

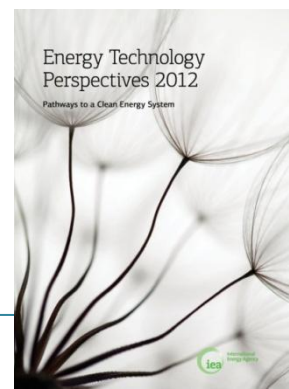


Technology Roadmaps:

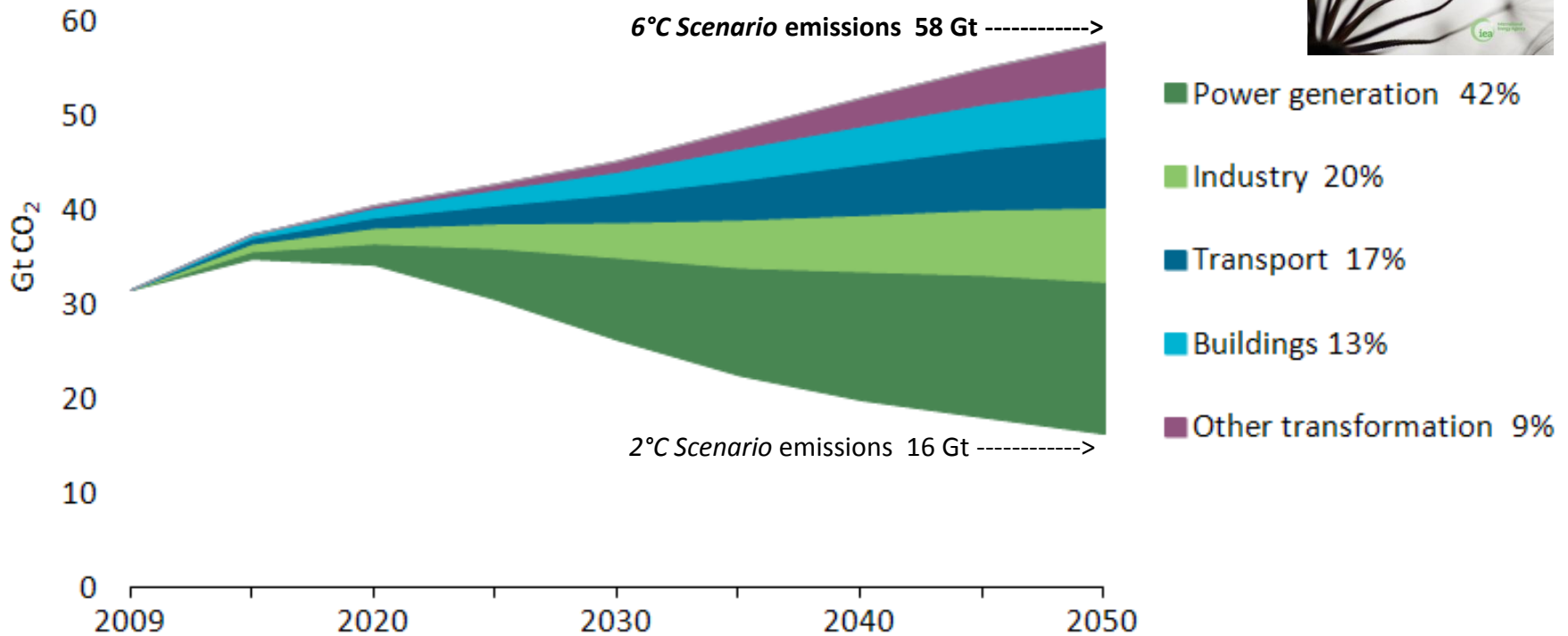
Cecilia Tam

3 February 2014

Low-carbon energy technology roadmaps

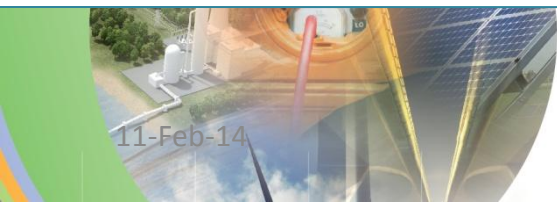


Key technologies for reducing global CO₂ emissions



Source: Energy Technology Perspectives 2012

- 6°C Scenario – business-as-usual; no adoption of new energy and climate policies
- 2°C Scenario - energy-related CO₂-emissions halved by 2050 through CO₂-price and strong policies

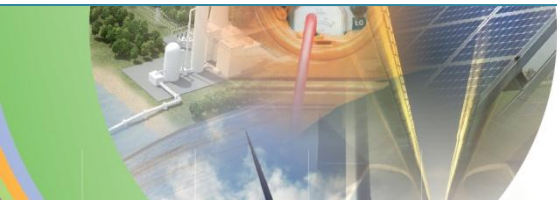


Low-carbon energy technology roadmaps

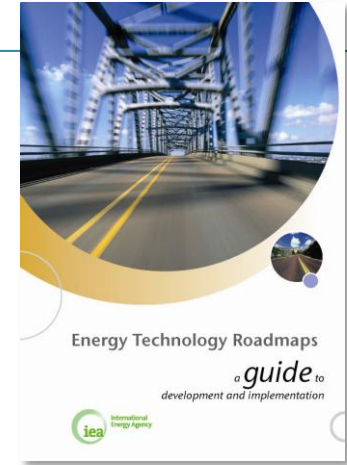
IEA Roadmap Definition

“A technology roadmap is a dynamic set of technical, policy, legal, financial, market & organizational requirements identified by all stakeholders involved in its development. The effort shall lead to improved and enhanced sharing and collaboration of all related technology-specific RDD&D information among participants.

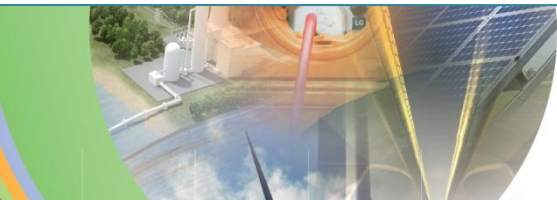
The goal is to accelerate the overall RDD&D process in order to deliver an earlier uptake of the specific energy technology into the marketplace”.



Overview of IEA roadmap process



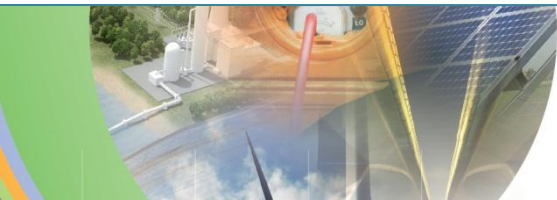
- Engage cross-section of stakeholders
- Identify a baseline:
 - Where is technology today?
- Establish a vision:
 - What is the deployment path needed to achieve 2050 goals?
- Identify technical, regulatory, policy, financial, public acceptance barriers
 - What are the near term action items?
- Develop implementation action items for stakeholders



Low-carbon energy technology roadmaps

Roadmap logic

- **Goal to achieve**
- **Milestones to be met**
- **Gaps to be filled**
- **Actions to overcome gaps and barriers**
- **What and when things need to be achieved**



Roadmap Tasks

- **Scoping phase, review progress against roadmap milestones and identify issues for update**
- **One or more workshops with experts from industry, government, academia...**
- **Develop draft roadmap**
- **Circulate draft of roadmap to wider stakeholder group**
- **Carry out missing analysis and refine roadmap**
- **Publish roadmap**



Technology roadmaps status

2009

2010

2011

2012

2013

Technology Roadmap
Electric and plug-in hybrid

Technology Roadmap
Concentration Solar Power

Technology Roadmap
Smart Grids

Technology Roadmap
Nuclear Energy

Technology Roadmap
Carbon Capture and Storage

Technology Roadmap
Solar photovoltaic energy

Technology Roadmap
Carbon Capture and Storage

Technology Roadmap
High-Efficiency, Low-Emissions Coal-Fired Power Generation

Technology Roadmap
Hydropower

Technology Roadmap
Carbon capture and storage

Technology Roadmap
Wind energy

Technology Roadmap
Hydrogen

Technology Roadmap
Energy Storage

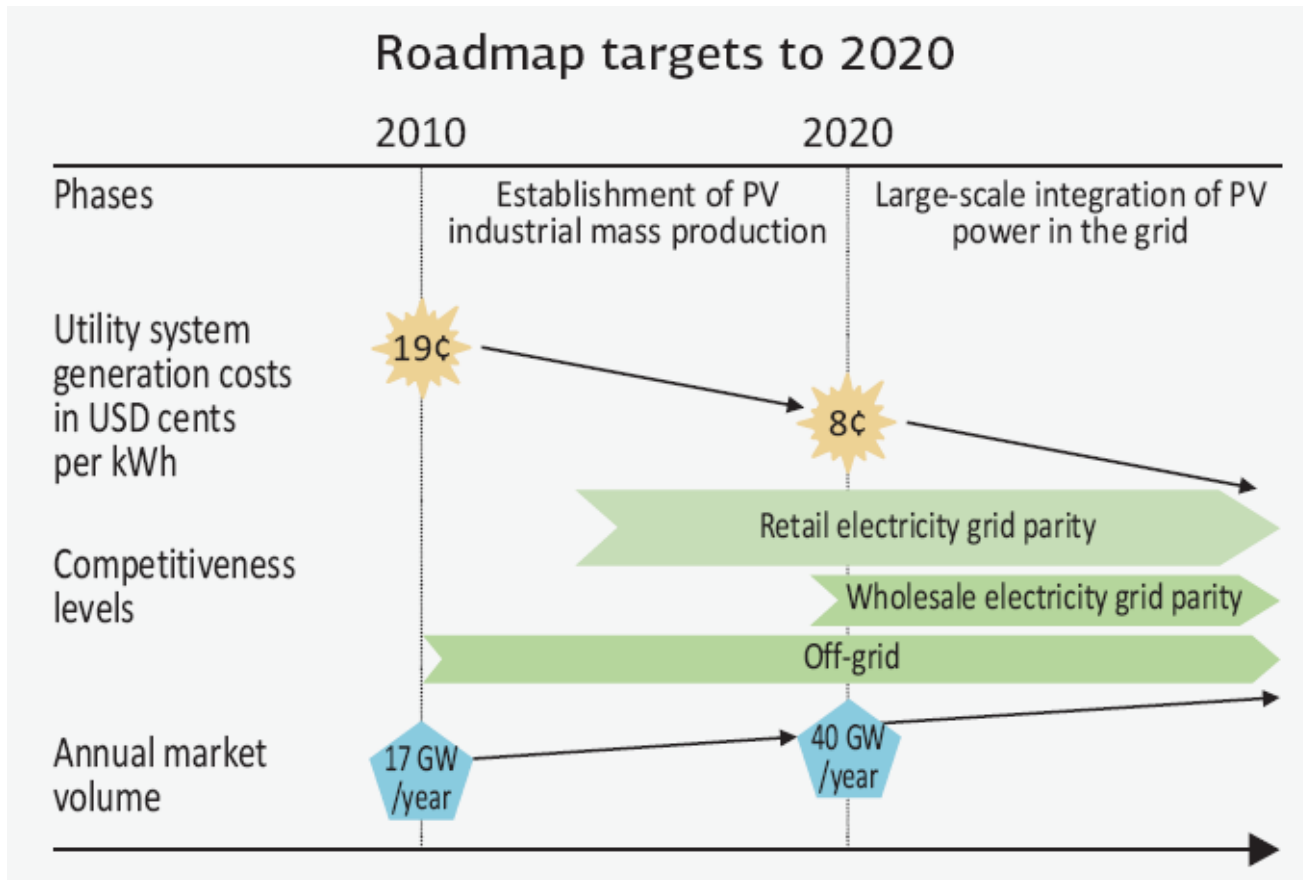
2014
•Energy Storage
•Hydrogen

能源技术路线图
中国风电发展路线图2050
能源研究所

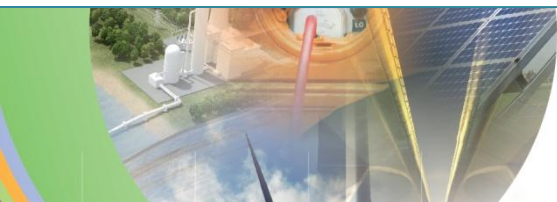
Low-carbon energy technology roadmaps



Roadmap targets for Solar PV



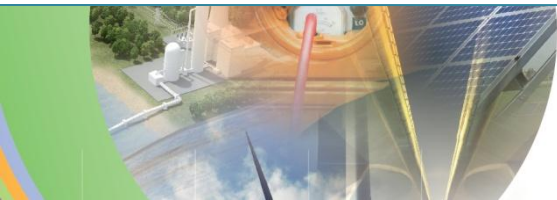
Source: ETP 2012



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THANK YOU



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