European Commission

SET PLAN 2015

How do costs affect PV deployment in EU28 ?

an example analysis with JRC-EU-TIMES

Context and objective

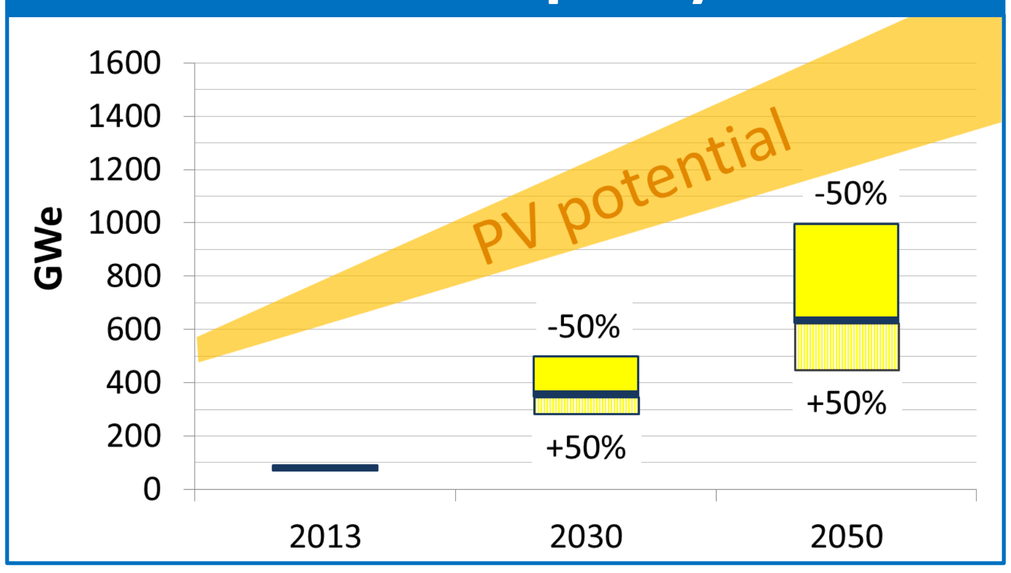
- Research and Innovation (R&I) play a crucial role in the Energy Union strategy – an integrated SET plan
- CAPEX and FOM can be crucial for RES-e deployment
- JRC-EU-TIMES can assess the long-term role of the SET Plan Energy technologies
- What is the impact of a 50% variation of CAPEX and FOM of PV systems (Photovoltaic) in a scenario with 80% CO_2 reduction in 2050 wrt 1990 ?

Method: JRC-EU-TIMES model

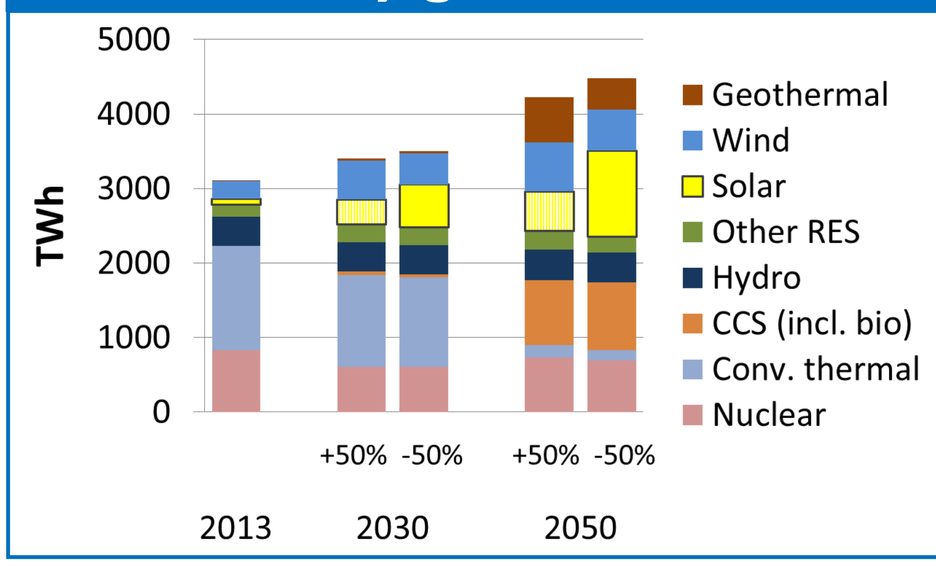
- Technology rich (300+) energy system model of the JRC representing EU28+ from 2005 to 2050
- Sectors included: energy transformation, electricity, industry, buildings and transport
- 24 time periods in the power sector to model competition between curtailment, transformation and storage in case of excess variable RES-e

• CAPEX Roof PV (€/kW)	2030	2050
- 50% variation	500	450
+50% variation	1500	1350

PV installed capacity EU28



Electricity generation EU28



Impact of PV cost on EU28

• PV Cost	+50%	-50%
PV installed capacity	-25%	+50%
PV % electricity 2030-2050	9-12%	16-26%
PV ann. investm. 2030-2050	20-32 B€	22-38 B€
Energy system cost	+8 B€	-12 B€

- Investing 12 B€ per year in PV R&D could be cost-effective if this reduces PV cost to 450-500 €/kW, cet. paribus
- PV cost is vital for PV deployment and for the energy system cost in a cost optimal low carbon energy system

https://ec.europa.eu/jrc

Contact Wouter Nijs
European Commission • Joint Research Centre
Institute for Energy and Transport • Energy Technology
Policy Outlook • Energy System Modelling
Tel. +31 (0)224 565481 • Email: JRC-EU-TIMES@ec.europa.eu

Joint Research Centre