

Making Innovation Clubs a Reality

Canon Institute for Global Studies

Tokyo, 7 October 2016

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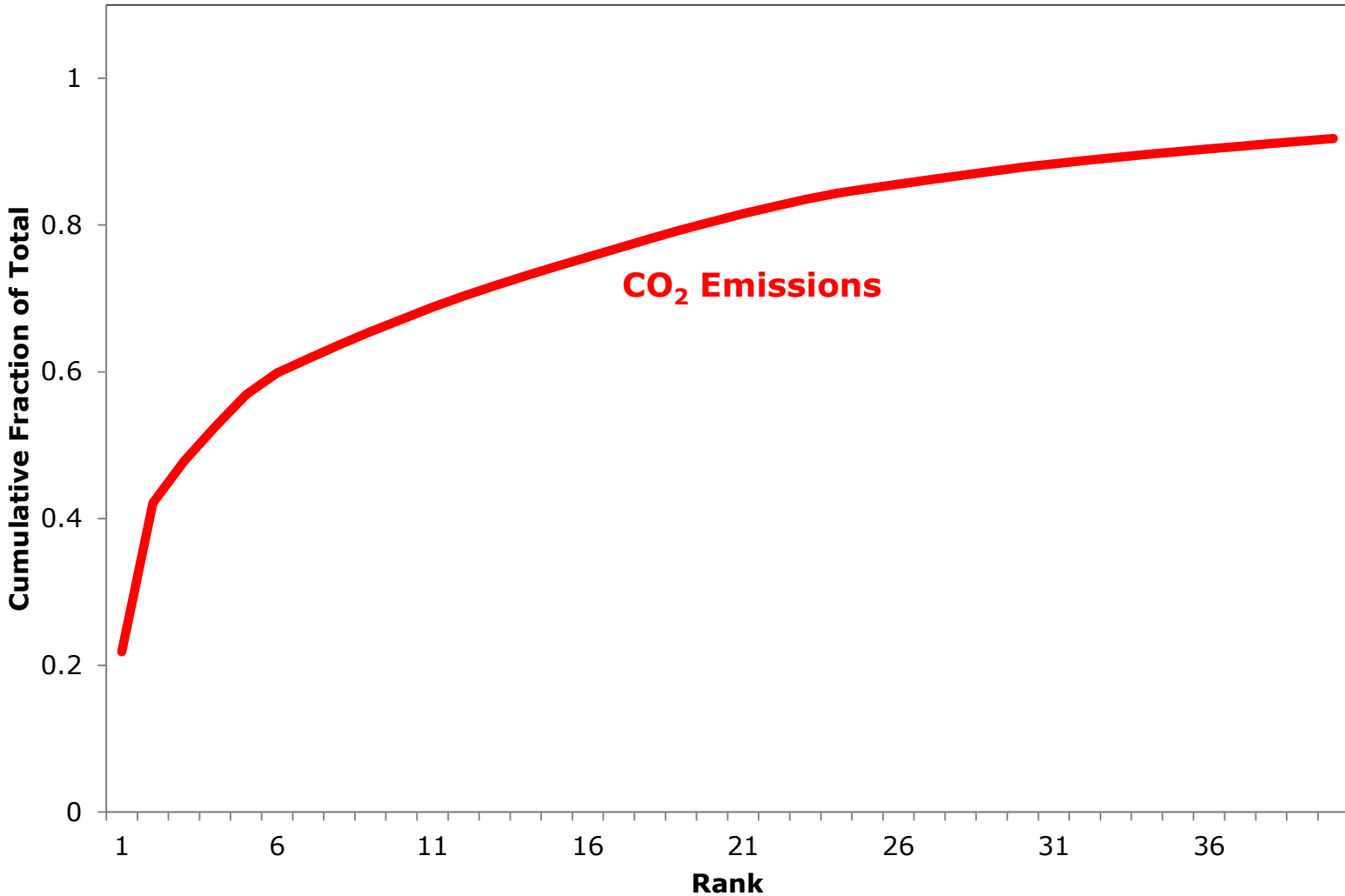
**LABORATORY ON
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UC San Diego School of Global Policy & Strategy

Two Robust Results from Prior Research

1.

**Serious Global Cooperation will
Probably Emerge “Bottom Up”
through Clubs**

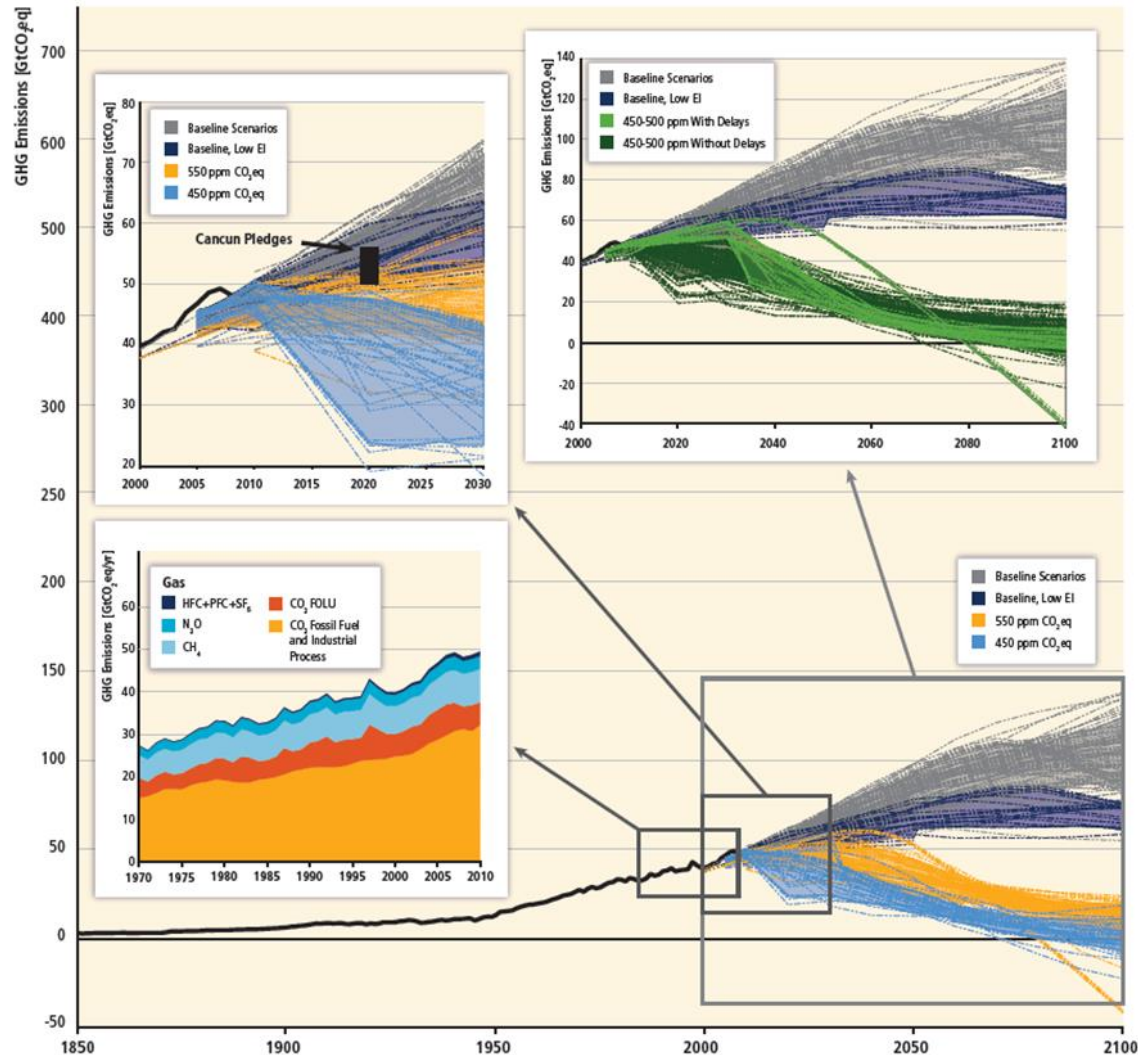
Only A Few Countries "Matter"



2.

**No Deep Cuts in Emissions are
Feasible without Technological
Transformations**

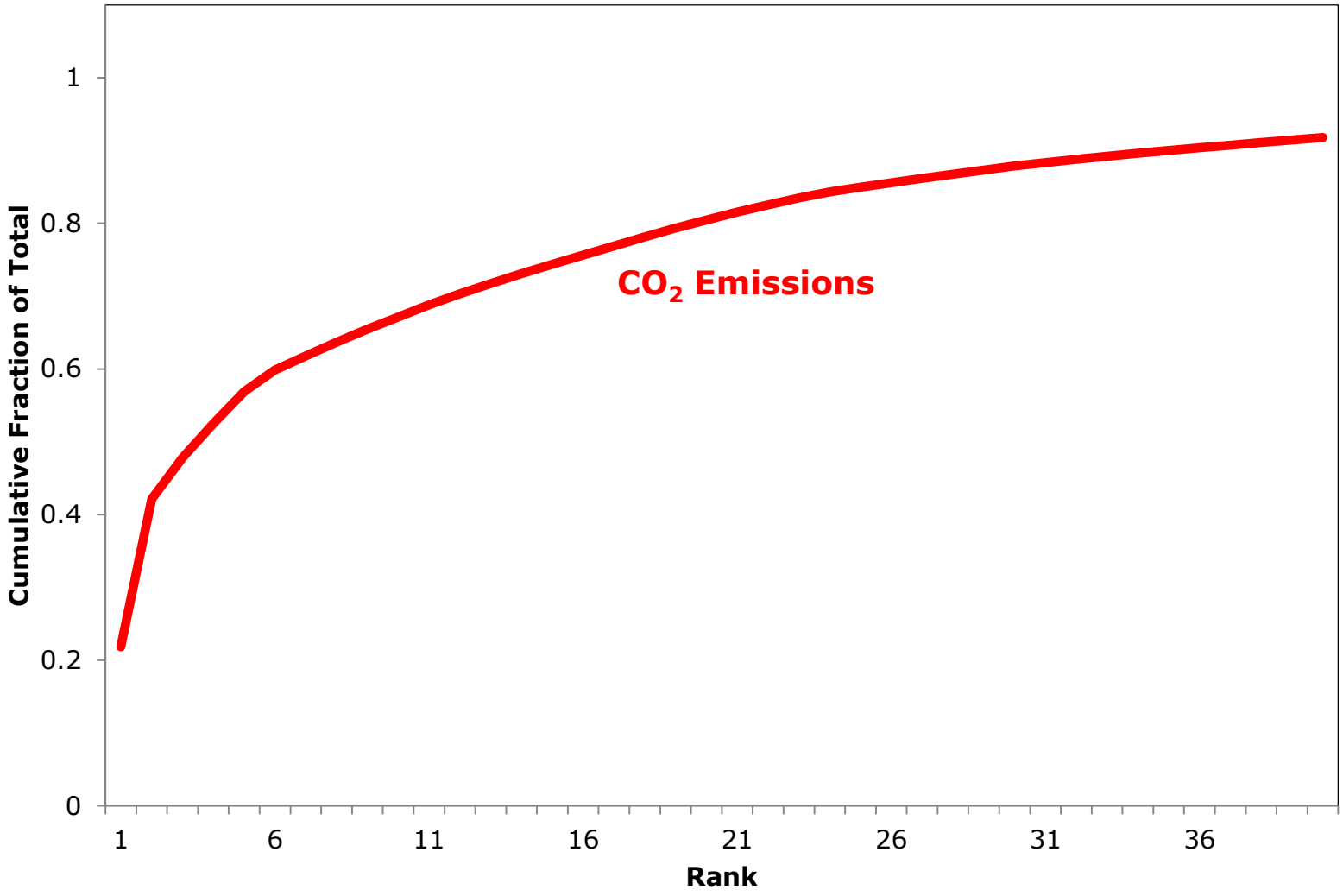
Scale of the mitigation effort needed



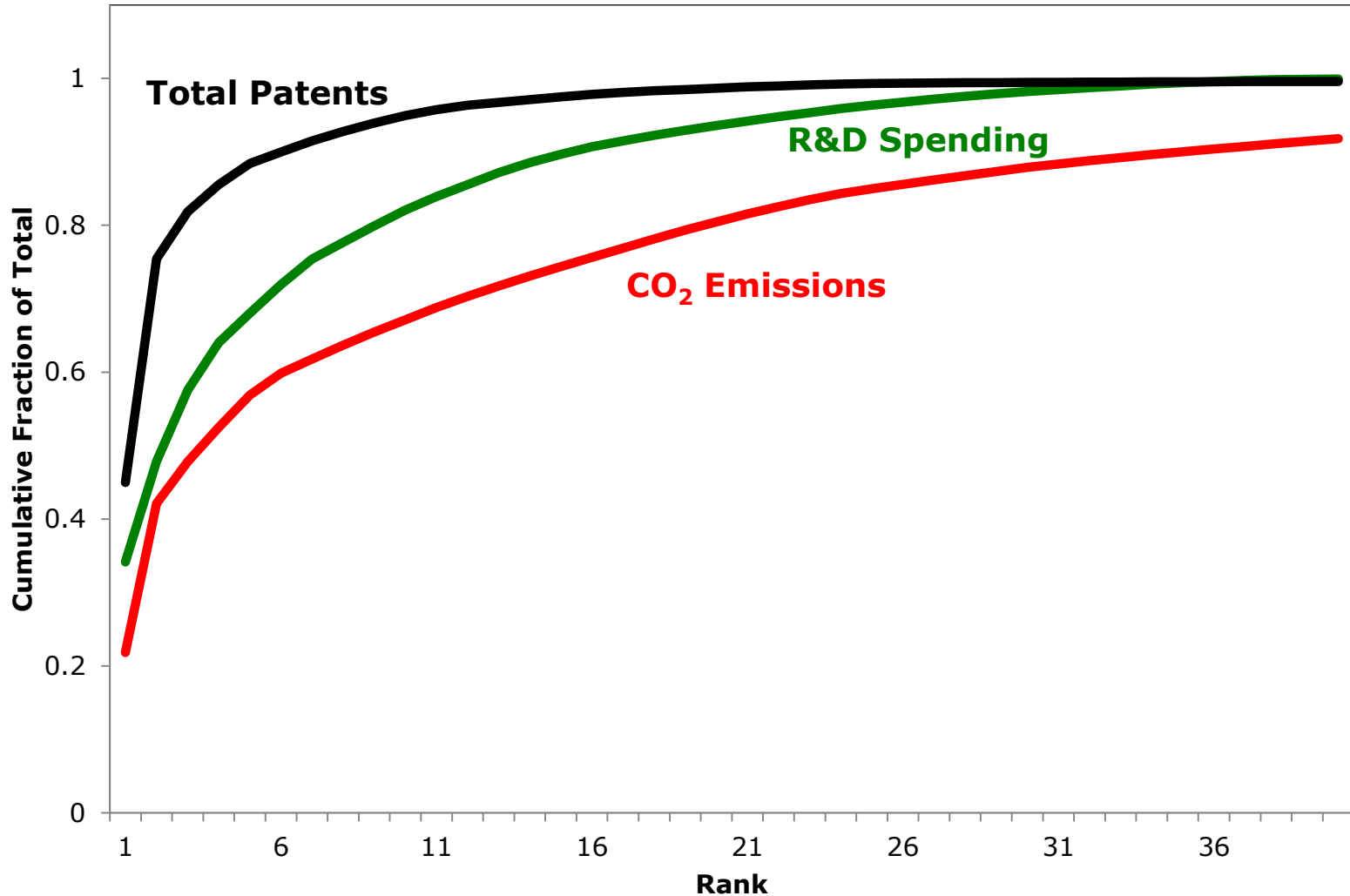
Source: reprinted from figure 1.9 in Victor, D. G. *et al.* in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (eds Edenhofer, O. *et al.*) (Cambridge Univ. Press, 2014).

**Putting These Ideas Together:
What are the Contours for an
Innovation Club?**

Only A Few Countries "Matter"



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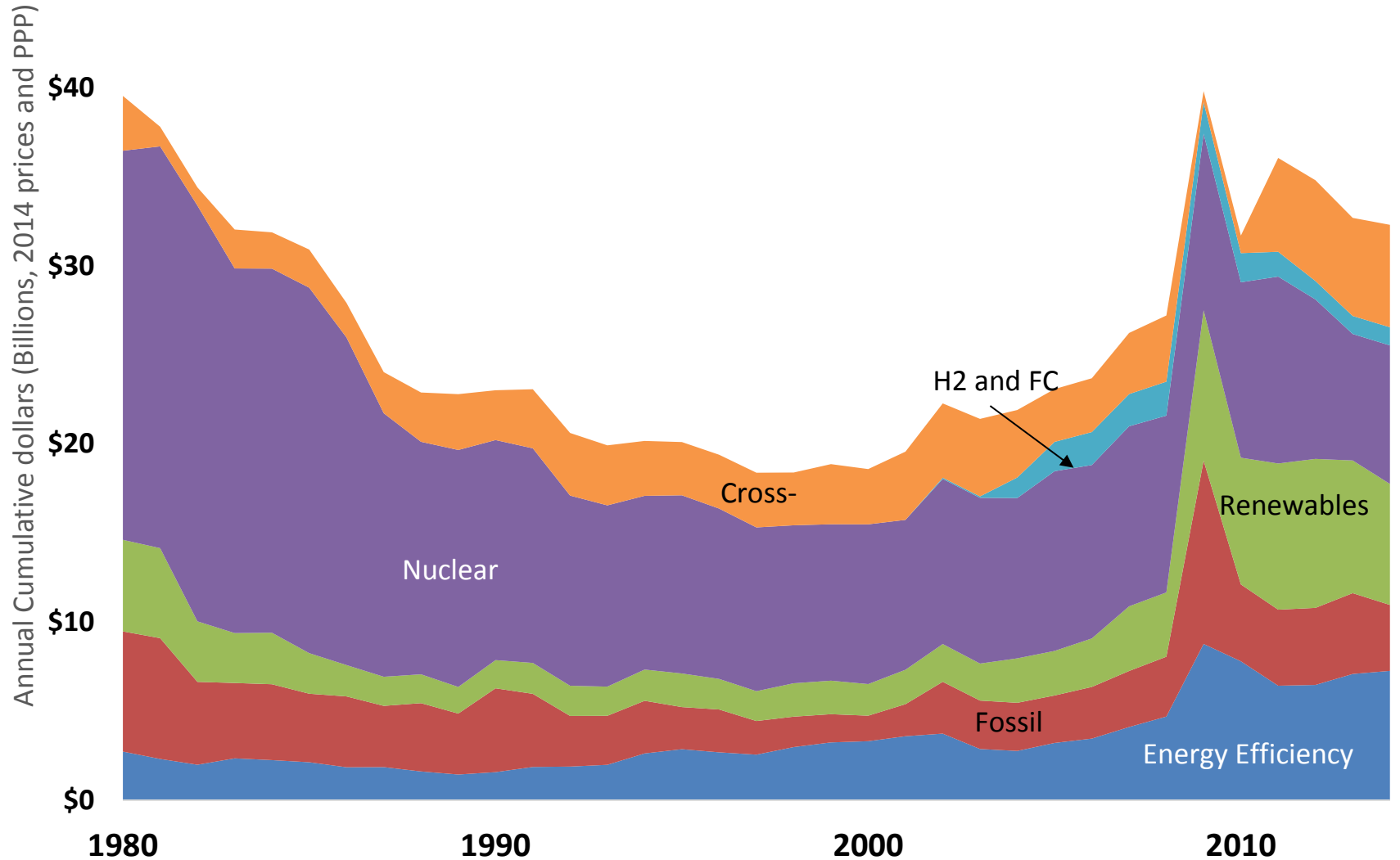
Creating a Club

Attributes	Plausible Answers
Goals	
Actions	
Members	
Incentives	

Creating a Club

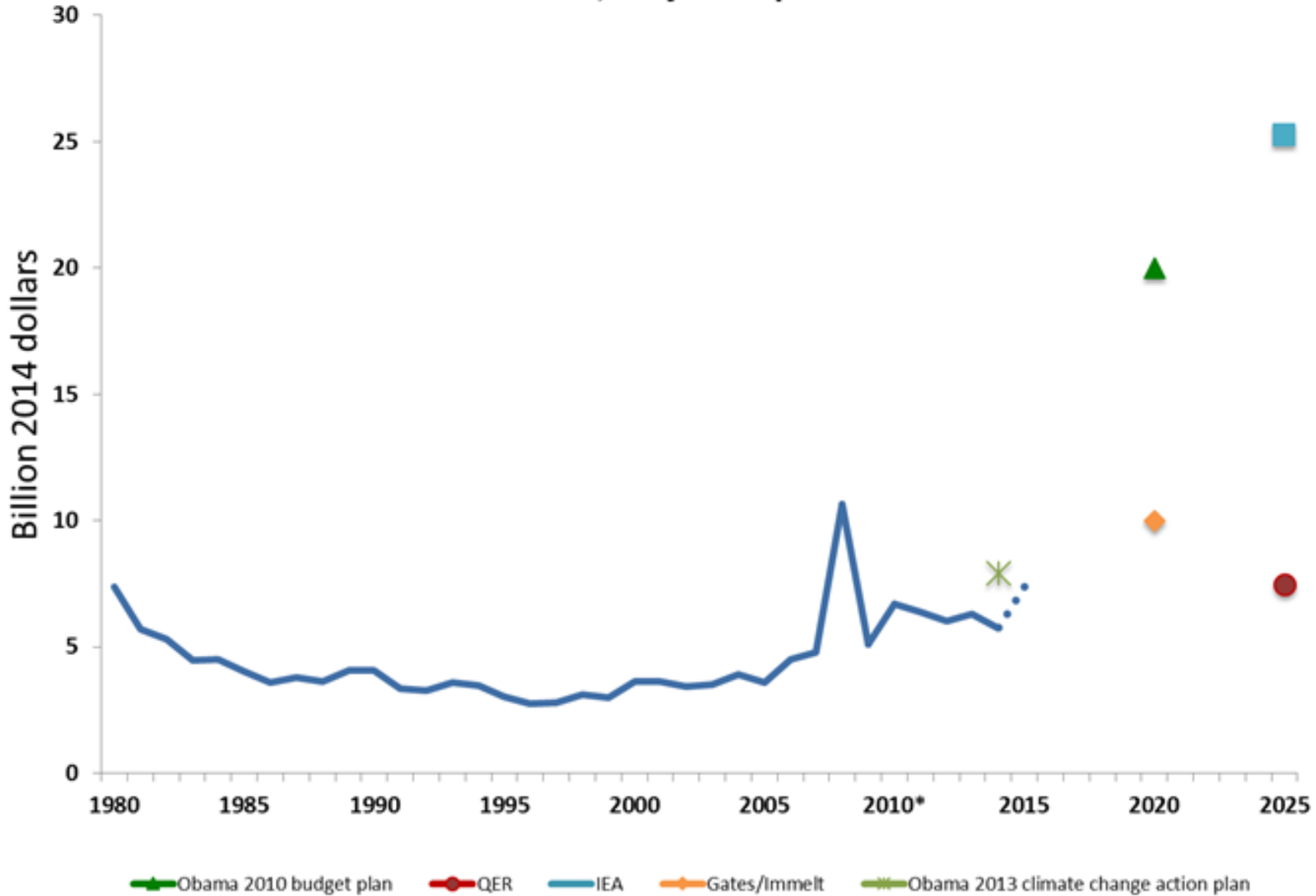
Attributes	Plausible Answers
Goals	Radically Boost RD&D
Actions	
Members	
Incentives	

Public Sector RD&D in IEA Countries



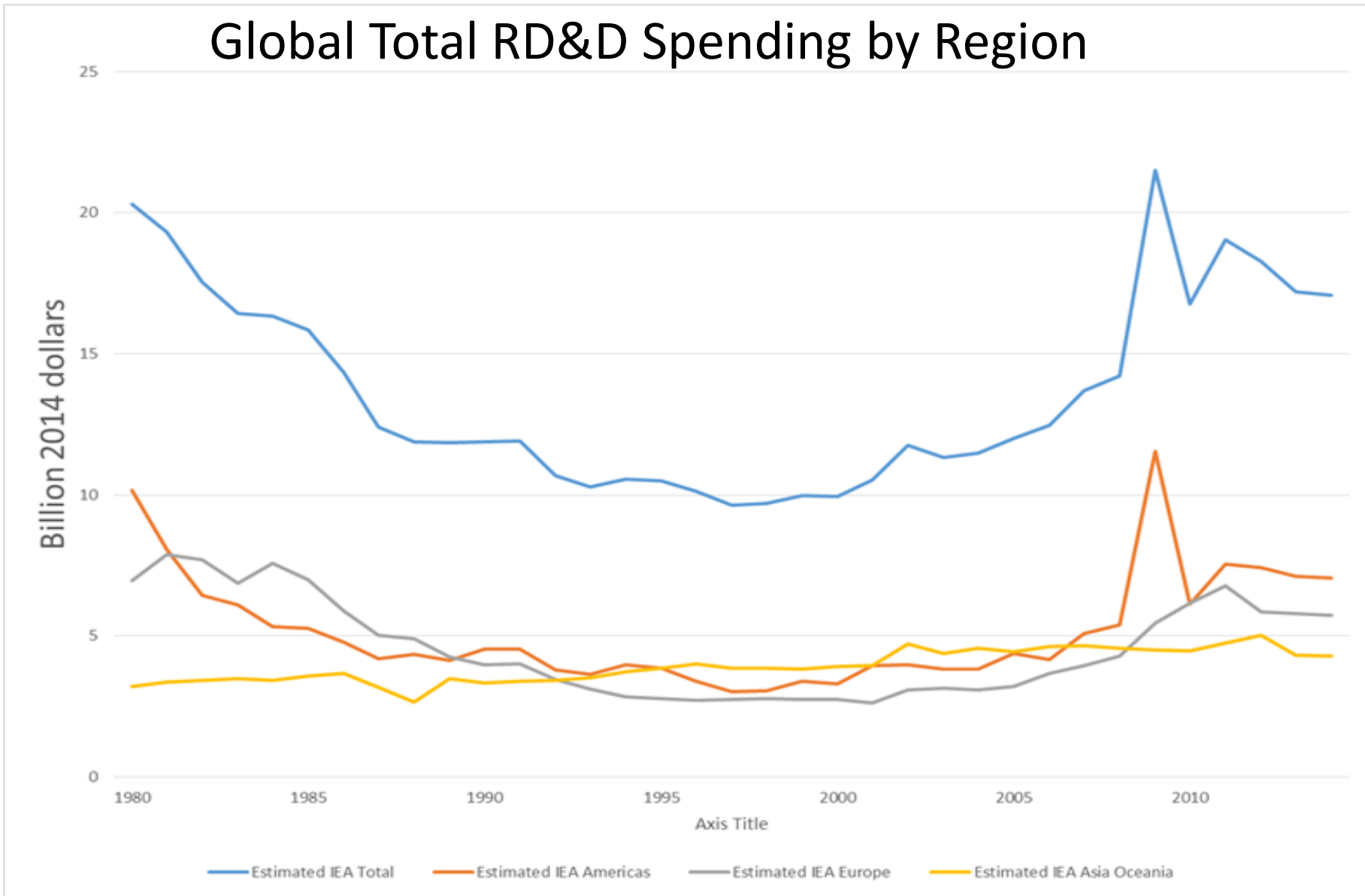
Source: International Energy Agency Energy Technology RD&D

U.S. Federal Energy RD&D Spending: 1980 to 2014, Major Proposals to 2025



Source: International Energy Agency Energy Technology RD&D; The President's Budget FY2015 & FY2016; American Energy Innovation Council "Restoring American Energy Innovation Leadership: Report Card, Challenges, and Opportunities" (2015); The President's Climate Action Plan (2013)

Global Total RD&D Spending by Region



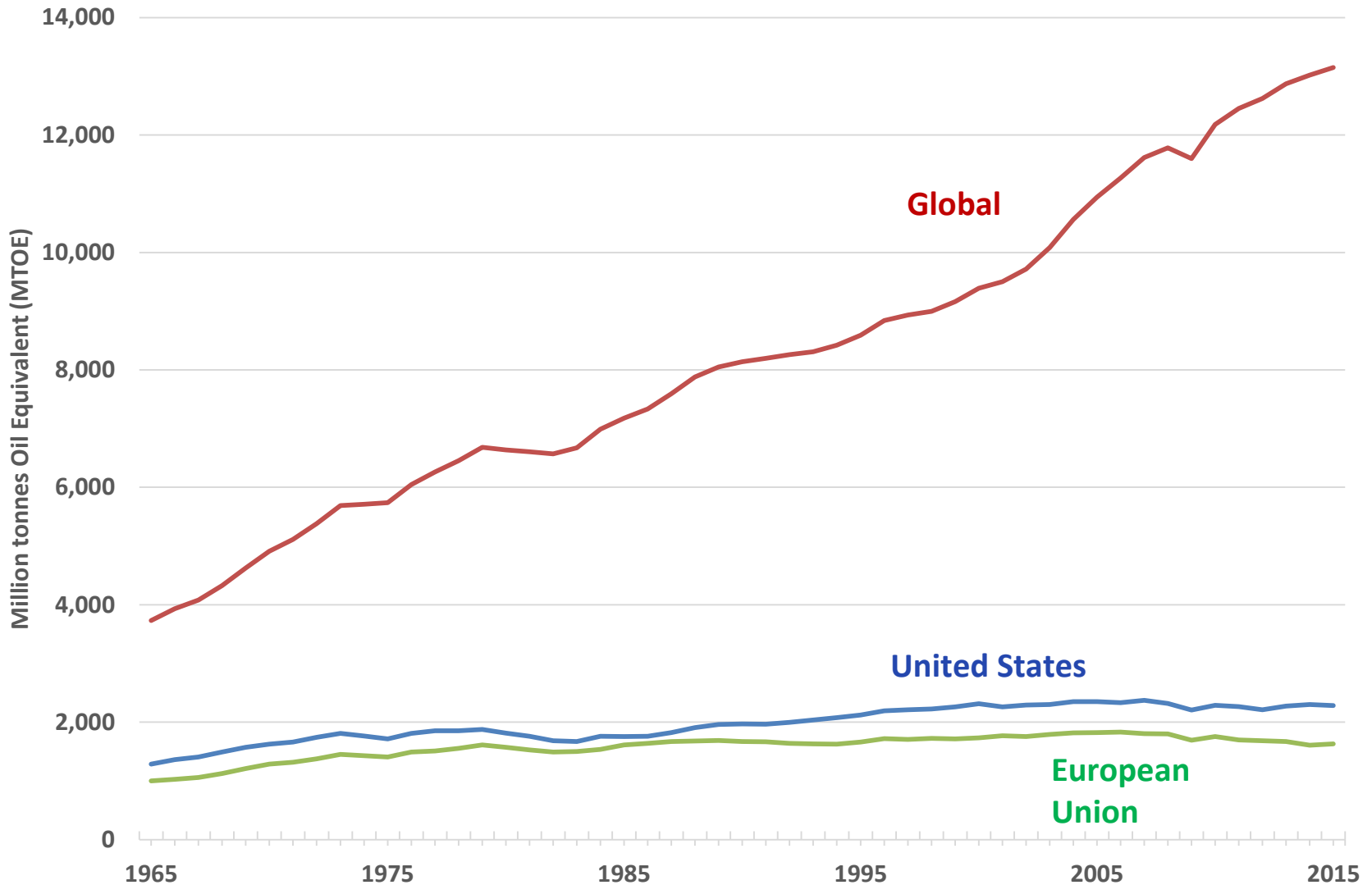
Source: International Energy Agency Energy Technology RD&D

Creating a Club

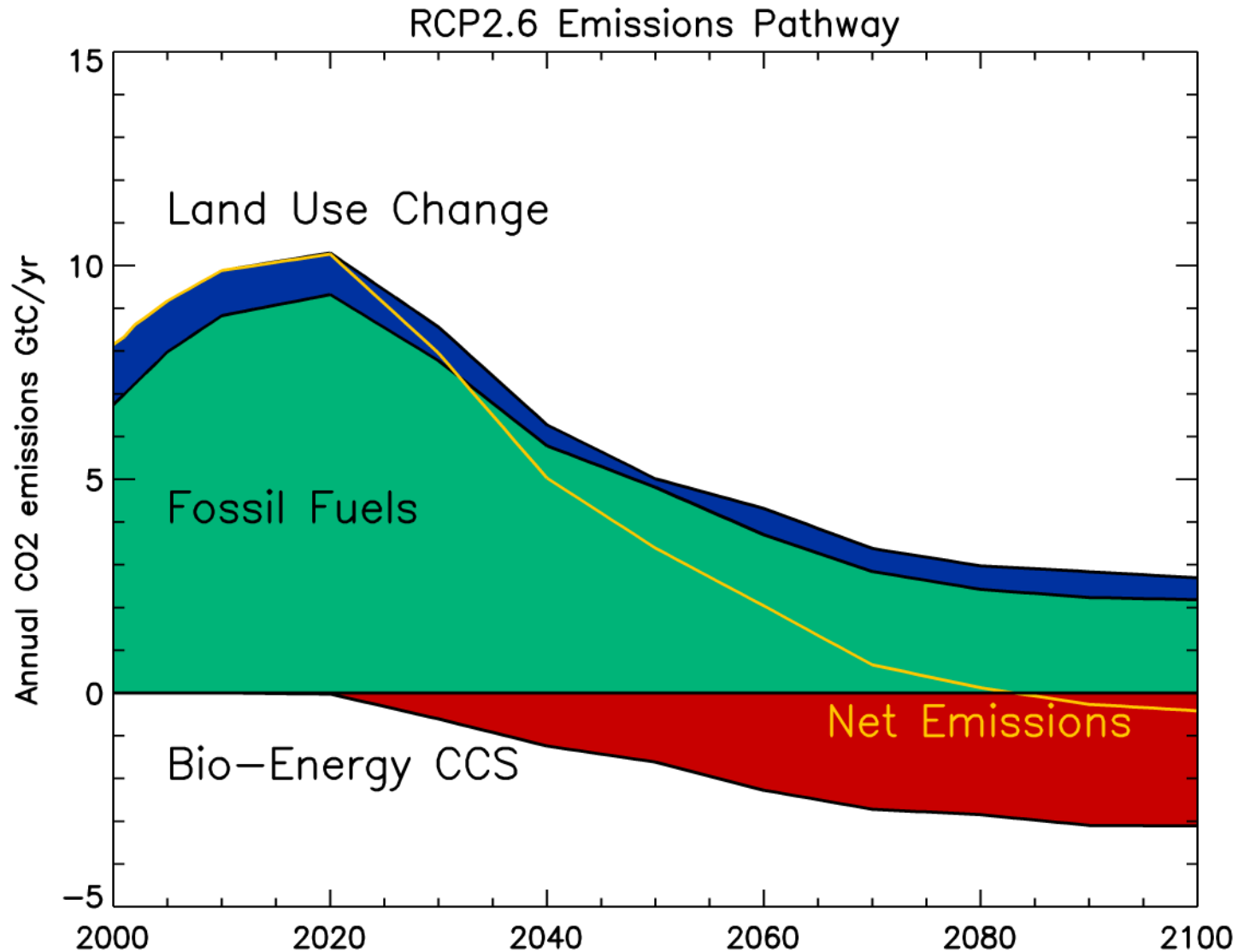
Attributes	Plausible Answers
Goals	Radically Boost RD&D
Actions	Policy coordination; joint RD&D
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Incentives	

Identifying Critical Questions

What is the Future for Demand?

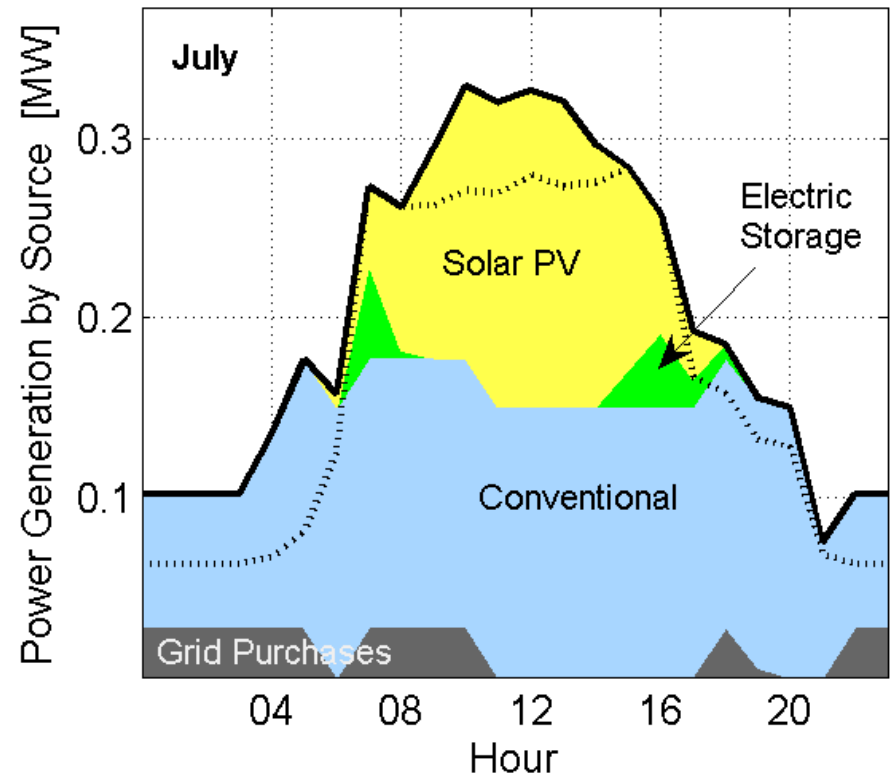
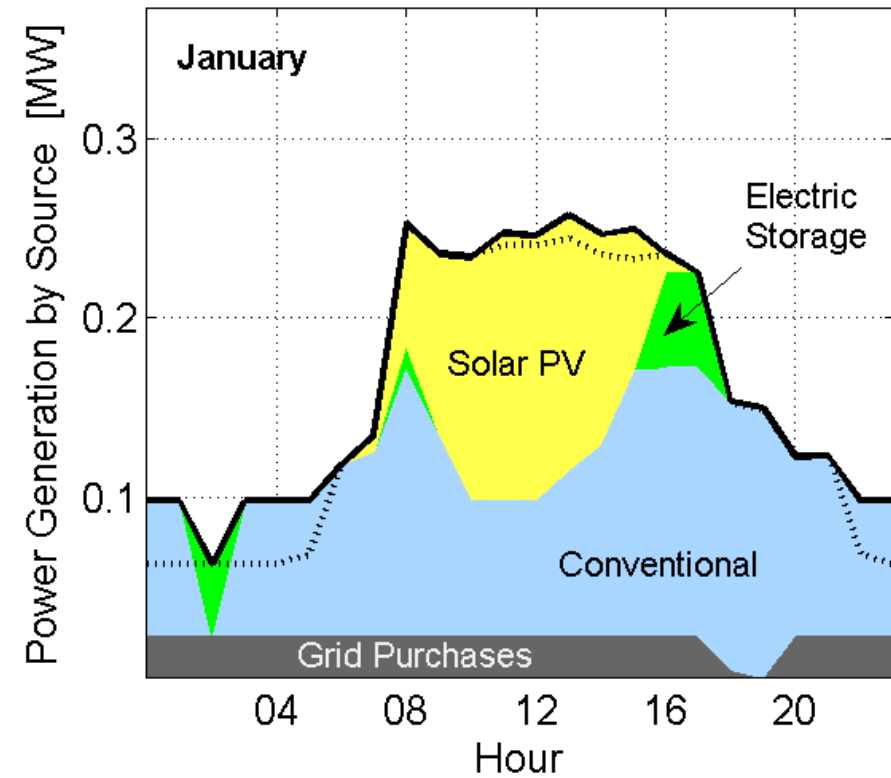


What are the Potentials for Negative Emissions?



Sources: Van Vuuren et al (2011); Graphics courtesy of Chris Jones, UK Met Office

Is Decentralization Good for Emissions?



Creating a Club

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Goals	Radically Boost RD&D
Actions	Policy coordination; joint RD&D
Members	All top innovators? Smaller overlapping groups?
Incentives	

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Creating a Club

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Goals	Radically Boost RD&D
Actions	Policy coordination; joint RD&D
Members	All top innovators? Smaller overlapping groups?
Incentives	Semi-appropriable rents? Penalties for failure?

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Key Points

- There has been lots of talking about innovation clubs but very little “doing”
- US-China bilateral is probably the best example today
- Serious clubs requires much more attention to membership (geometry) and incentives
- Japan could play a big role with selective invitations, conditional commitments and semi-appropriable market incentives

Thank You