

An overview of the EU PV Markets and their 2020 PV Targets



Guess what... does efficiency really matters ?



What is the maximum efficiency of PV modules today ?

~ 20 % (Cristalline Silicon best of its class in 2010)

So low...

What is the average efficiency of the engine of a standard car ?

~18 to 25 %

What is the main difference ?

Oil is a finite resource, Sun is not...

Global Market Outlook

World cumulative PV power installed

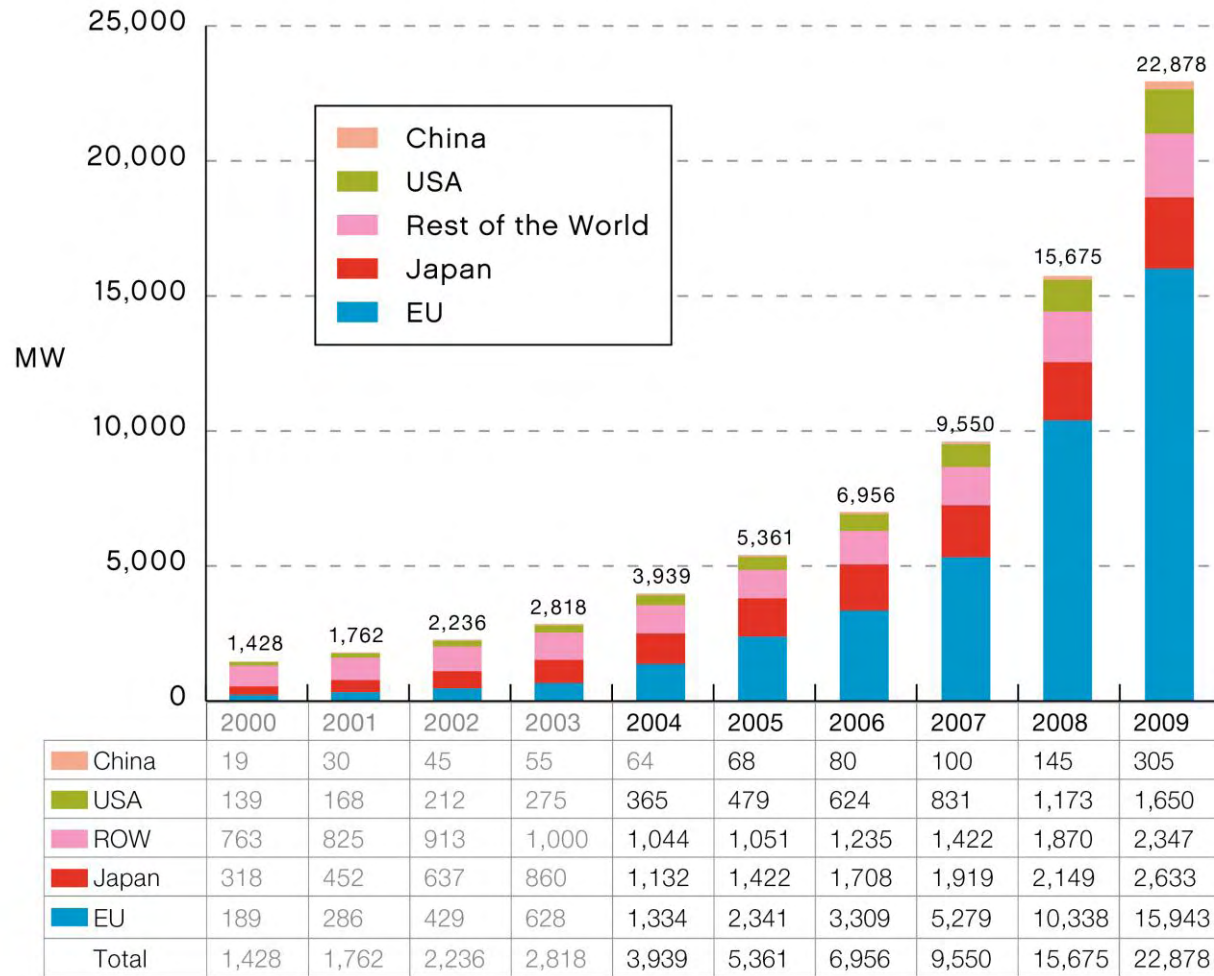


Figure 1 - Historical development of World cumulative PV power installed in main geographies

Regional PV distribution (policy-driven)

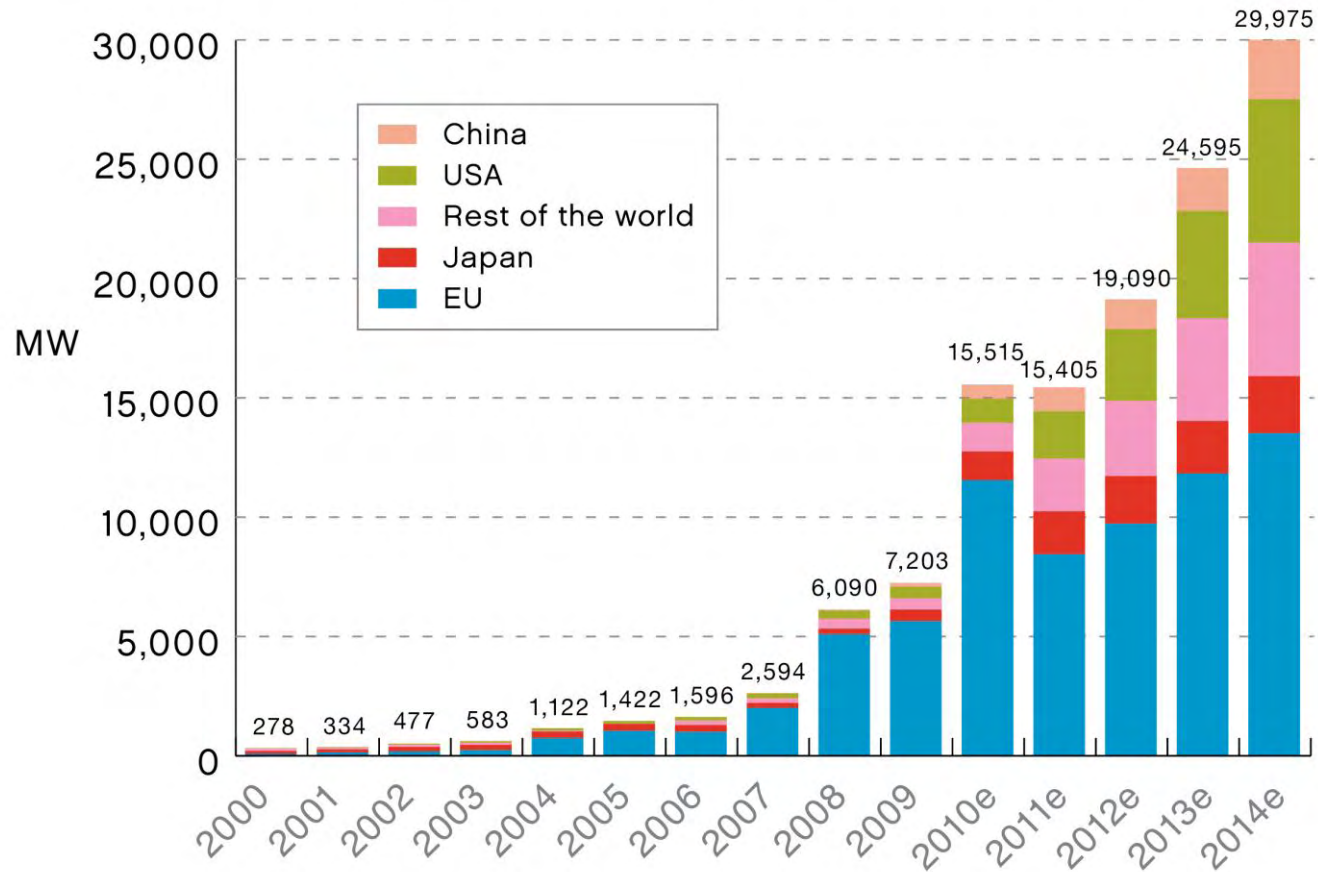


Figure 5 - Regional PV distribution in the World (Policy-Driven scenario)

Some key markets

2010 Market compared to the EPIA's Global Market Outlook 2010-2014:

Position (EU)	Country	2009 GW	2010 Estimates GW
1	Germany	3806	6500-8000
2	Italy	711	1500-2000
3	Czech Republic	409	500-1000
4	France	185	500-700
5	Belgium	292	300-400
6	Spain	Almost Dead	100-200
7	Greece	36	100-115
8	UK	< 10	40-60
9	Portugal	34	30-50
++	Austria	20	?

Industry targets for EU

Short term forecast Vs. Industry Vision

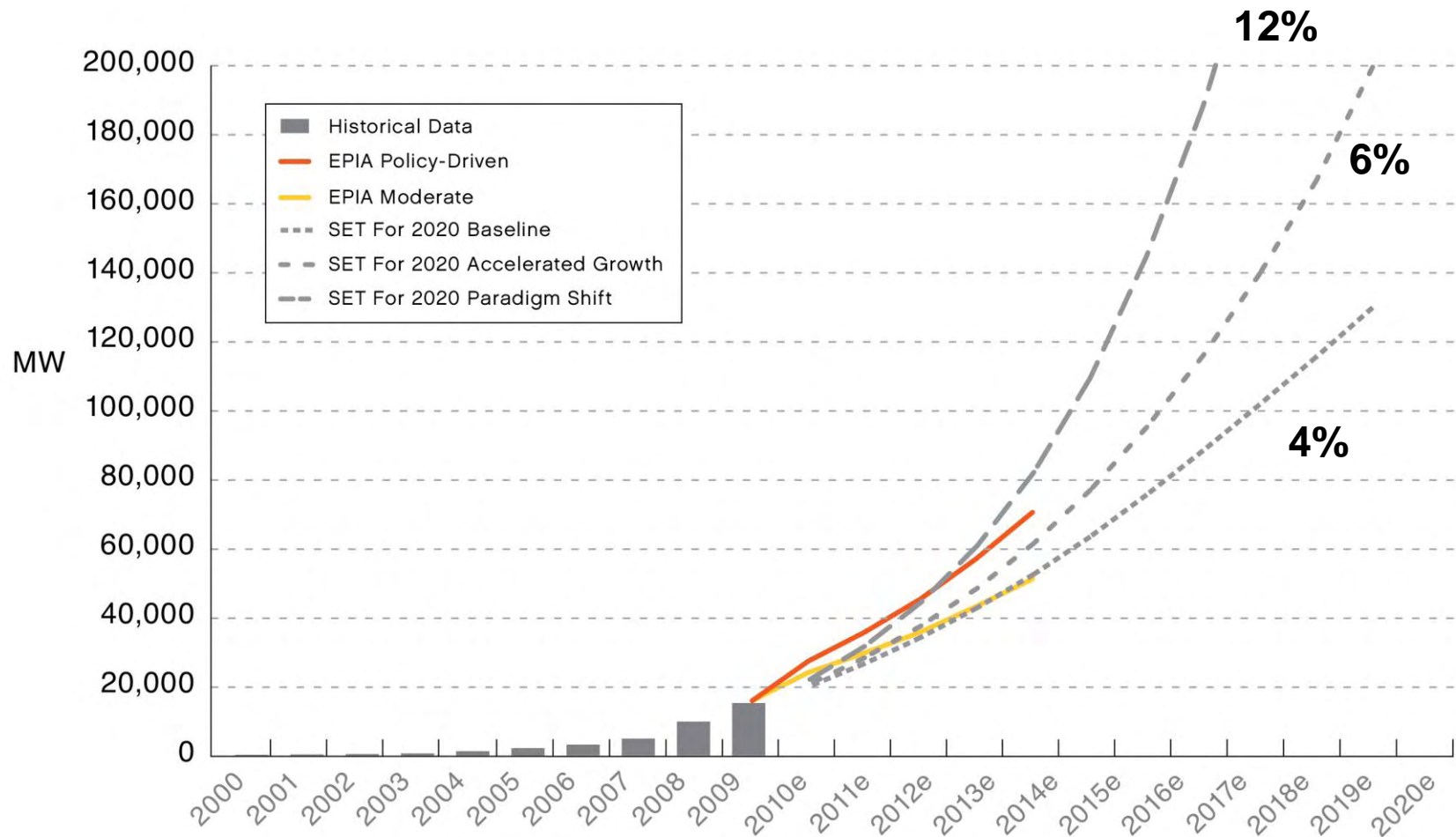
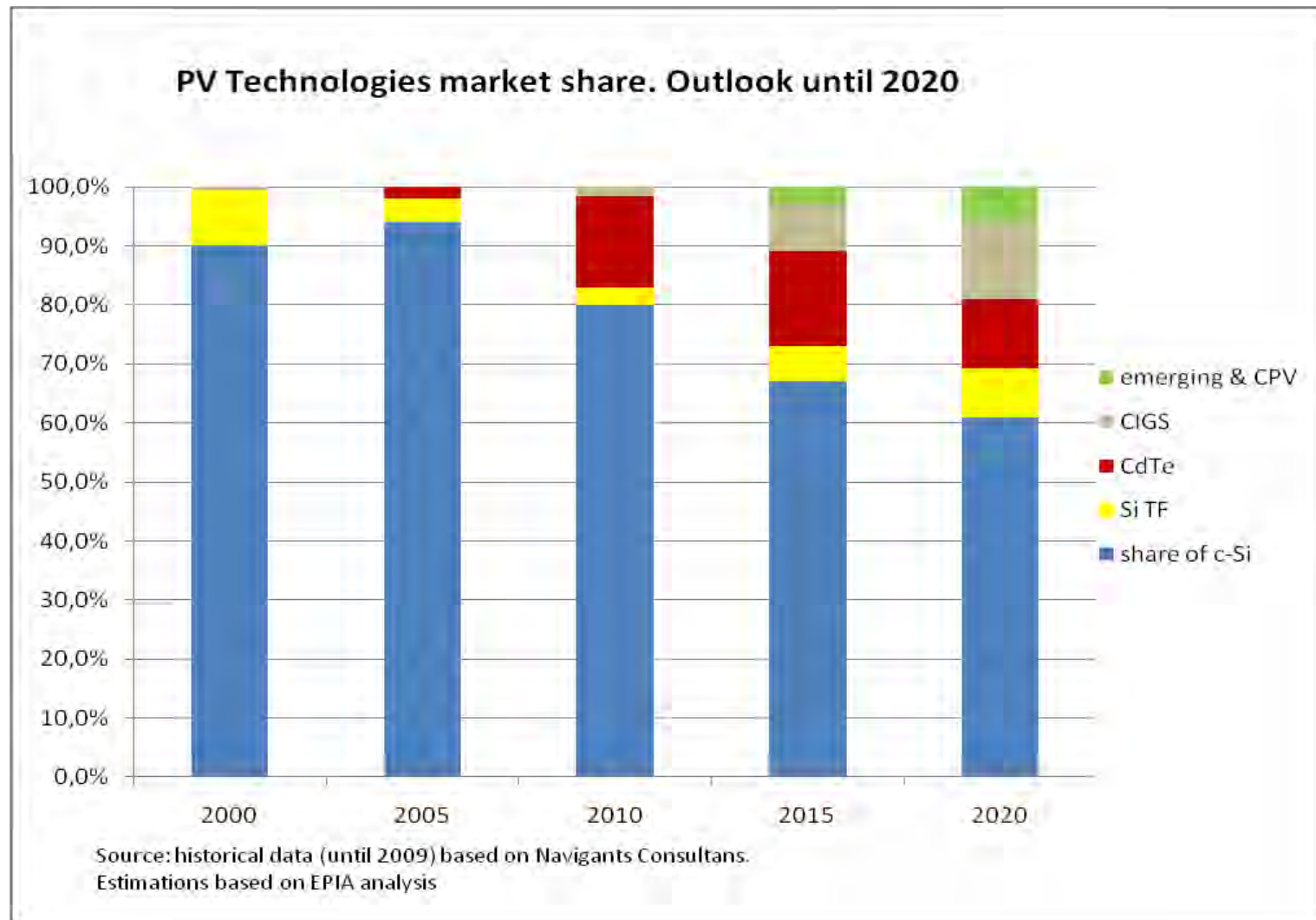


Figure 18 - Market forecasts compared to “SET For 2020” targets

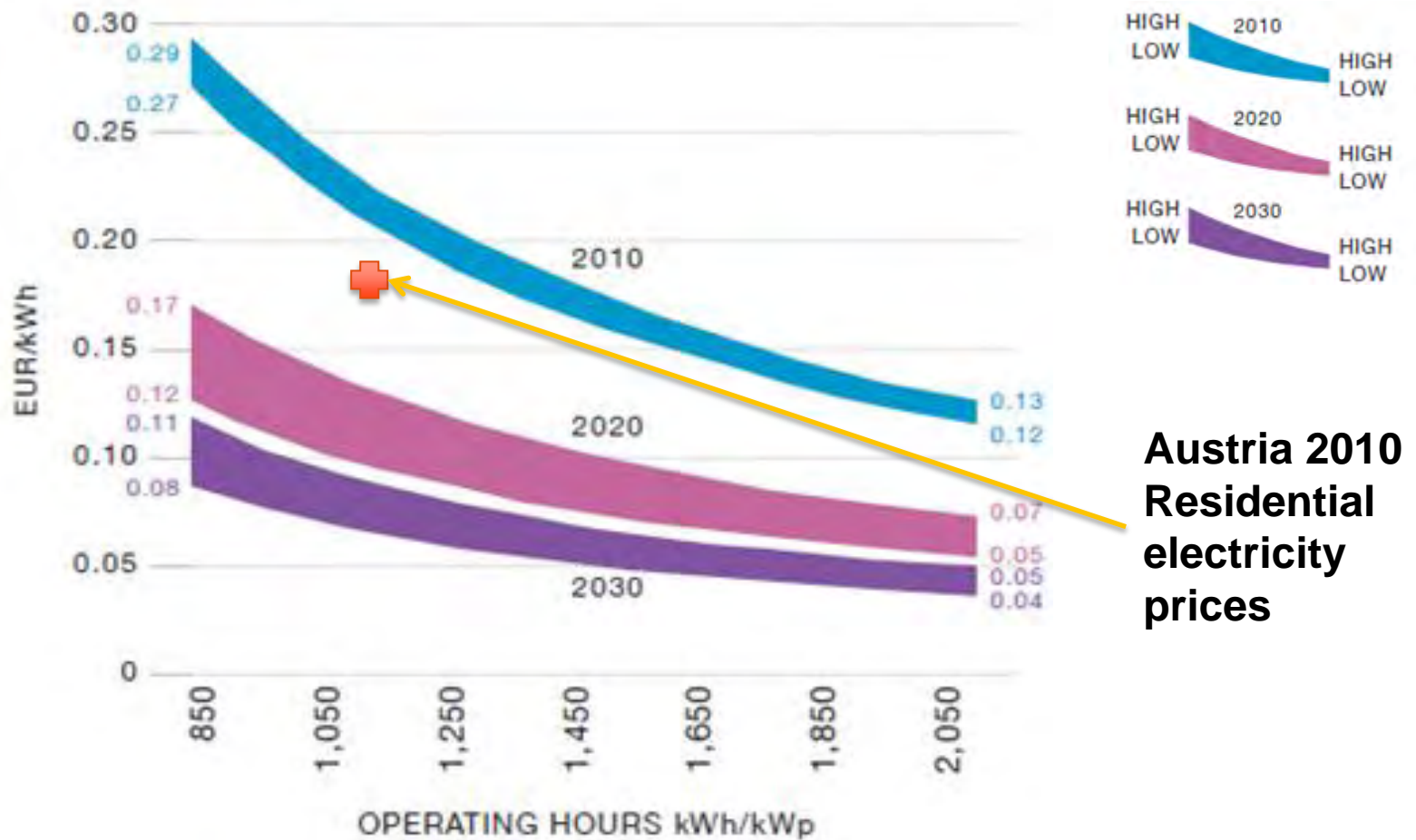
www.setfor2020.eu

Technology and costs

PV technologies evolution until 2020



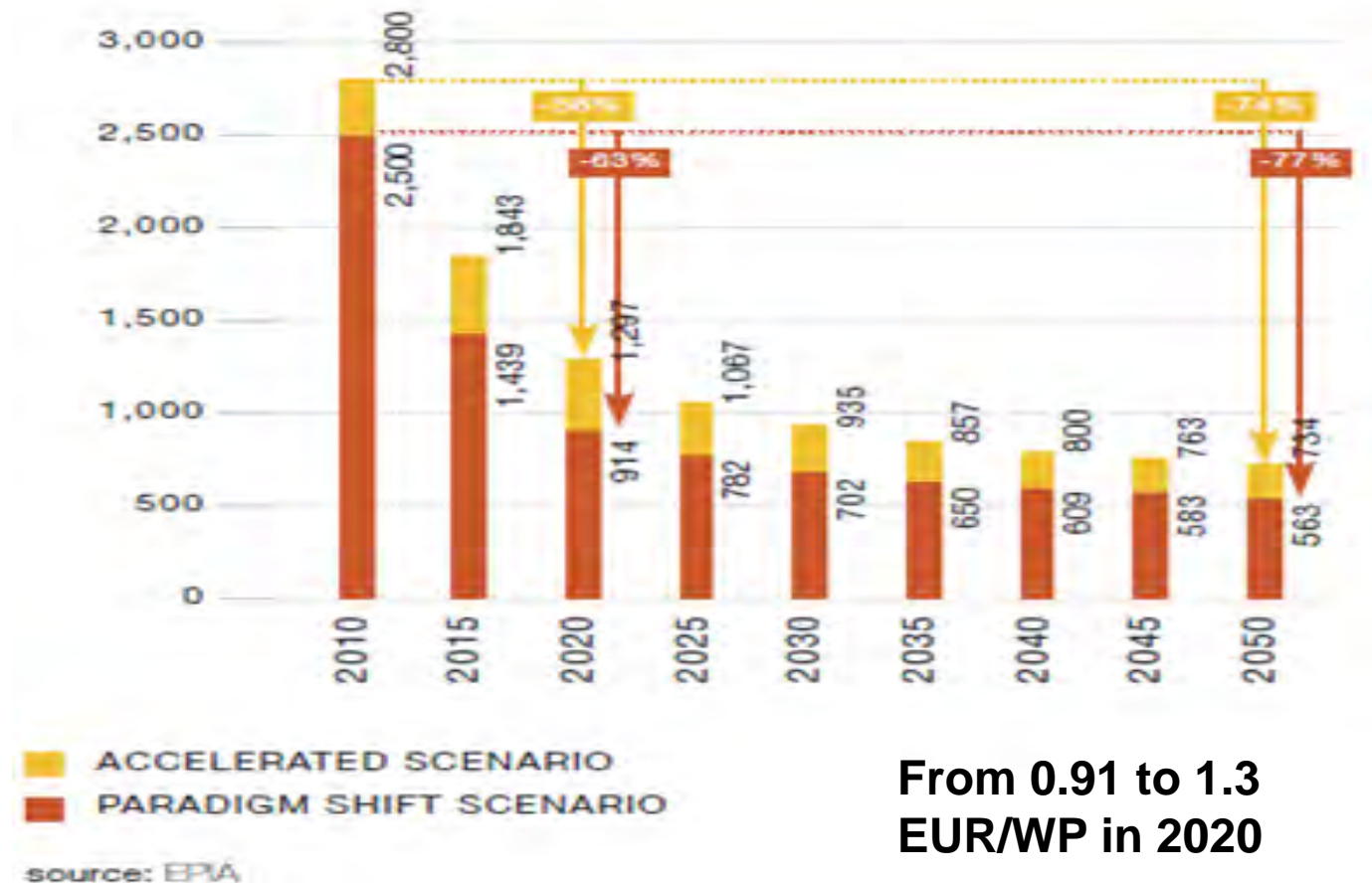
- LCOE is the best way to compare PV costs with conventional energy sources.



**Austria 2010
Residential
electricity
prices**

A target for PV electricity prices

- Current prices Q3 2010 in most competitive market for large ground mounted installations



**From 0.91 to 1.3
EUR/WP in 2020**

National Renewable Energy Action Plans

PV in Austria
As of 27 Octobre 2010



NREAPs Status – 27 October 2010

- **National Renewable Action Plans**
- 20 % of Renewable Energy Sources in the primary energy mix in EU in 2020
- Targets are defined per country. **AUSTRIA: 34 % (70% electricity)**
- Technology choice is free at country level

20 + 20 + 20

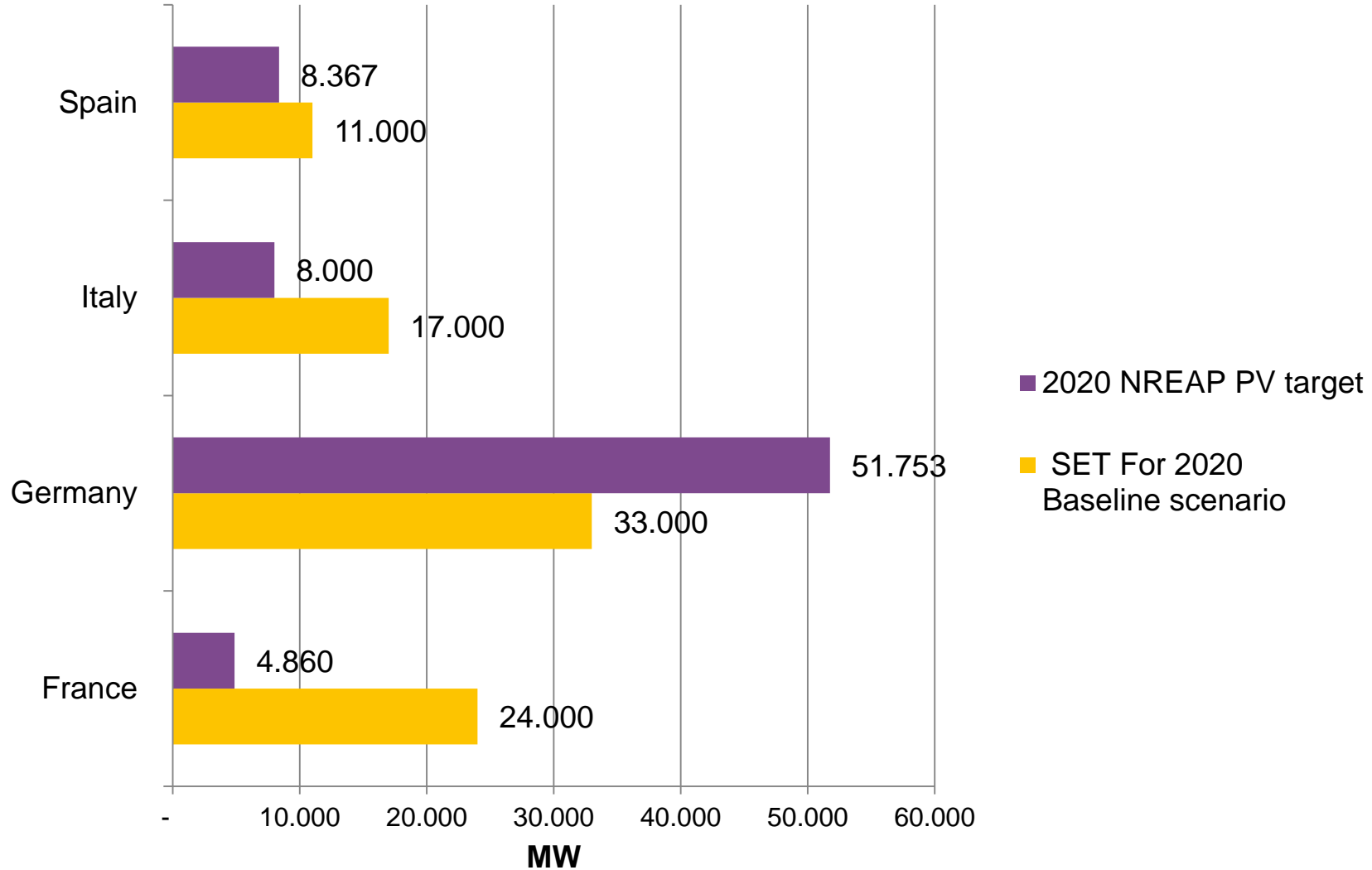
- **Potential for PV is always underestimated** (in 97' the 2010 target for PV was 3GW)
- Not a sunny country ? Germany produces in average 970 kWh/Kwp and Austria 1105 kWh / year with the same installation. 14% more
- What is the PV LCOE in Austria ? Between 22 and 24 Cts / kWh in 2010; below 14 cts in 2020.
- What is the average price of residential electricity ? Around 18 cts
- Could grid parity be reached before 2015 for residential customers?

NREAPS – National PV Target (indicative)

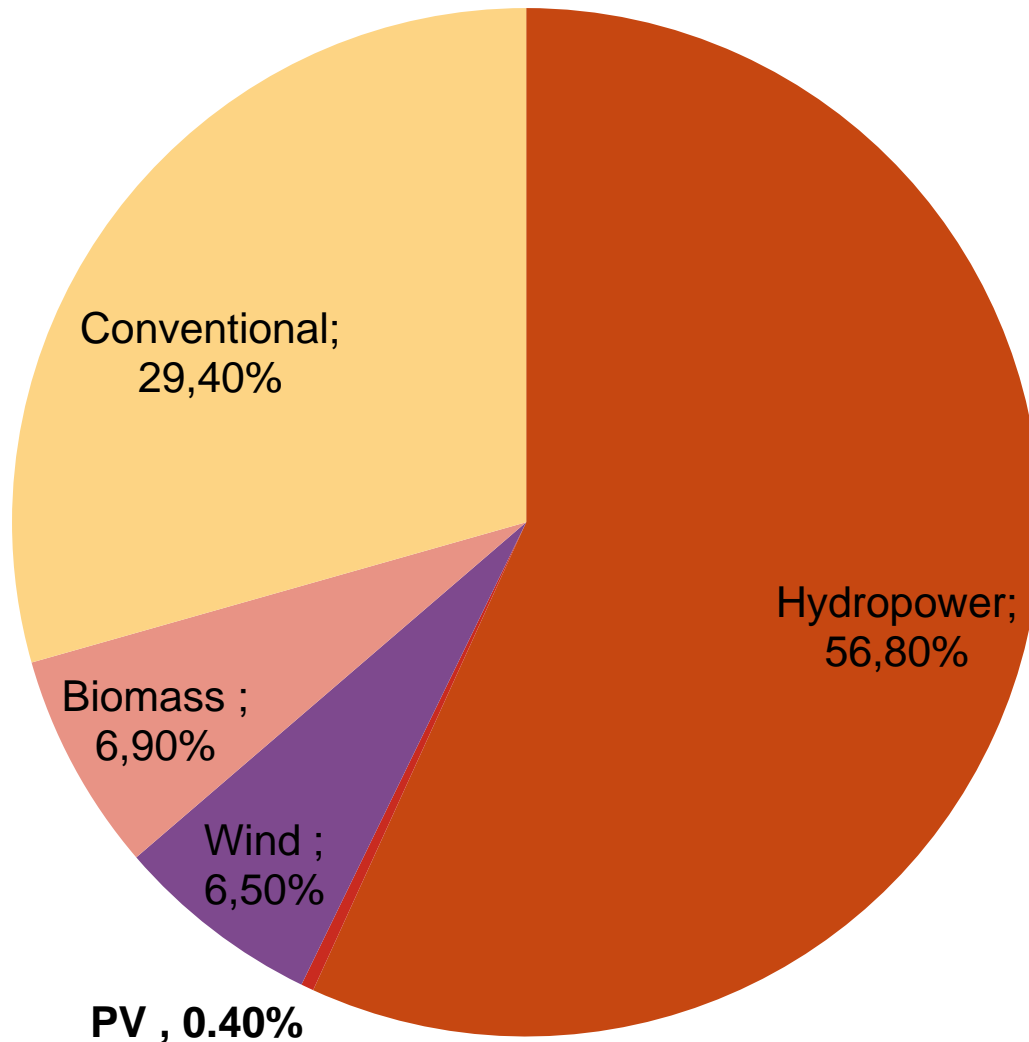
2020	Cumulative PV Target (MW)	Average annual Market range 2011 – 2020 (MW)	As % of Electricity consumption
Austria	322	32 MW	0,4%
Bulgaria	303		1,2%
Cyprus	192		3,9%
Czech Republic	1.695	5	2,1%
Denmark	6		0,0%
Finland	10		0,0%
France	4.860	300 - 500	1,1%
Germany	51.753	3000 - 4000	7,4%
Greece	2.200	~200	4,2%
Ireland	5		0,0%
Italy	8.000	500 - 600	2,6%
Latvia			0,1%
Lithuania	10		0,1%
Luxembourg	113		1,3%
Malta	28		1,4%
Netherlands	722		0,4%
Portugal	1.000	60 - 100	2,3%
Romania	260		0,4%
Slovakia	300		0,9%
Slovenia	139		0,9%
Spain	8.367	400 - 500	3,8%
Sweden	8		0,0%
United Kingdom	2.680	230 - 280	0,6%
TOTAL EU (23)	82.673	5,500 – 6,000	2,6%

Perception: PV Potential largely underestimated (in 97' the 2010 target for PV was 3GW)

2020 NREAPs PV Targets vs. EPIA SET For 2020 Baseline scenario (Tier 1 countries)



Austria - Power Generation in 2020



Official target:

0,4 % 322 MW

EU NREAP average

2,6 % 1750 MW

Industry baseline

4% 2970 MW

Industry Accelerated

6% 4045 MW

Industry Paradigm Shift

12% 8090 MW

Room for higher targets

Perception: PV Potential largely underestimated (in 97' the 2010 target for PV was 3GW)

3 pillars for a successful market development

- **1 - A sustainable, market driven, support scheme**
 - Feed-in tariffs valid for 15 or 20 years
 - Paid by all electricity consumers
 - Reasonable return on investment (6-10%)
 - Adjustable on a regular basis to follow system prices evolution
 - Fine tuning can help network integration (auto-consumption, storage incentives...)
 - Predictability
- **2 - Easy and transparent administrative process**
 - One-stop shop
 - Fast and transparent
 - Avoid additional costs that require higher FiT for the same return
- **3 – Fast and efficient grid connection schemes**
 - Fast and transparent
 - Low additional costs for the investor
 - Priority access to the grid for RES

Thank you for your attention

More info available in the EPIA's Global Market Outlook 2010-2014



www.epia.org

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