

# Collaborative Innovation

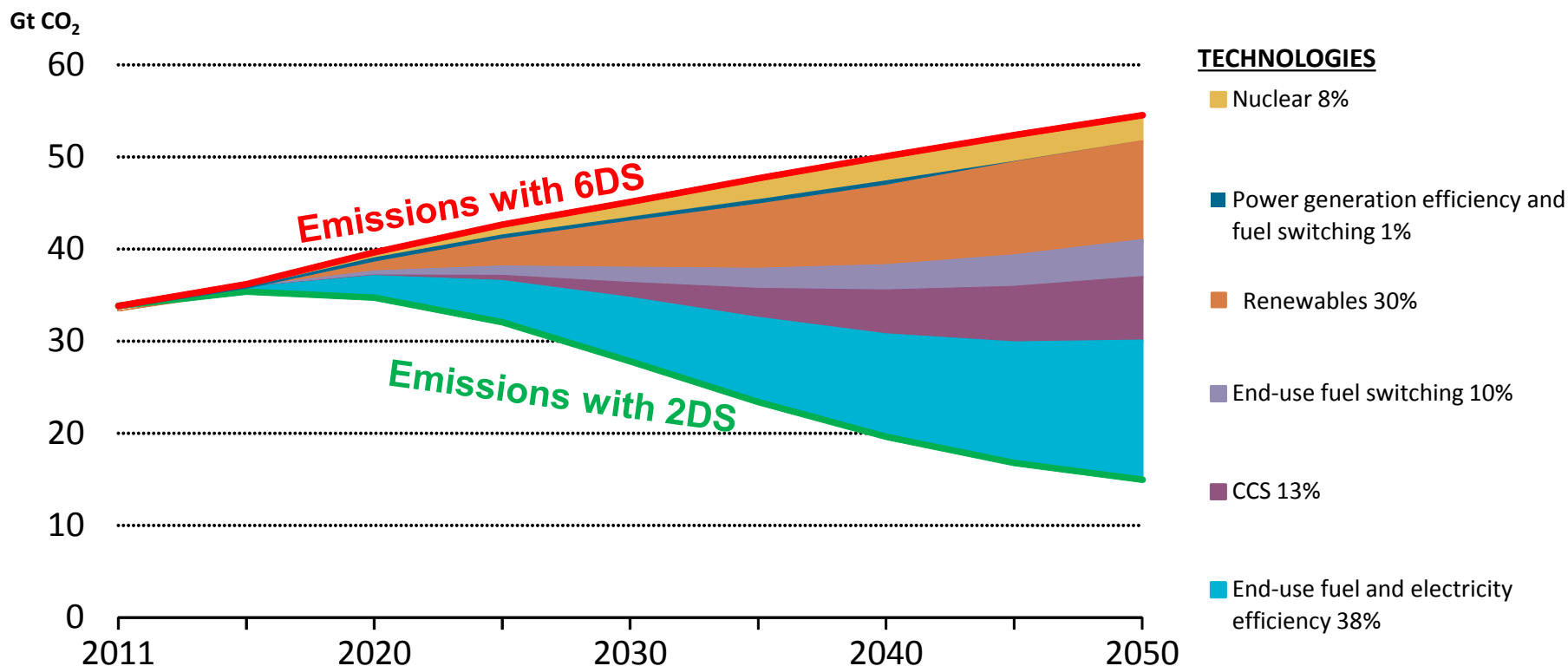
Accelerating energy technology  
innovation to make decarbonisation  
cheaper and easier

*Jean-François Gagné  
Energy Technology Policy Division Head  
International Energy Agency  
IEA Day, COP-21  
3 December 2015*

[www.iea.org](http://www.iea.org)

# Energy Innovation is crucial to a sustainable energy transition

Contribution of technology area to global cumulative CO<sub>2</sub> reductions

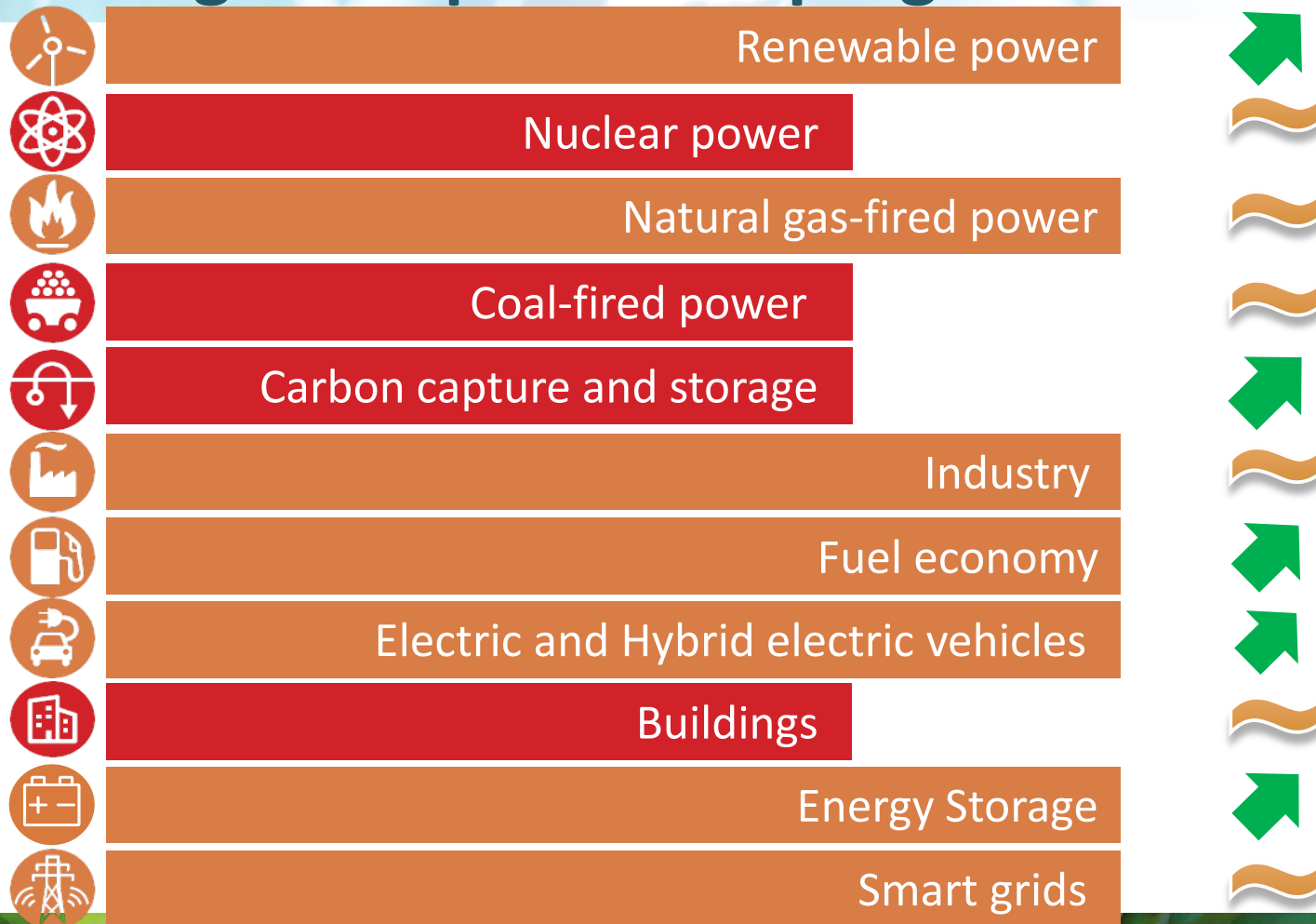


*Energy innovation has already yielded solutions, but ETP needs support and guidance to deliver on its promises* 2015

# Clean energy is not ramping up fast enough- Despite some progress



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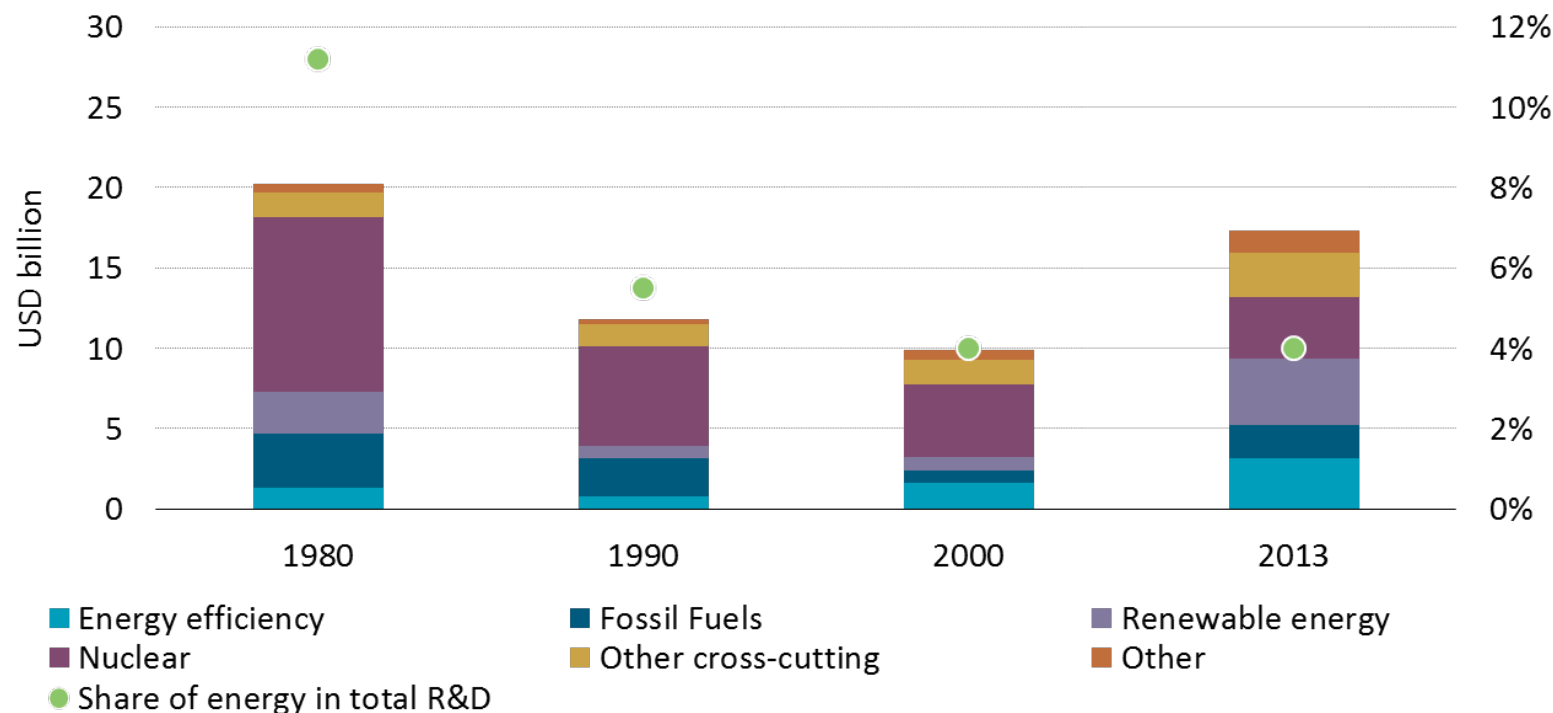


*Evidence shows that despite continued progress in many areas, for the first time none of the technologies are in line with 2DS goals*

ETP  
2015

# Energy RD&D funding now targets the right issues, but is not enough

IEA government Energy RD&D expenditure

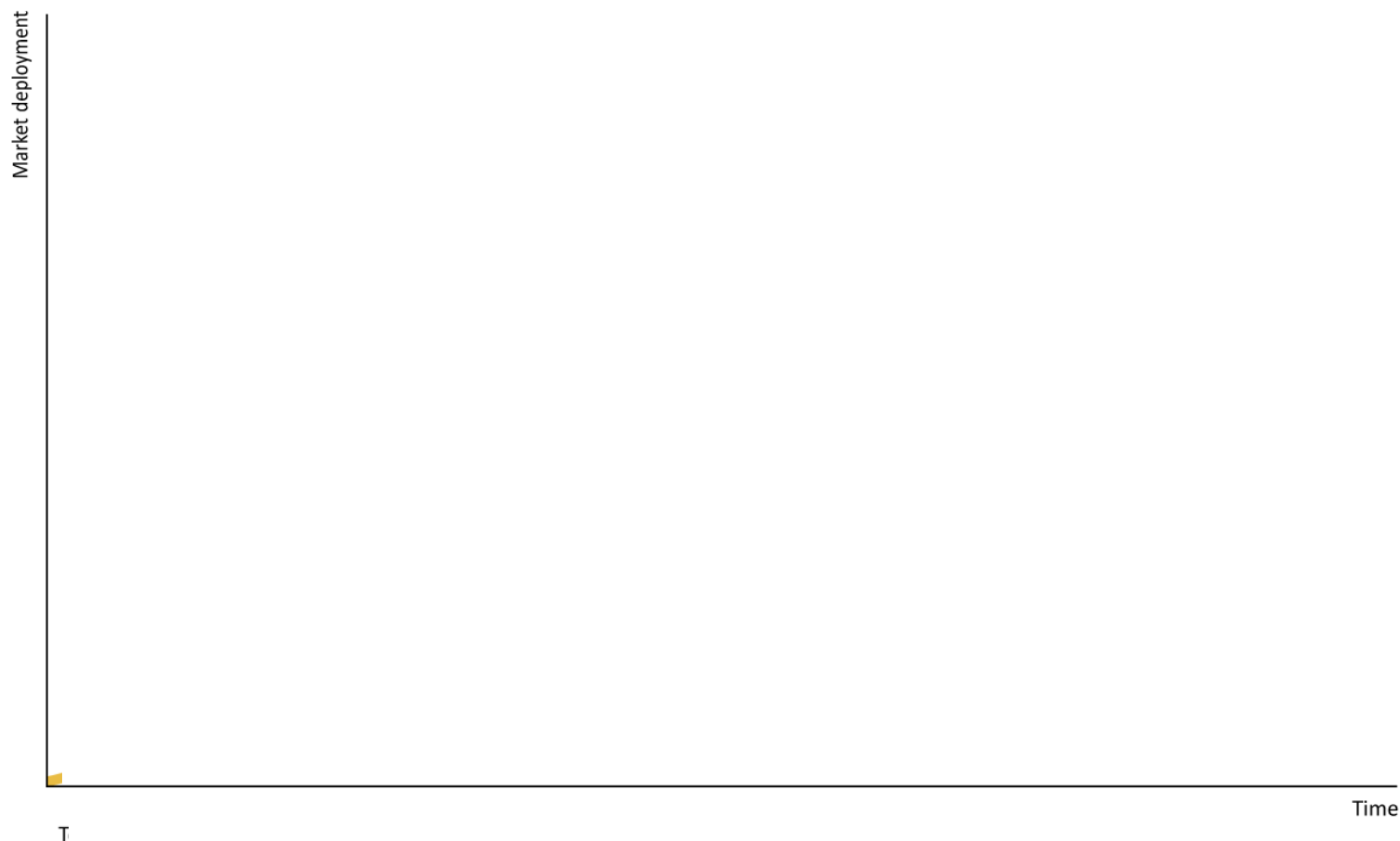


Energy RD&D spending should reflect the importance of energy technology in meeting climate objectives

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# Supporting Energy Innovation: The right policy at the right time



*The right support depends on the maturity of the  
technology and the degree of market uptake*

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# Innovation in a diverse world: no “one-size fits all” solution



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Different regions have differing technology shares today and in 2050-2DS

*National circumstances and resources will drive  
different technology portfolios and pathways*

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# Better understanding innovation can increase confidence in its outcomes



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Linear model of innovation process



*In order to accelerate technological progress in low-carbon technologies, innovation policies should be systemic*

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# IEA Technology Roadmaps

## Mapping where we need to go...

2009

2010

2011

2012

2013

2014

2015



2016

**Smart Grids  
Update**

<https://www.iea.org/roadmaps/>

Low-Carbon Technology Roadmaps



# ... Together through IEA Technology Collaboration Programmes



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