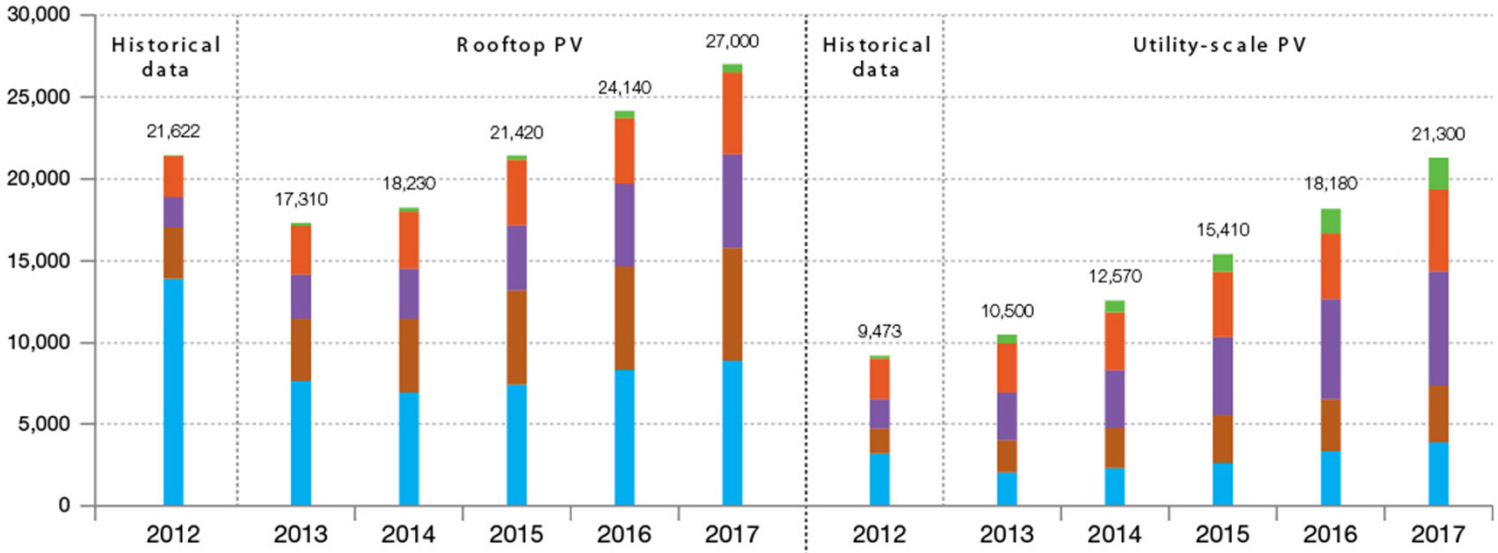
PV GLOBAL MARKET OVERVIEW

GLOBAL ROOFTOP AND UTILITY-SCALE PV MARKET BY REGION UNTIL 2017 – EPIA BUSINESS-AS-USUAL SCENARIO (MW)



	2012	2013	2014	2015	2016	2017	2012	2013	2014	2015	2016	2017
MEA	47	150	200	250	410	480	362	510	720	1,050	1,490	1,920
China	2,500	3,000	3,500	4,000	4,000	5,000	2,500	3,000	3,500	4,000	4,000	5,000
Americas	1,872	2,710	3,050	3,980	5,070	5,750	1,886	3,010	3,610	4,810	6,140	6,980
APAC	3,225	3,780	4,500	5,730	6,290	6,850	1,544	1,950	2,440	2,930	3,220	3,510
Europe	13,977	7,680	6,980	7,460	8,370	8,920	3,182	2,030	2,310	2,620	3,340	3,890
Total	21,622	17,310	18,230	21,420	24,140	27,000	9,473	10,500	12,570	15,410	18,180	21,300

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PV GLOBAL MARKET OVERVIEW

- In 2012 the European PV market declined for the first time compared to the previous year, and most probably in 2013 the majority of the new PV capacity will be installed outside Europe.
- For the second year in a row, in 2012 PV was ranking first as the most important new source of electricity generation in Europe.
- We can estimate that according with the capacities installed by the end of 2012, PV can feed roughly 2.6% the electricity demand in Europe and 0.6% globally.
- Over the last 12 years PV positions itself in the top three technologies in Europe as to the net generation capacity added, following immediately after Gas and Wind.
- PV is still highly dependent on the existing promoting schemes.

Remarkable growth of PV under a context of economic and financial crisis, political and regulatory instability definitely confirms PV as a solid source of safe and clean power

04 | MARKET TRENDS

PV Market Drivers | Regulatory/Policy Trends | Mainstream Technology

HALCHIU
Brasov,
Romania

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PV MARKET DRIVERS

1

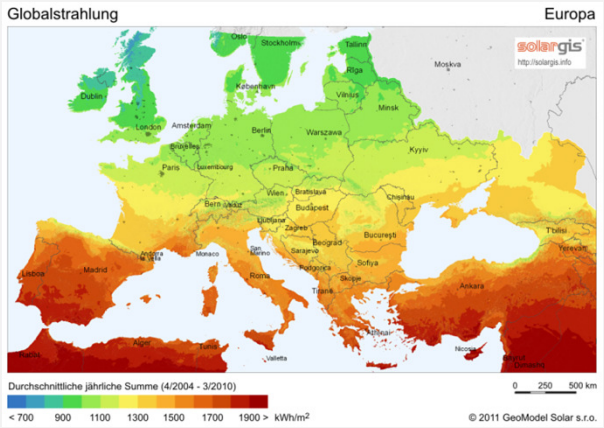
❑ Attractiveness of PV for the country

- Resource – Solar radiation
- Competitive levelized cost of energy (LCOE)

2

❑ Attractiveness of the country for the investors

- Country risk perceived
- Regulatory stability
- Attractiveness of the support scheme



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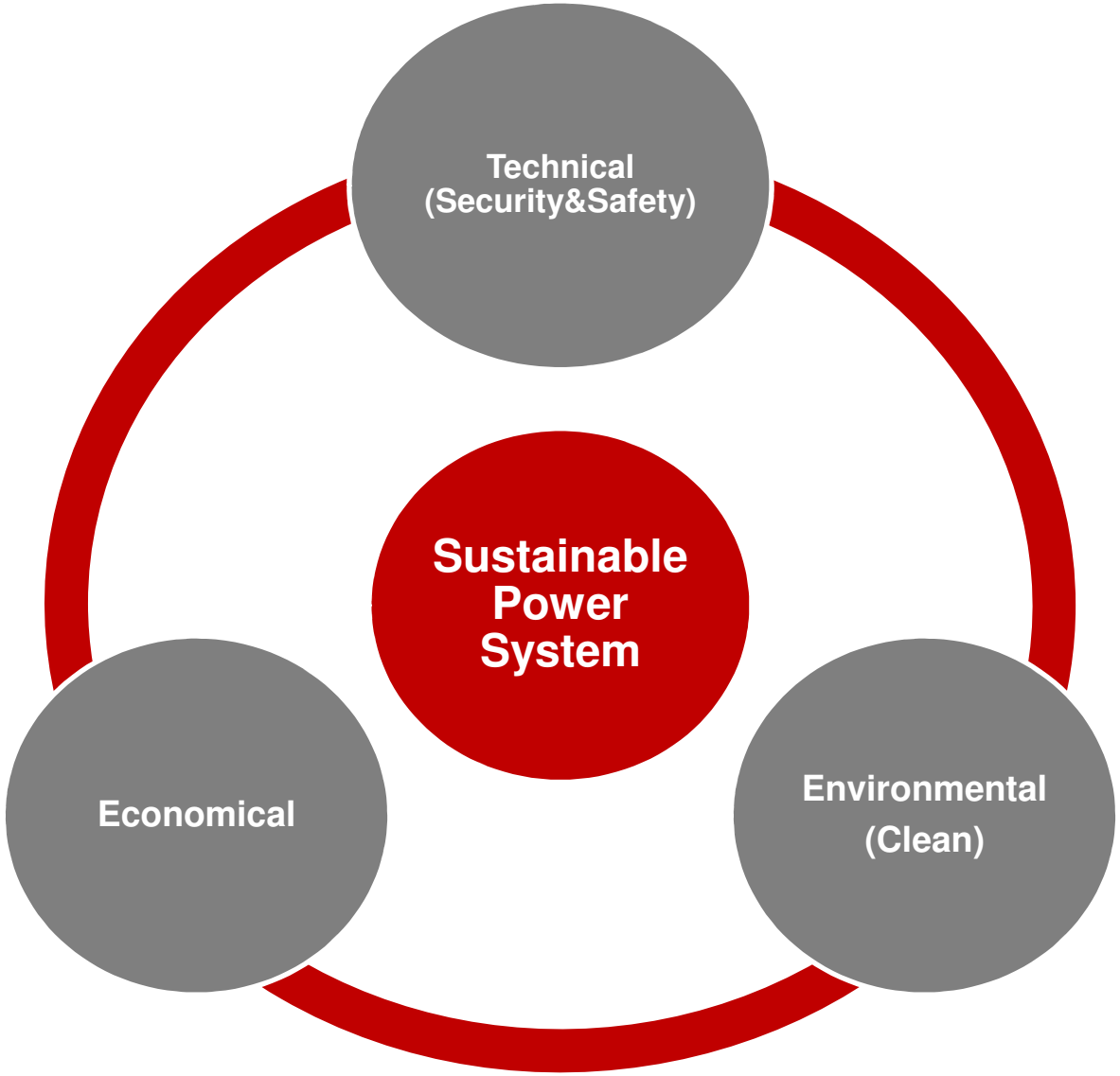
REGULATORY/POLICY TRENDS

Current economic crisis accelarated the debate over the need for a more sustainable power system



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REGULATORY/POLICY TRENDS

Sustainable and Cost-Effective Development	• Definition of **transparent**, **predictable** and **flexible mechanism** that allow the support scheme revision following to changes on the production/investment costs, avoiding overcompensation. • Reduction of the impact of the production from RES on the electricity bill
Energy Security of Supply	• **Non-discrimination** and **increasing integration** of RES producers in the power system. • Development of **smart grids** and investment on the **storage capabilities** in the medium/long term. • Collaboration among TSOs, DSOs and producers (conventional and renewable), to reach cost optimal solutions.
Commitment with Safe/Clean Sources of Energy and with Carbon Emissions Reduction	• **Decarbonization** of Europe

Various factors contribute to the importance of the PV in the energy mix

- **Mature technology with proven track**
- **Clean & Safe**
- **Reduced environmental impact**
- **Fast deployment**
- **Production profile compatible with peak hours consumption**
- **Decentralized power generation (self-consumption/net metering)**
- **Falling production costs are increasing its competitiveness compared to conventional and other renewable sources**

05 | ROMANIA – ADJUSTMENT TO NEW CIRCUMSTANCES

MAGURELE
Ploiesti
Romania

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ROMANIA – ADJUSTMENT TO NEW CIRCUMSTANCES

SECTOR AXIS	ADJUSTMENTS
Policy/Regulatory Framework	• Transparency/predictability • Moving to a more cost effective support scheme • Promotion of self-consumption projects (both residential and industrial) • Effective reduction of the speculative approaches by granting connection approvals only to players that clearly have funds committed to the projects
National Electrical System	• Revision of the power supply structure and strategy for the next years • Increase the integration of RES in the electrical system, reducing the respective impact on the grid stability and related balancing costs • Definition of preferential areas for the connection of new capacities according with the grid condition and demand
Industry Players	• Contractors will have to design and build cost effective systems, minimizing the cost of the electricity produced (LCOE) over the lifetime of the project. • On the investors side the balance between the maximization of the performance of the plant and minimization of its costs (EPC/O&M) will be key for the financial feasibility of the projects
Financiers	• Proven stability of the regulatory framework and a more favorable economic environment may increase the appetite of the banks to finance the sector and to decrease the equity requests (ml term) • Alternative sources of financing such as investment/pension funds are likely to gain more importance under a stable regulatory environment
Country/Political Commitment	• Continuous support to renewable energy production is foreseen, backed by the expected reinforced commitment from EU, being the sustainability of the support schemes a top priority

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CONTACTS

THANKS!

MULTUMESC!

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www.martifersolar.com