

Joining forces in Europe in support of the global solar energy revolution

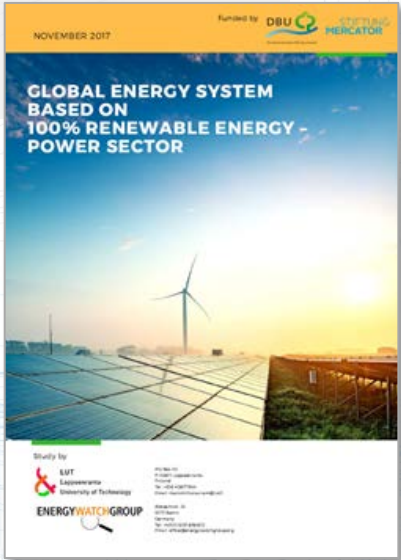
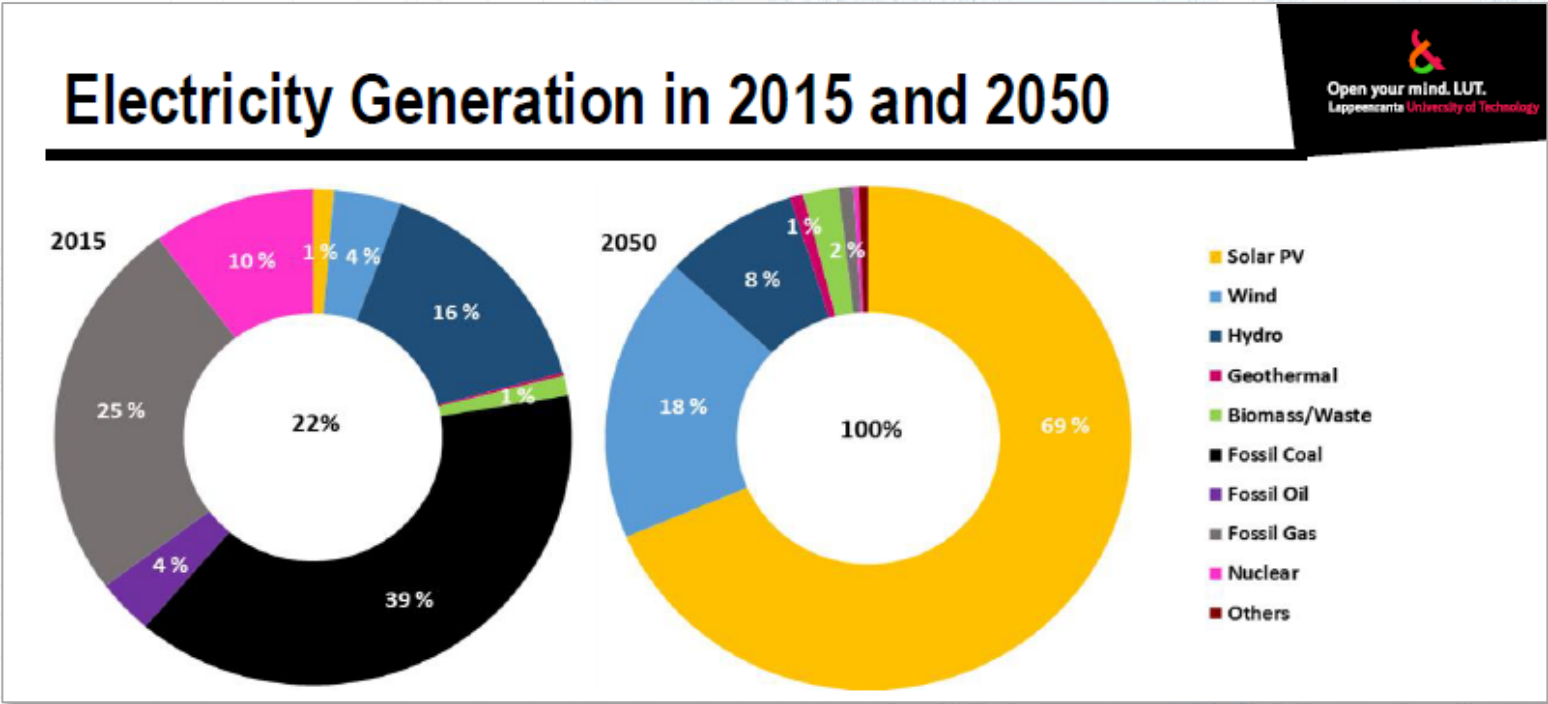
Wim Sinke

ECN part of TNO and University of Amsterdam, NL

European Technology & Innovation Platform for Photovoltaics

The global PV solar energy landscape (1)

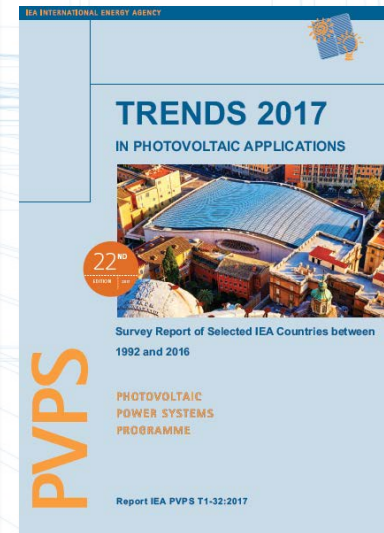
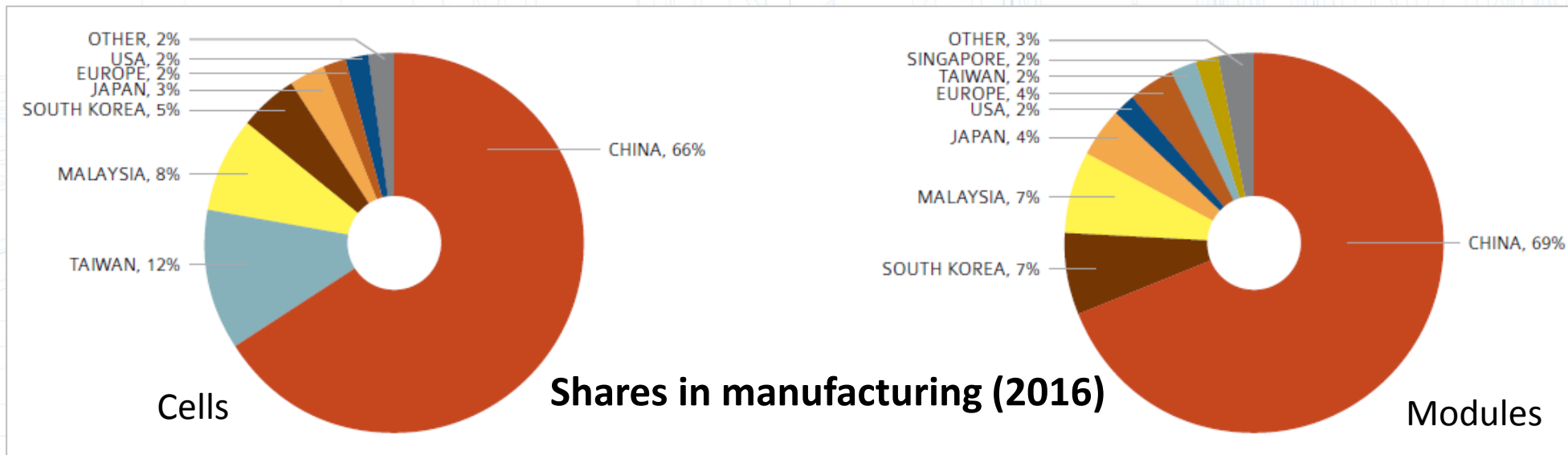
- Lowest cost (LCoE) renewable energy technology (in selected regions)
- Rapid market growth to the terawatt-scale for impact
- Cornerstone of electricity supply in zero-emission scenarios



Manish Ram, Dmitrii Bogdanov, Arman Aghahosseini, Solomon Oyewo, Ashish Gulagi, Michael Child, Hans-Josef Fell & Christian Breyer (2017)

The global PV solar energy landscape (2)

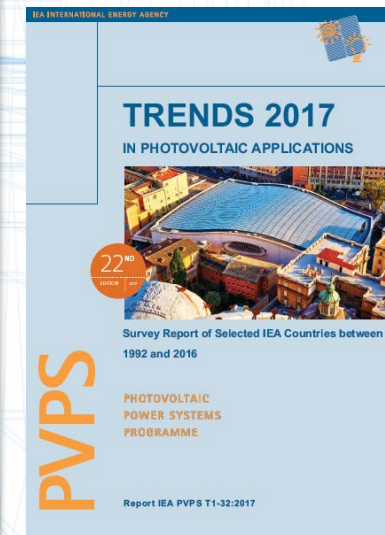
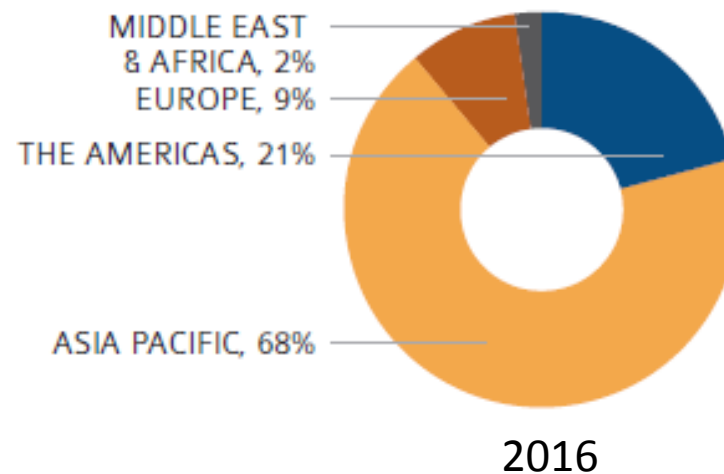
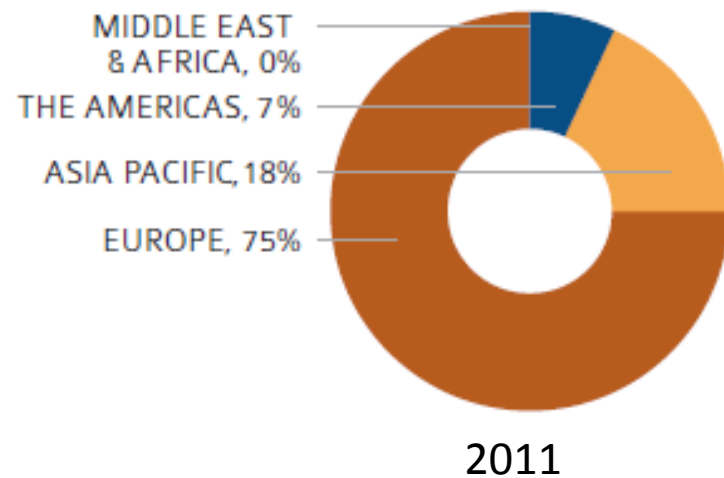
- Manufacturing of PV technology at a huge scale in Asia
- Silicon technology remains dominant
- Major markets currently in Asia and the Americas
- Increasing market share of (very) large systems



Europe's position

- Strong position in PV knowledge and innovative technologies and applications, but:
- Lost much ground in manufacturing and deployment
- Current market too small to maintain/ rebuild industry in upstream part of the value chain

Share of annual installations



Challenges and opportunities for R&D

THE RTO INNOVATION SUMMIT

- Maintain position in global premier R&D league in current/temporary absence of large-scale manufacturing and substantial markets, to enable re-entry: don't give up on PV!
- Focus on high-end existing and on selected new technologies & applications
- Foster and build public-private partnerships, also with SME's
- Encourage rebuilding sustainable markets
- Join forces (between member states and stakeholders) in strategic areas:
 - SET-Plan Implementation Working Group
 - H2020 and Horizon Europe

Conclusions/ messages

- PV is indispensable for a sustainable energy future
- Opportunities are huge and hence, competition is tough
- Innovation is fast and hence, R&D is crucial for success
- Europe is positioned to regain a share in global manufacturing and deployment, but time is tight



Photovoltaic Solar Energy: Big and Beyond

Sustainable energy to reach the 1.5 degrees climate target

Vision and claims of the European Technology and Innovation Platform for Photovoltaics (ETIP PV)

A sustainable future with a clean European and global energy system

- Photovoltaic solar electricity (Solar PV) has recently become the lowest cost renewable energy
- Solar PV can be used in all geographic regions and generating capacity can be expanded rapidly
- Solar PV allows to drastically decrease GHG emissions in the electricity sector and, by electrification, in all other sectors
- Solar PV supports a socially acceptable energy transition by offering distributed generation and integrated applications as well as economic opportunities
- Solar PV, in combination with wind energy, storage and conversion ("power2X") thus is a cornerstone of the future sustainable energy system
- Solar PV needs to be deployed rapidly and massively, worldwide and within the EU to comply with 1.5 degrees climate targets
- Europe's PV manufacturing and installation capacity needs to grow in accordance with market expansion to seize economic opportunities and to reduce dependence on energy imports and on PV technology imports.

Thank you for your attention

