International Energy Agency
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Energy Technology Perspectives : Planning the Energy Transition

Energy Day

Lima, Peru, 5 December 2014

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International Energy Agency

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IEA Energy Technology Activities

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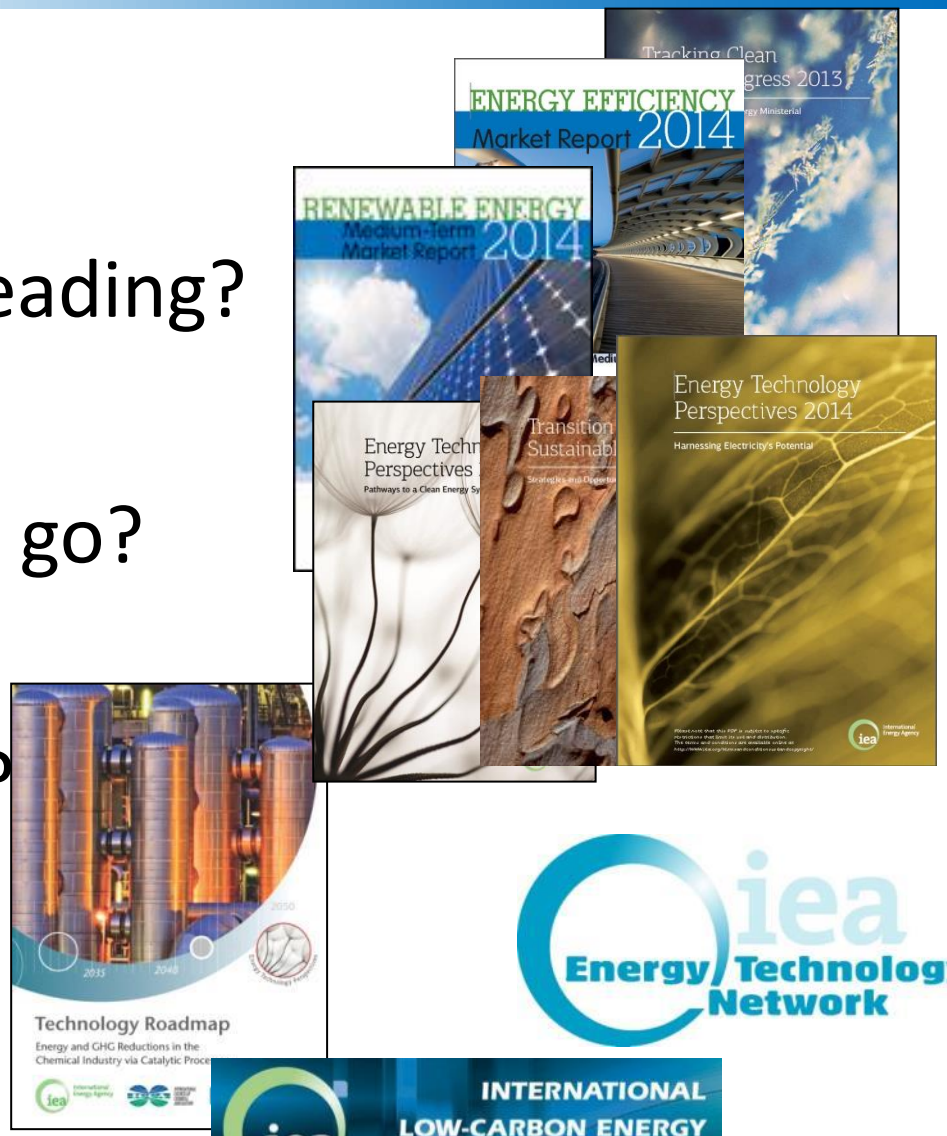
- Where is the world heading?
- Where do we need to go?
- How do we get there?



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The world faces a challenge

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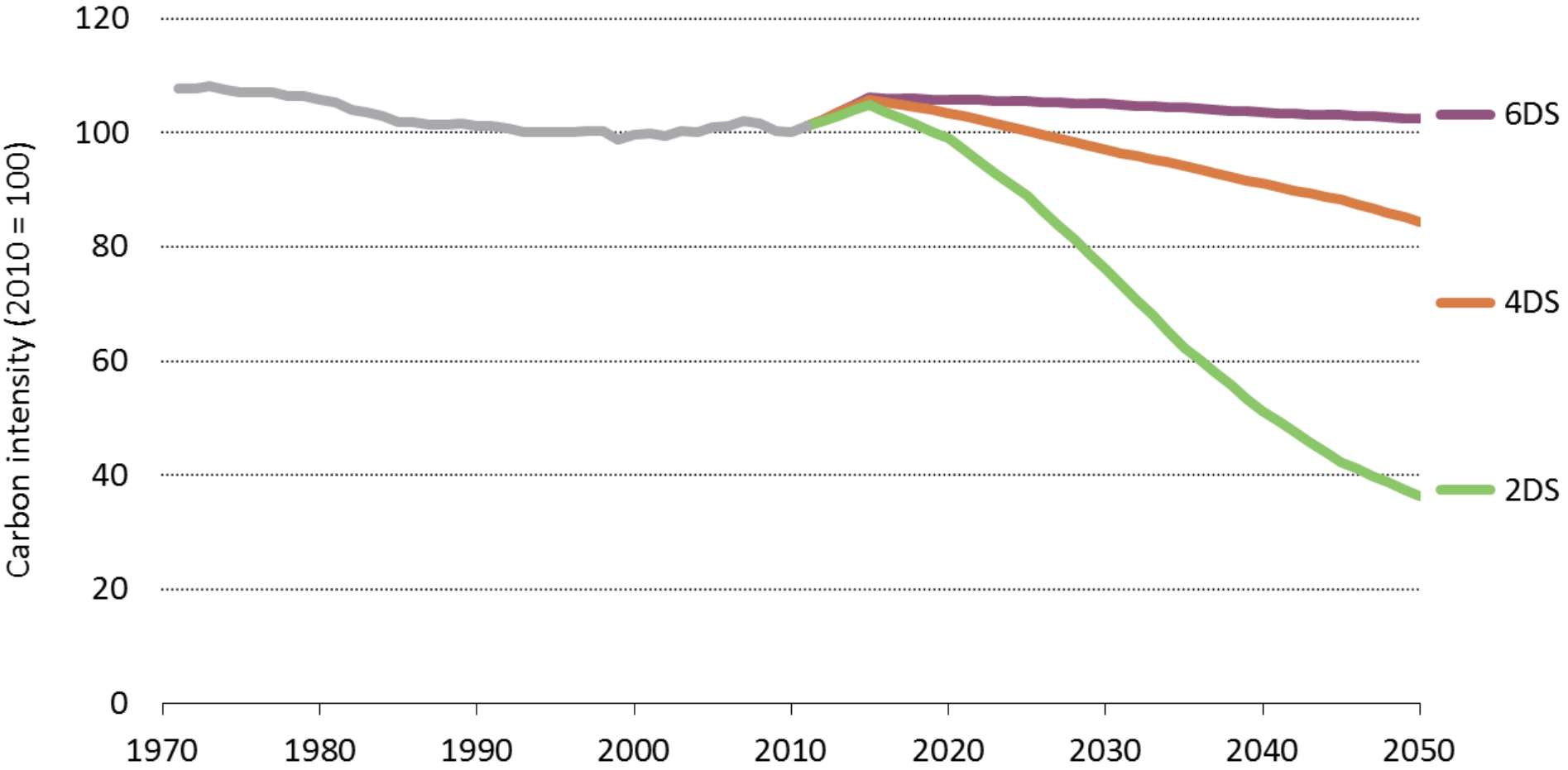

Energy's carbon intensity is stuck AND we need to decouple economic growth from energy use

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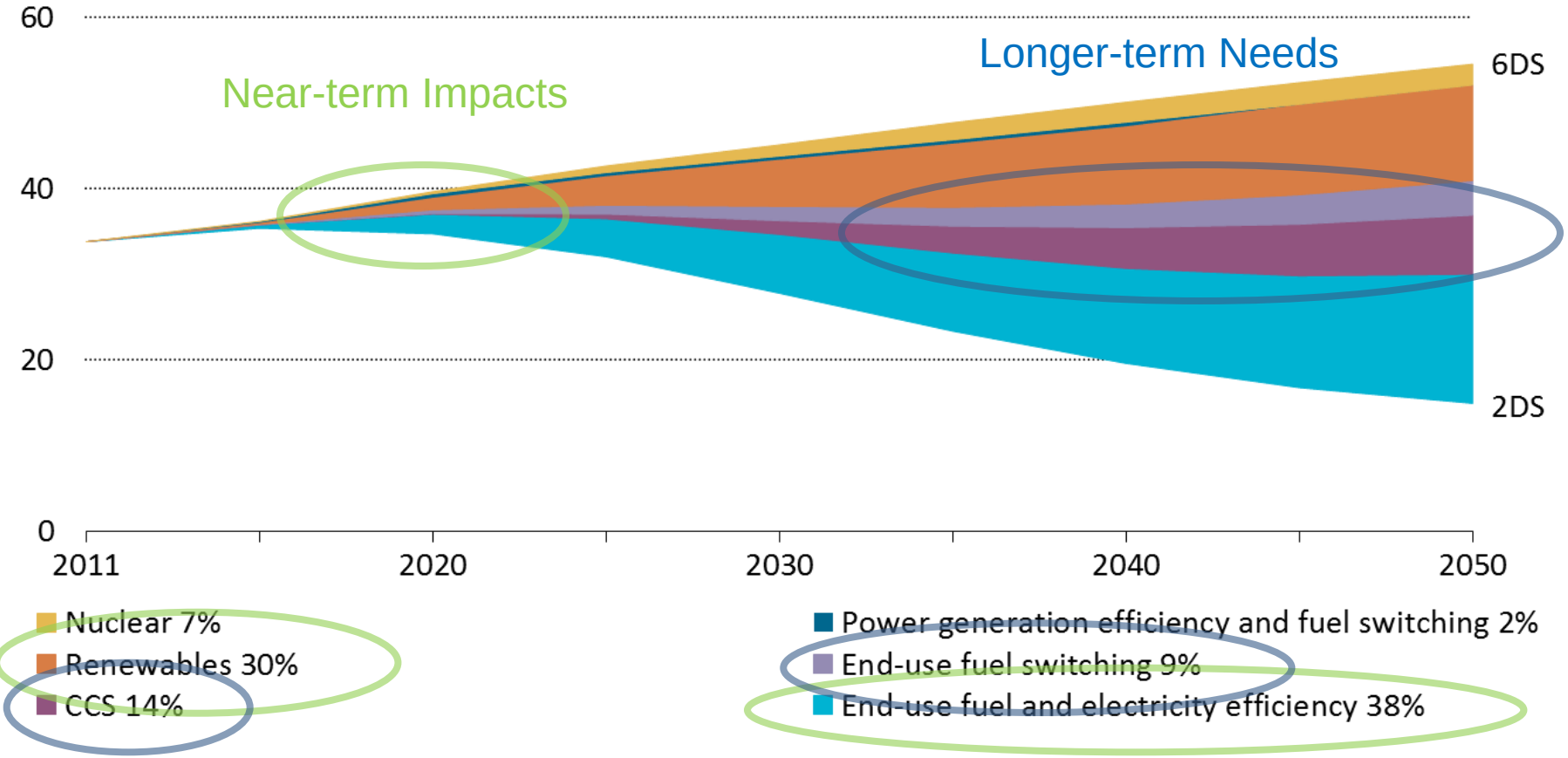
Energy Technology Perspectives

A transformation is needed…



…and we to have the tools to develop a strategy and be proactive.

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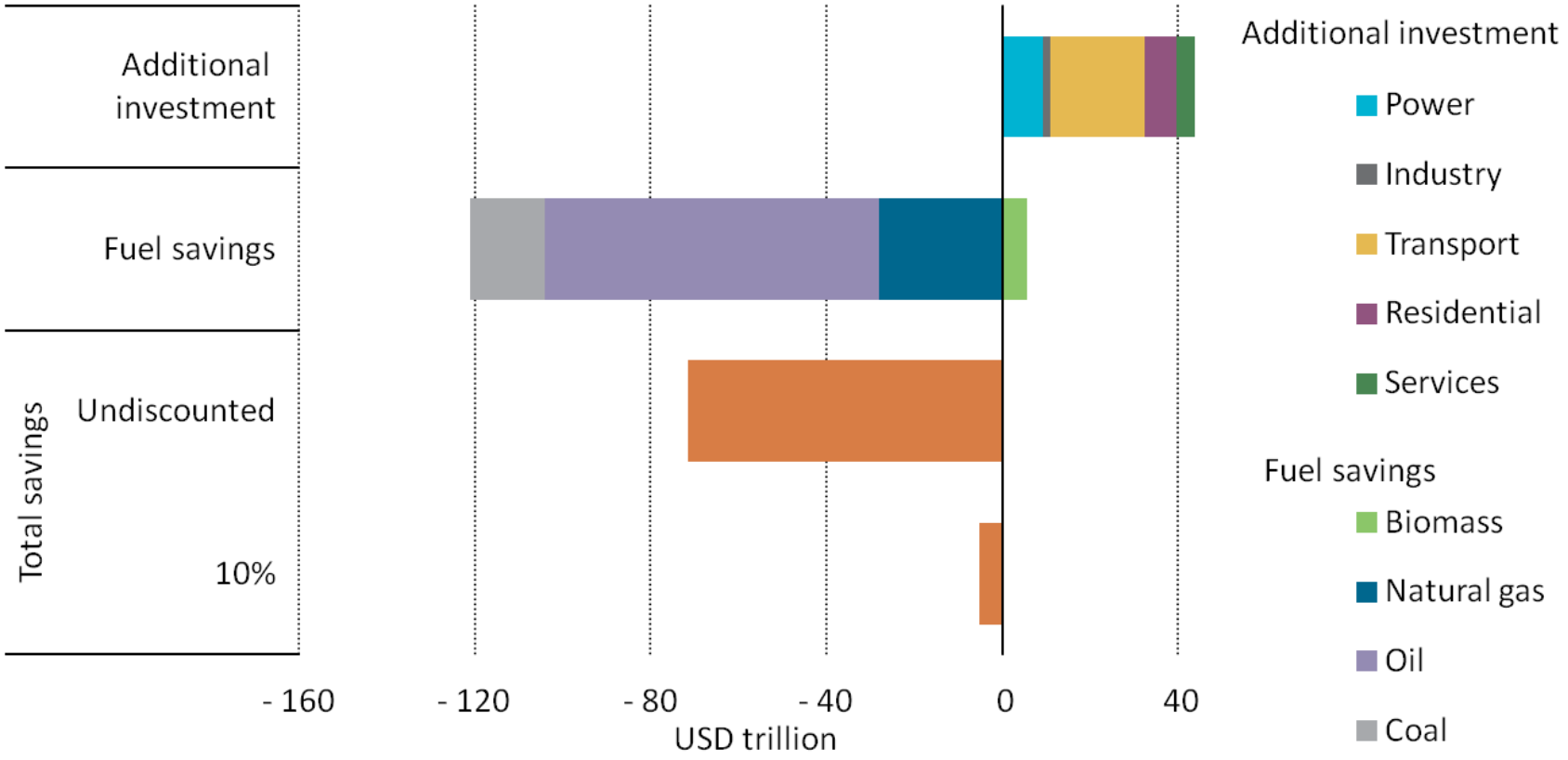
Investment in our future pays off…



…and it is cost effective to make the transition

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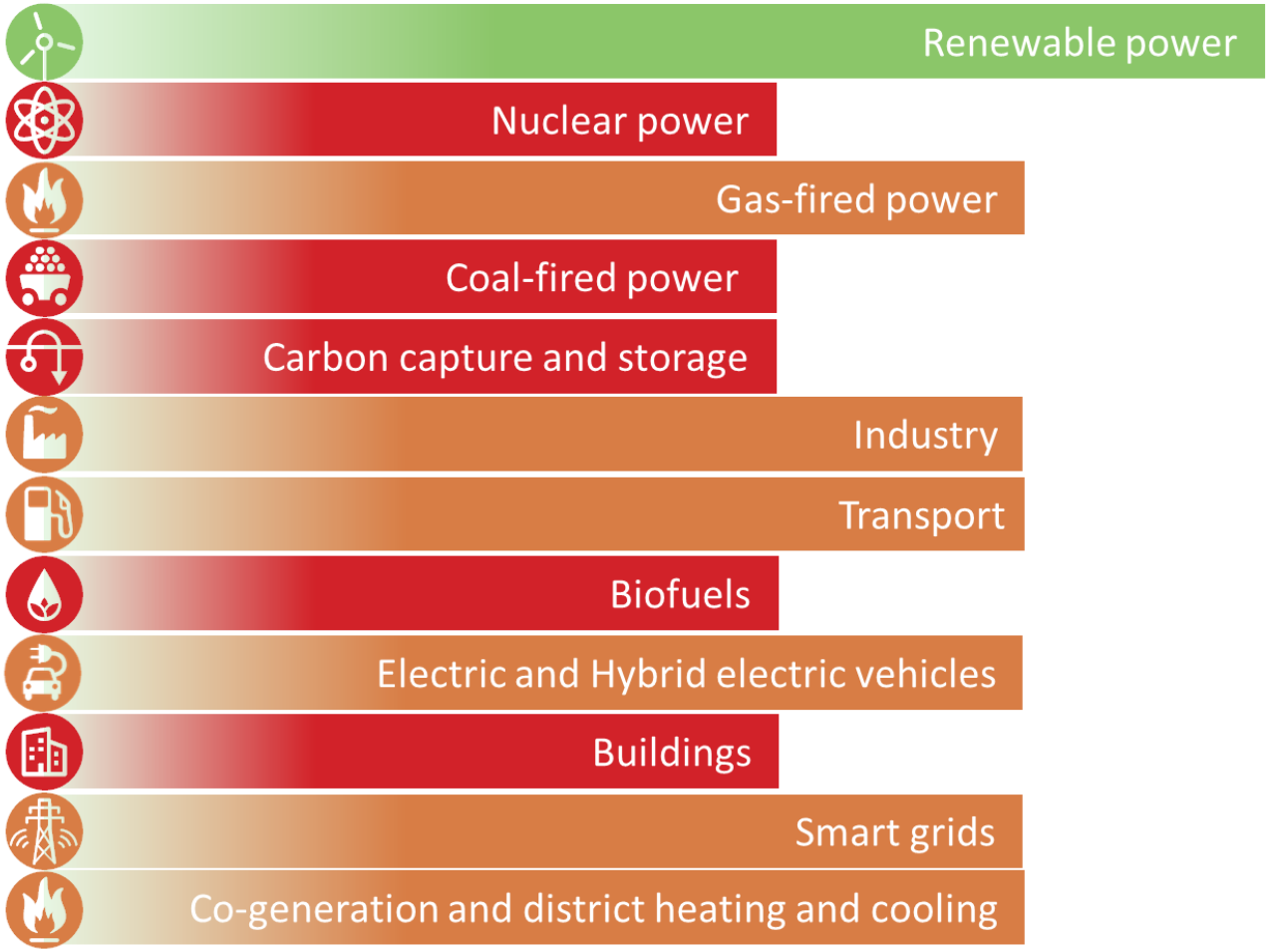
Tracking Clean Energy Progress

We are not on track…



…The political will to make meaningful progress at a global scale has yet to be demonstrated

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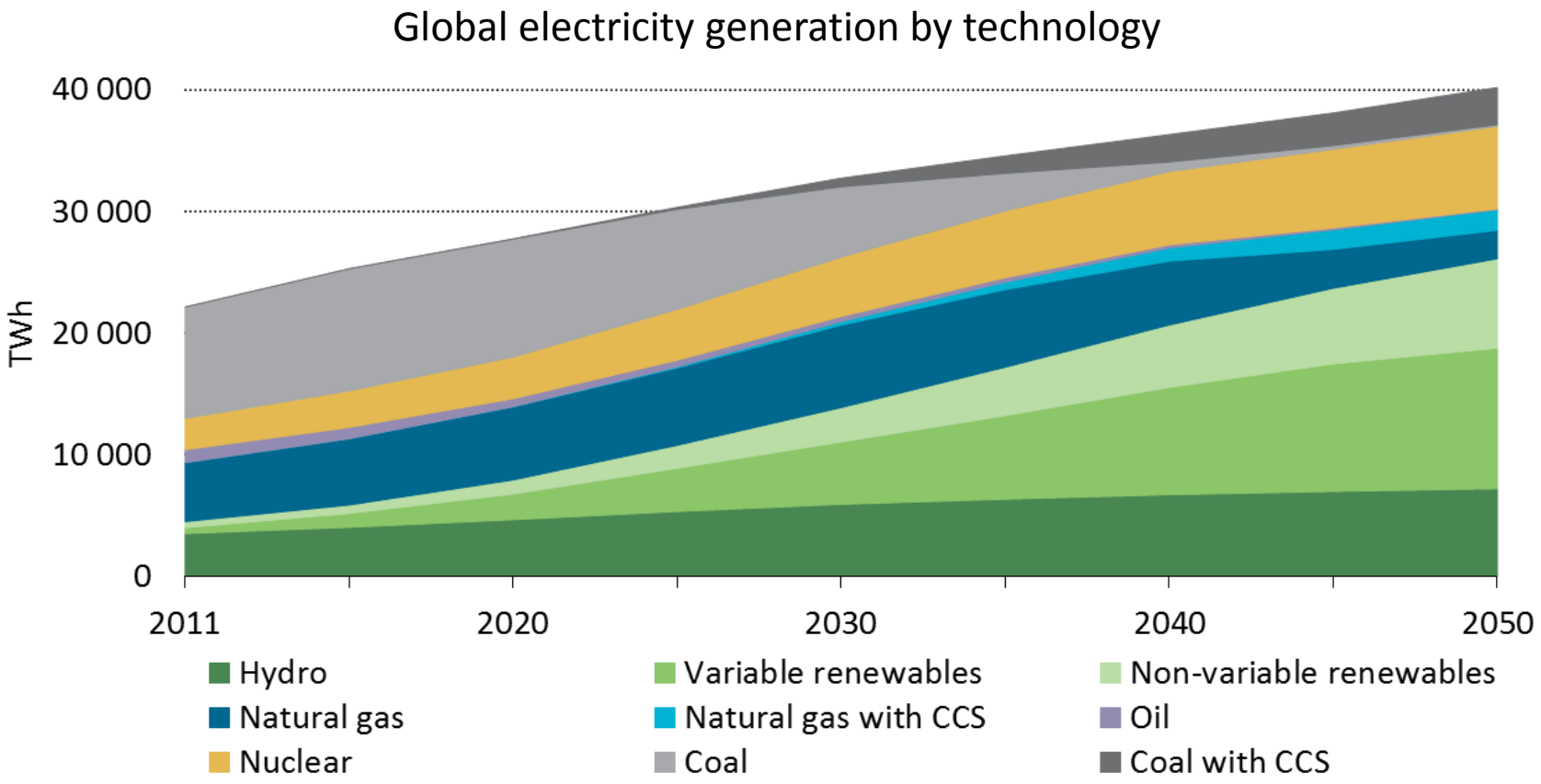
Electricity Generation: a share reversal



- *Generation today:*
  - *Fossil fuels: 68%*
  - *Renewables: 20%*
- *Generation 2DS 2050:*
  - *Renewables: 65%*
  - *Fossil fuels: 20%*

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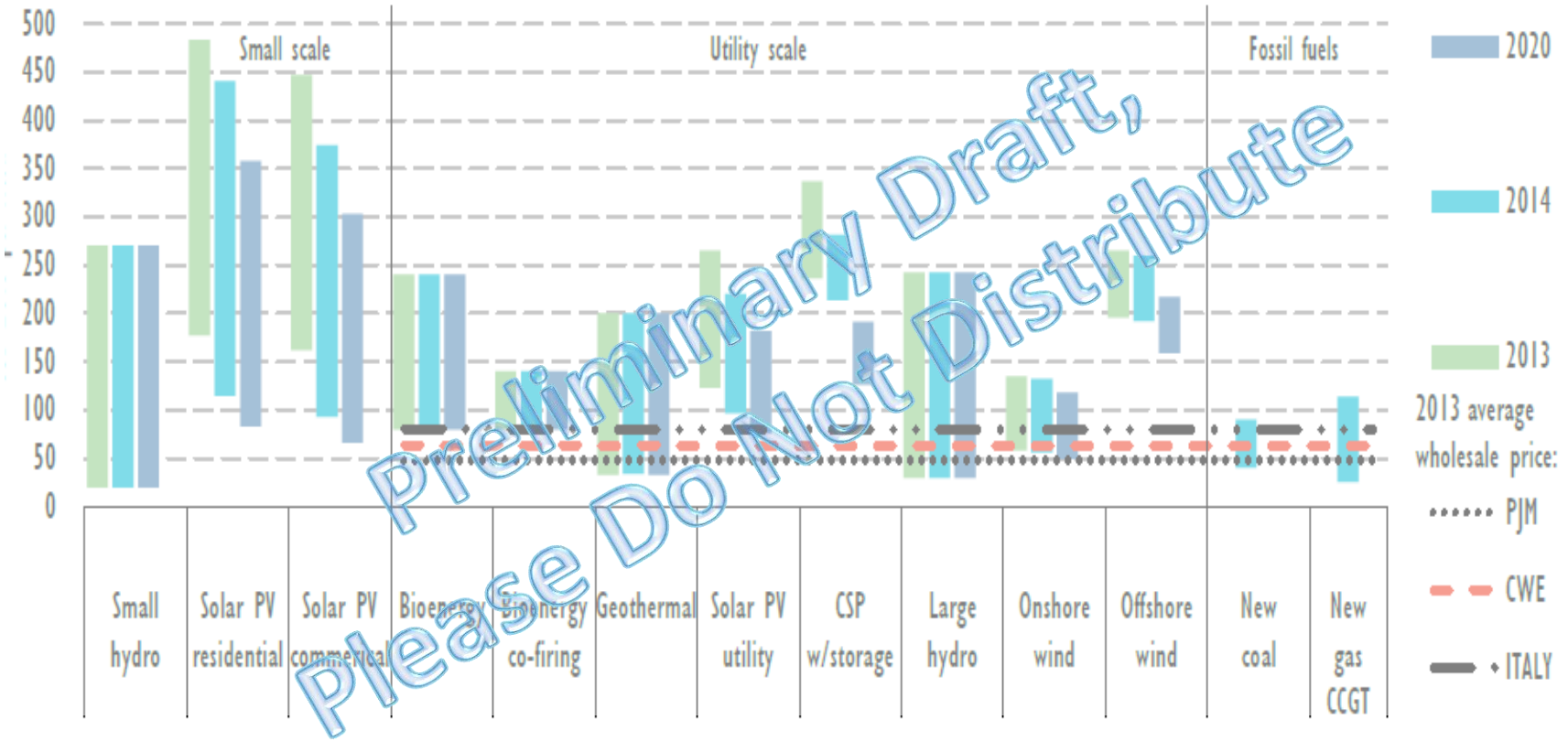
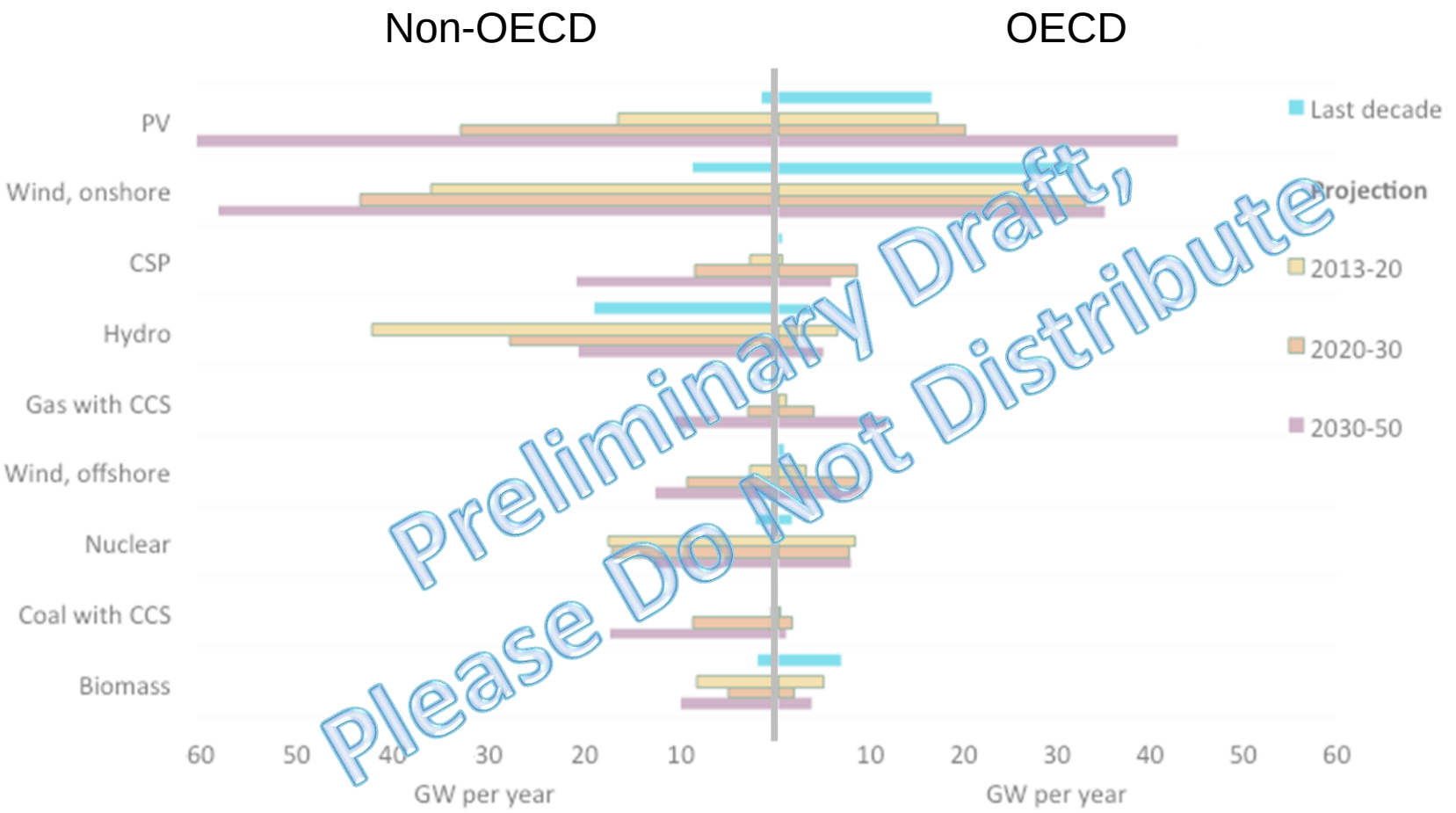
Innovation as a sustainability engine



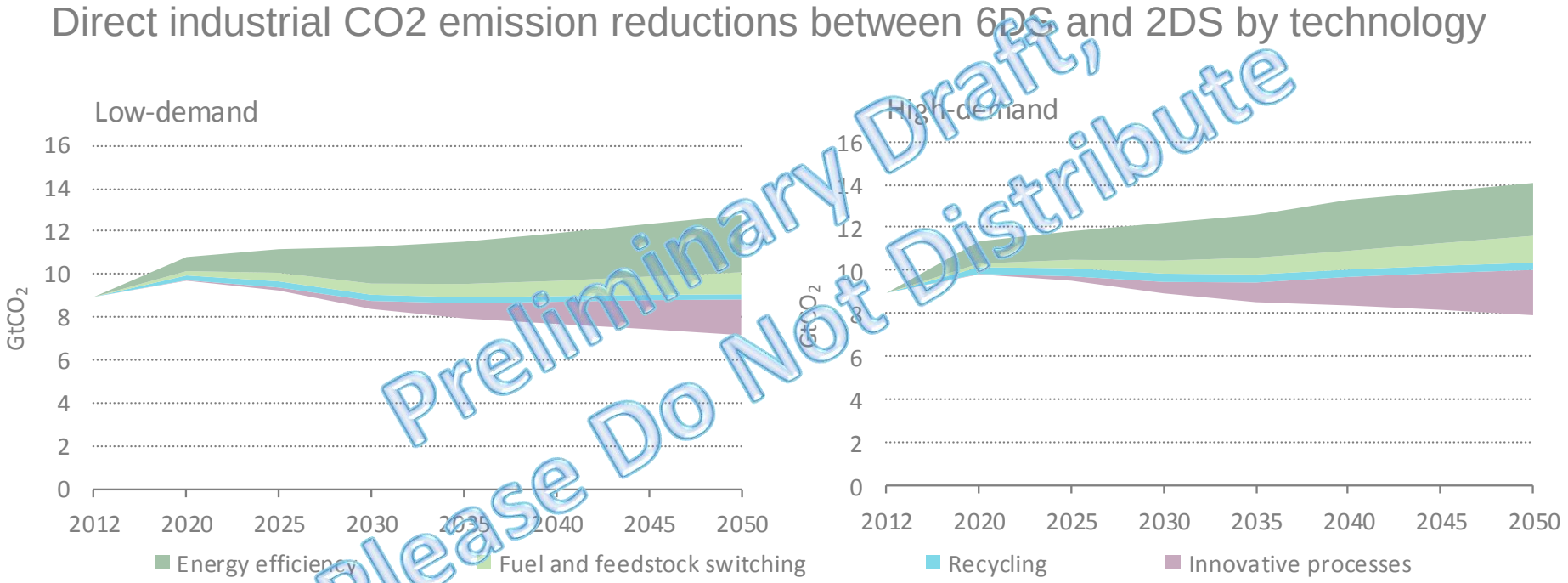
Cost reductions and performance improvements must be considered when deciding on future actions

Scale of Innovation capacity needs



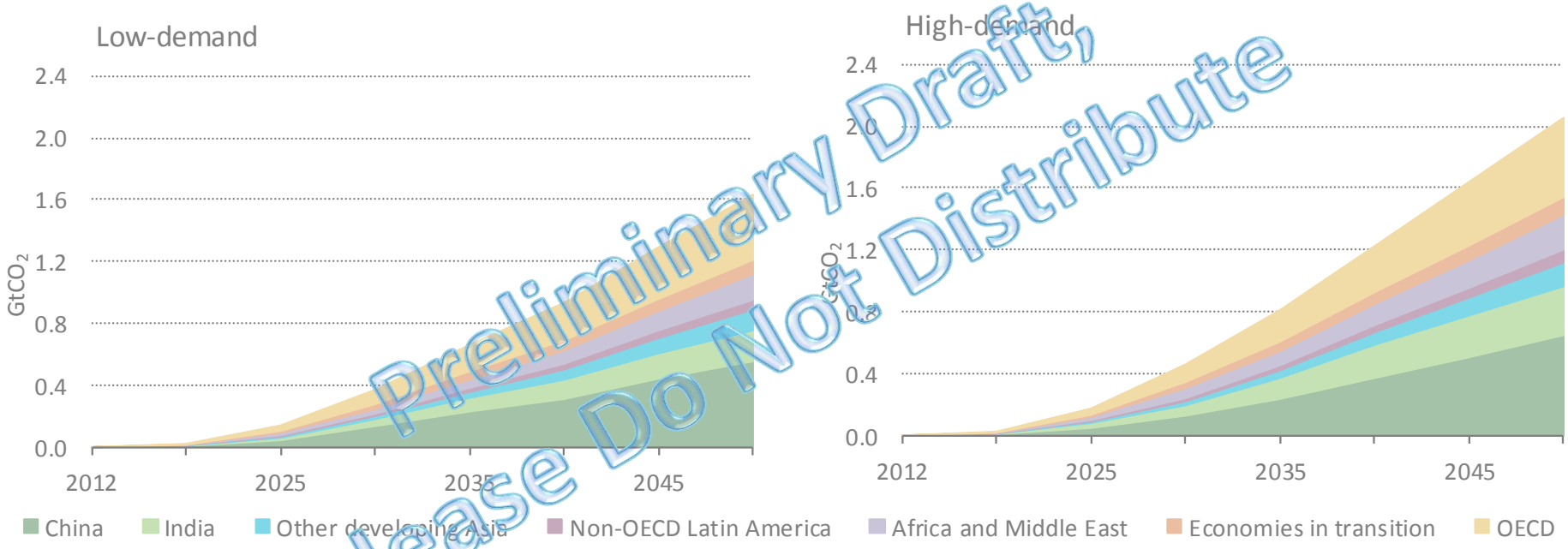
Deployment rates will exceed any recent trends, and will take place in new environments

Also need to innovate on Energy Demand



Industrial innovative low-carbon processes become critical to achieve long-term emission reductions

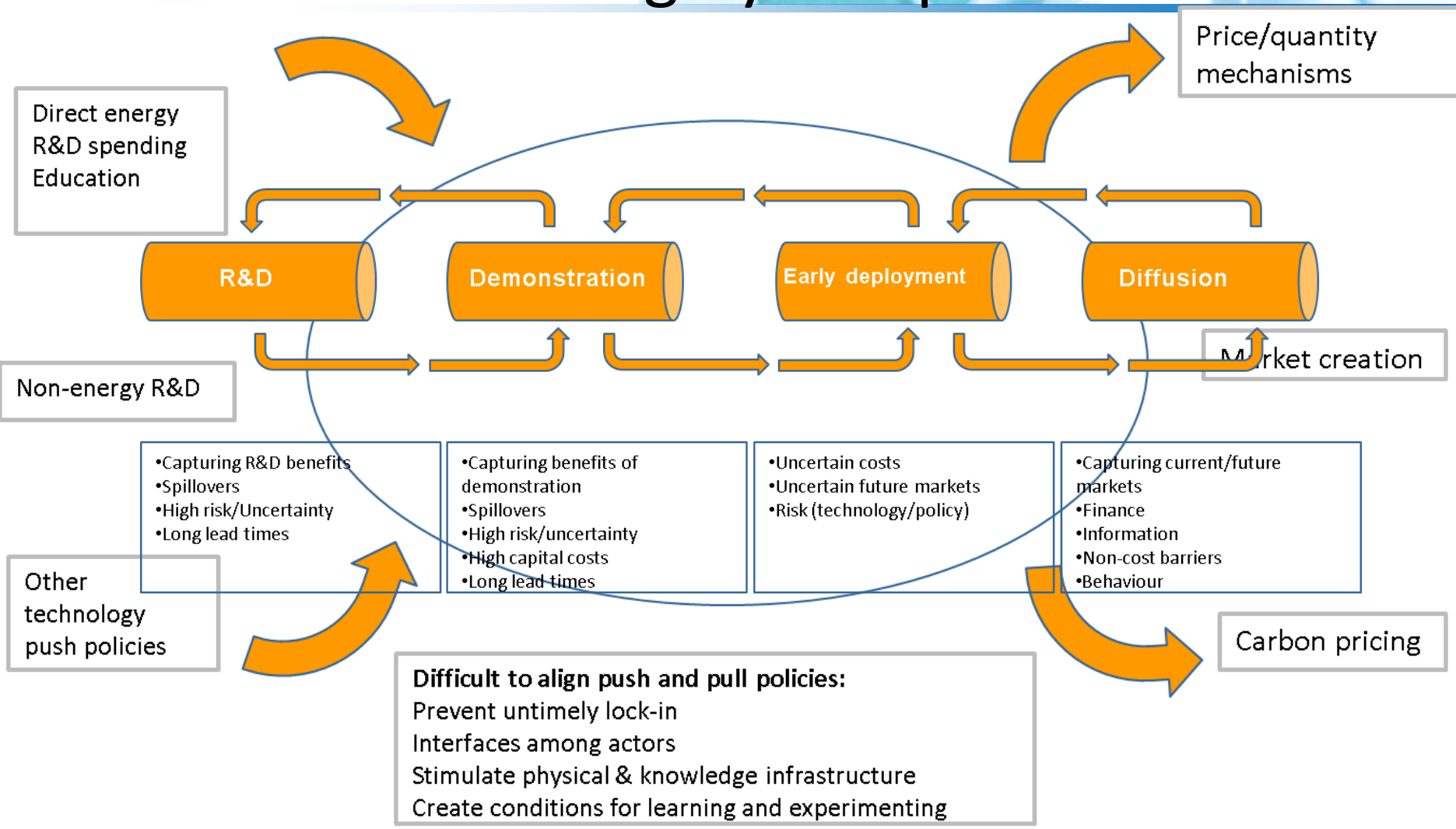
Shifting landscape of Innovation



Non-OECD countries will need capacity to deploy large amounts of new technologies and processes

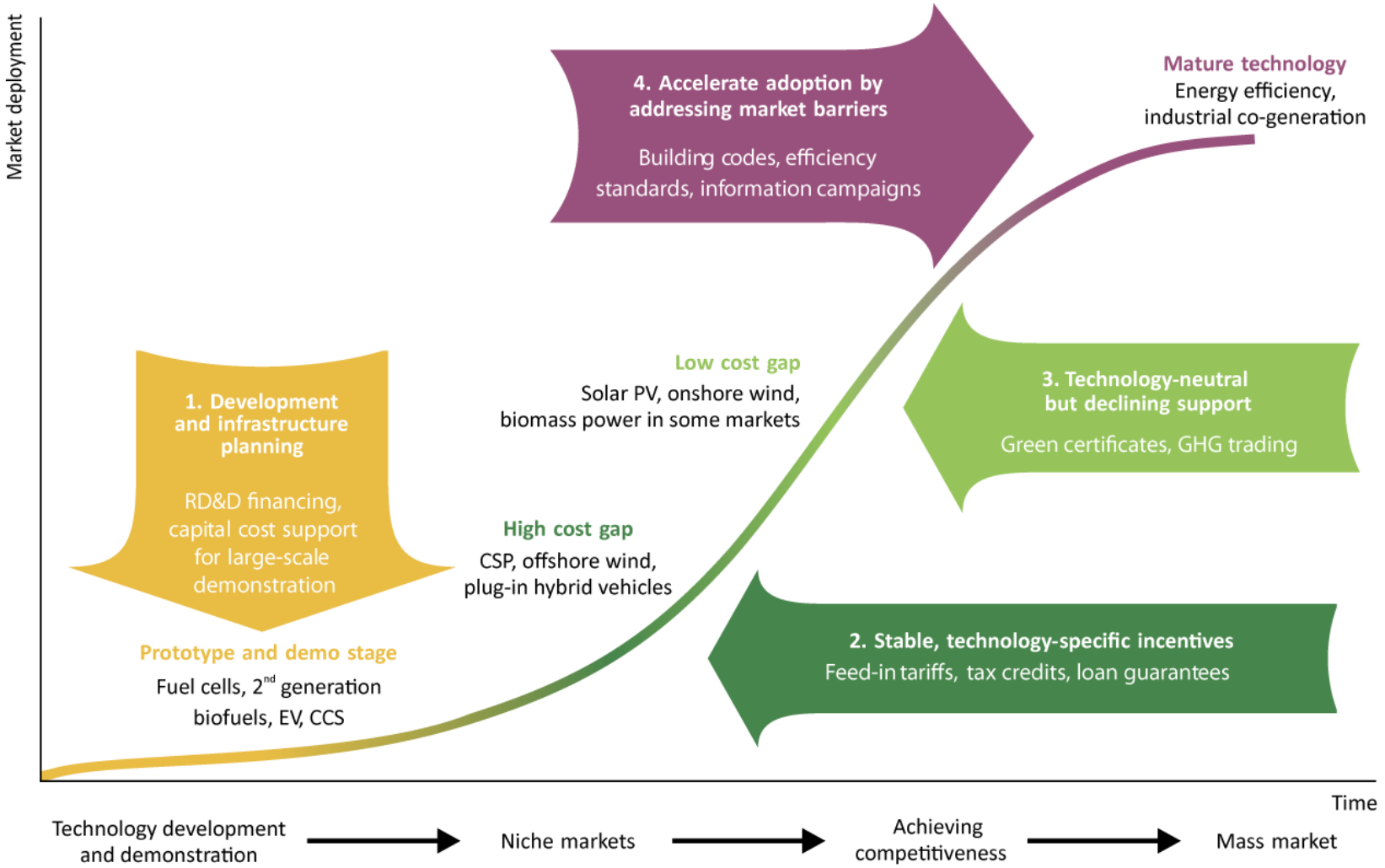
Setting innovation priorities

Highly complex and uncertain



A complex system where inputs and outputs are difficult to measure.

Supporting Energy Innovation: The right policy at the right time



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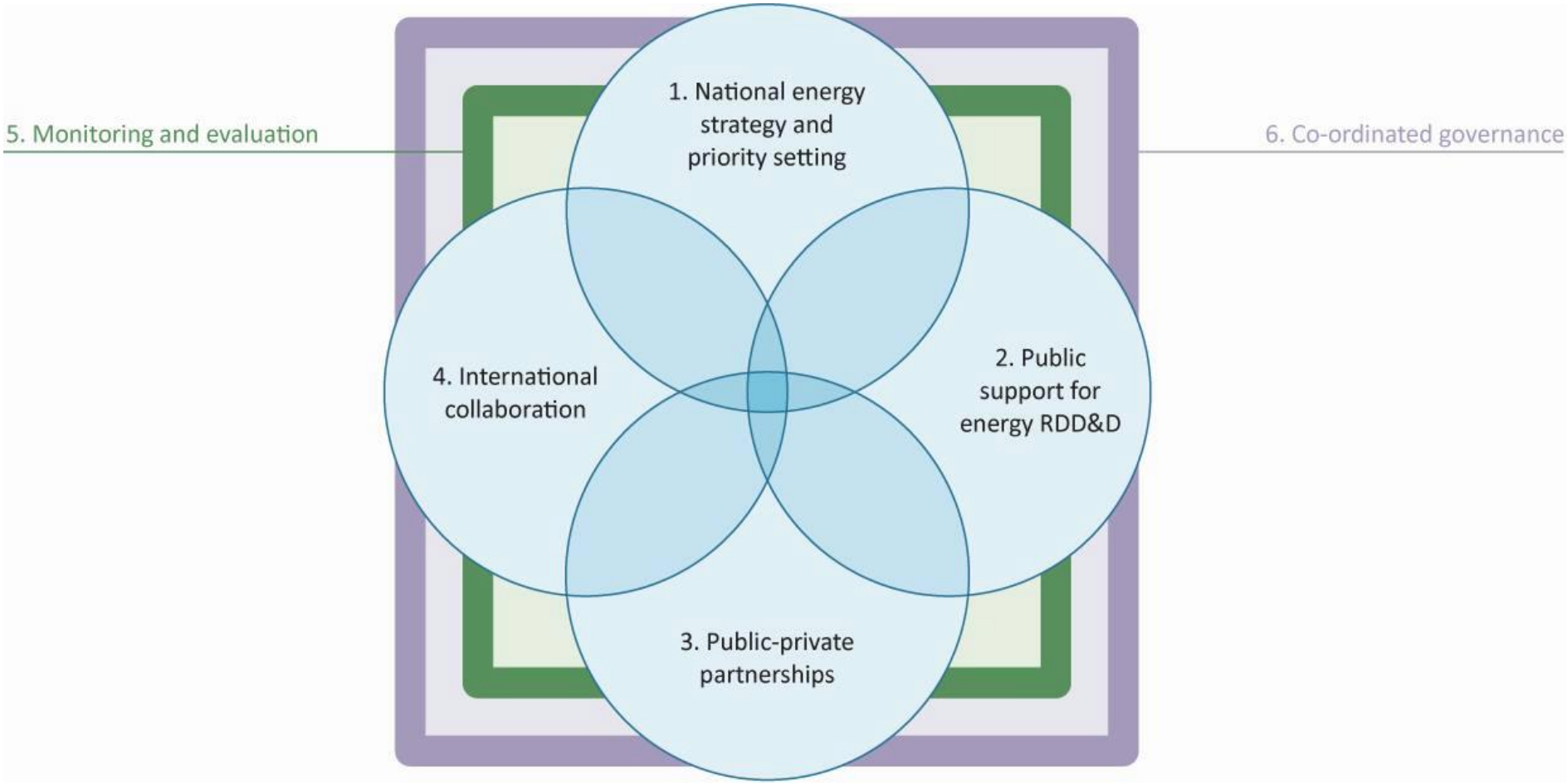

IEA Technology Roadmaps

Mapping where we need to go…

2009 **2010** **2011** **2012** **2013**

2014

2015
- **Hydrogen**
- **Smart Grids**

Low-Carbon Technology Roadmaps

... By building consensus among all stakeholders

- 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

IEA's Energy Technology Network

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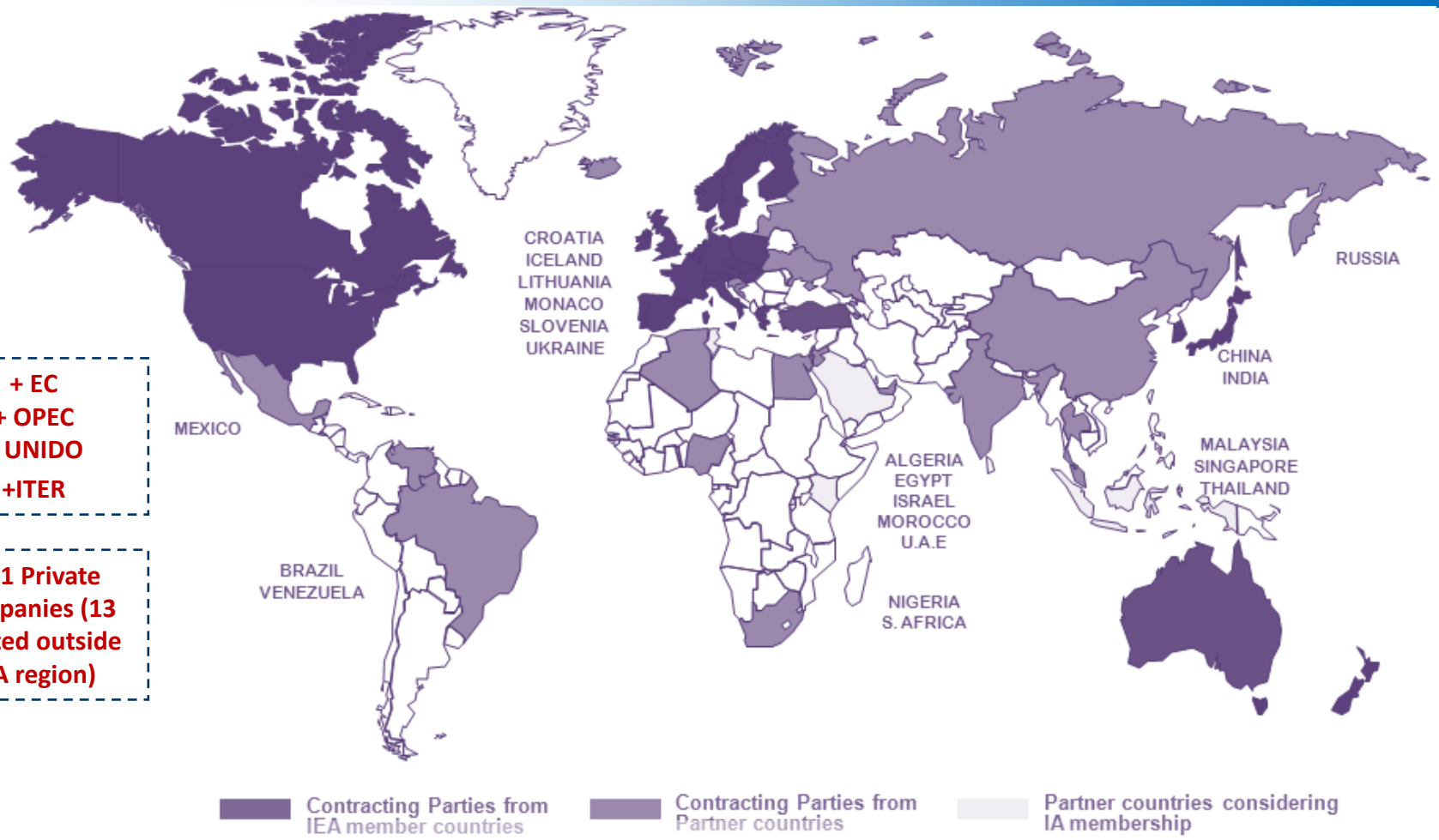

+ EC
+ OPEC
+ UNIDO
+ITER

+ 61 Private companies (13 located outside IEA region)

More than 6,000 scientists and experts
Representing 500 government agencies, research organisations, universities, energy companies, industries, businesses, and consultants
Over 1,400 projects completed to date

iea Energy Technology Network

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- *Energy Security*
- *Environmental Protection*
- *Economic Growth*
- *Engagement Worldwide*

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ETP Publication Programme

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ETP 2014	ETP 2015	ETP 2016
Part 1. Setting the Scene		
Global Outlook, Tracking Clean Energy Progress		
Part 2. Driving the Change (Thematic Focus)		
The age of electrification	Energy Technology and Innovation impacts on Climate change mitigation	Urban Energy Systems
Partner Country		
India	China	Mexico