Towards an Action Plan for TCP Enhancement

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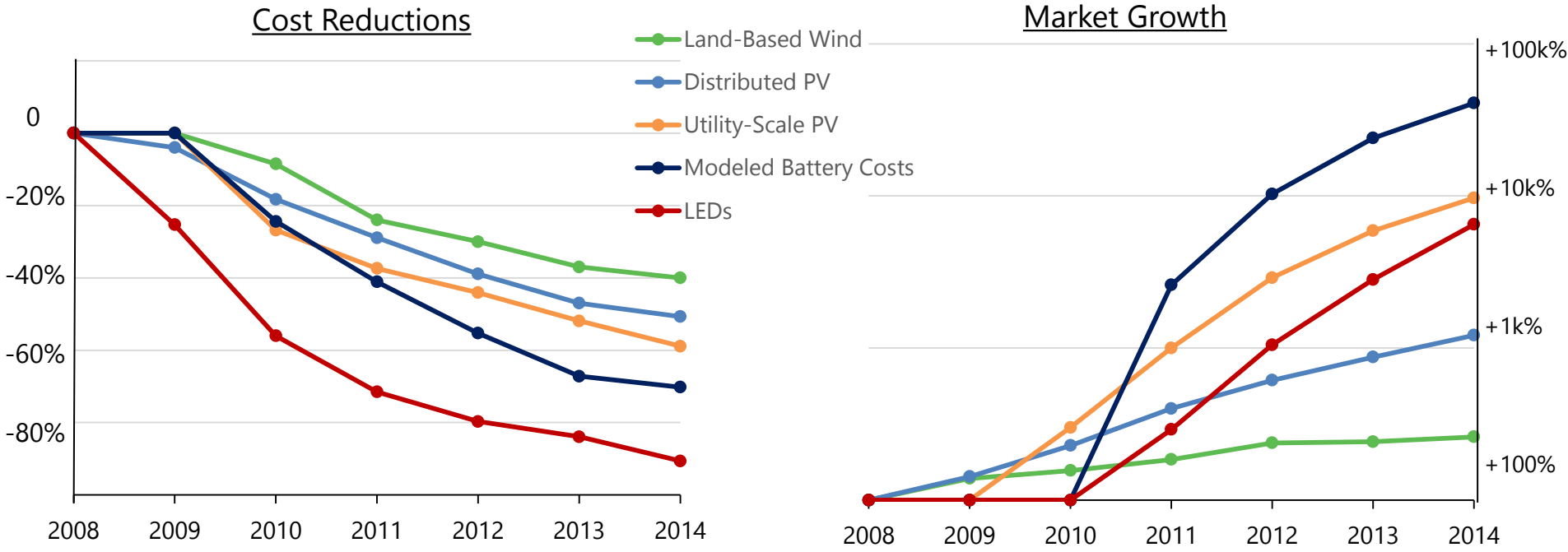
TCP Universal Meeting, 9 October 2017

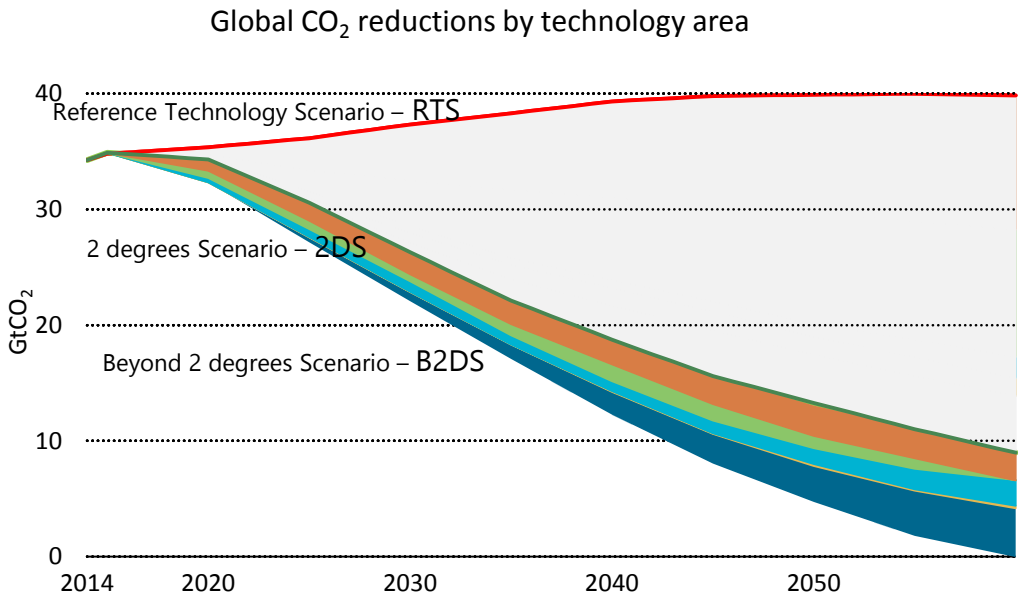
IEA

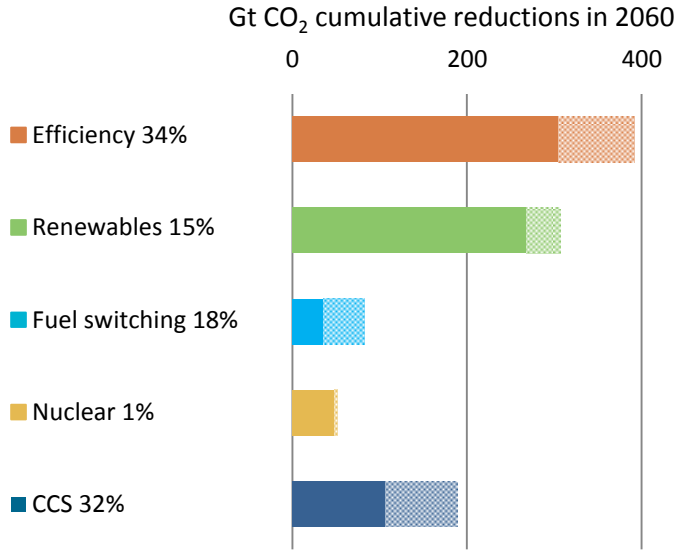
As technology costs drop, markets soar…



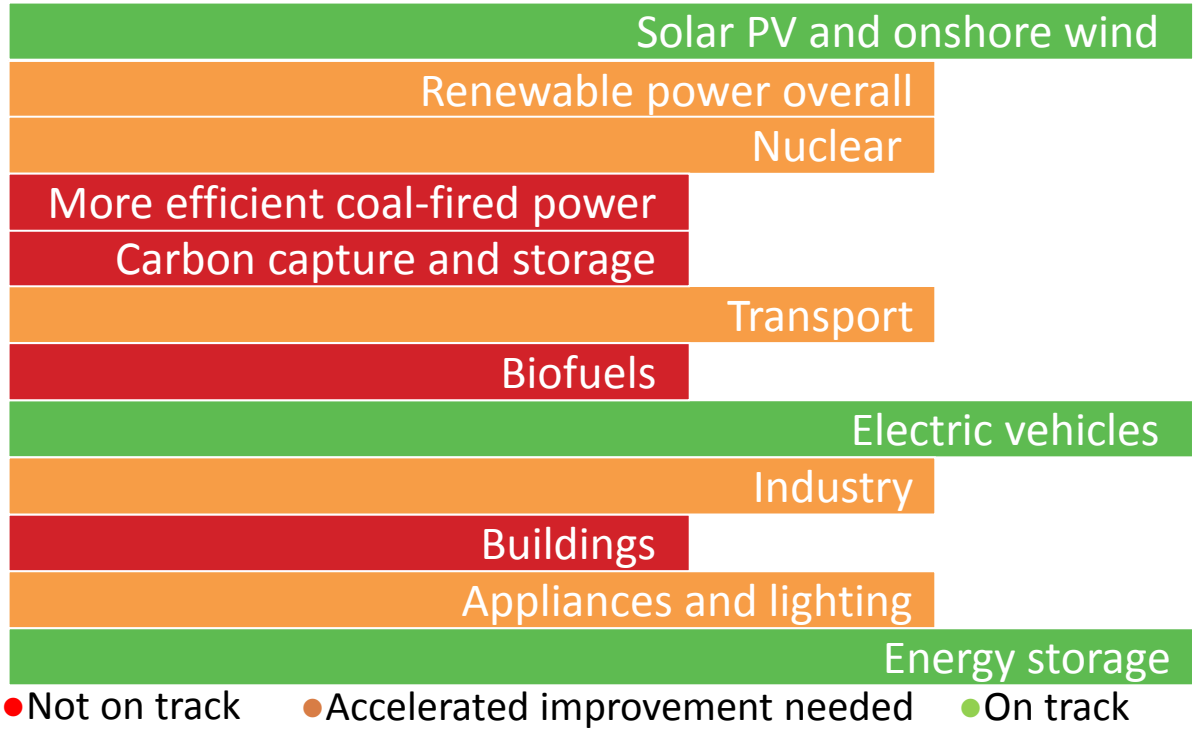
Source: Adapted from DOE, "Revolution…Now: The Future Arrives for Five Clean Energy Technologies – 2015 Update," http://www.energy.gov/eere/downloads/revolution-now-future-arrives-five-clean-energy-technologies-2015-update

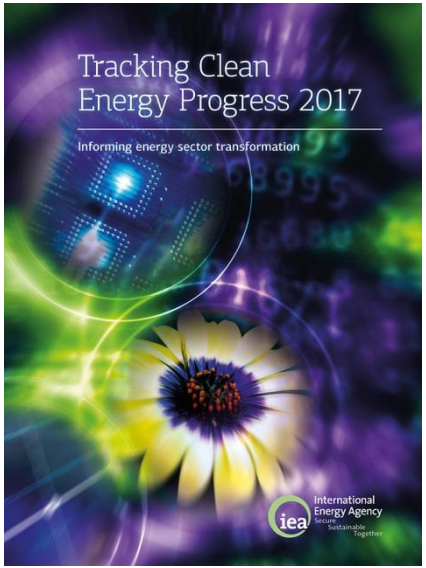
How far can technology help take us?





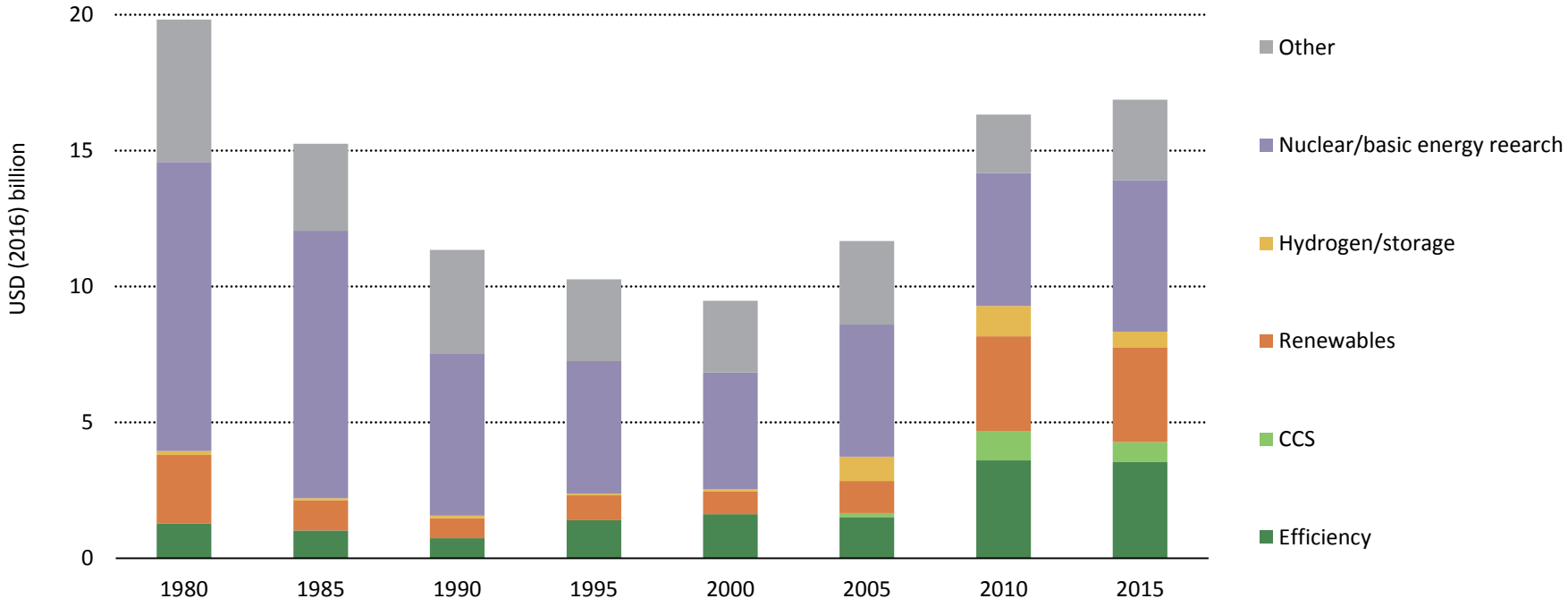
How are we doing?





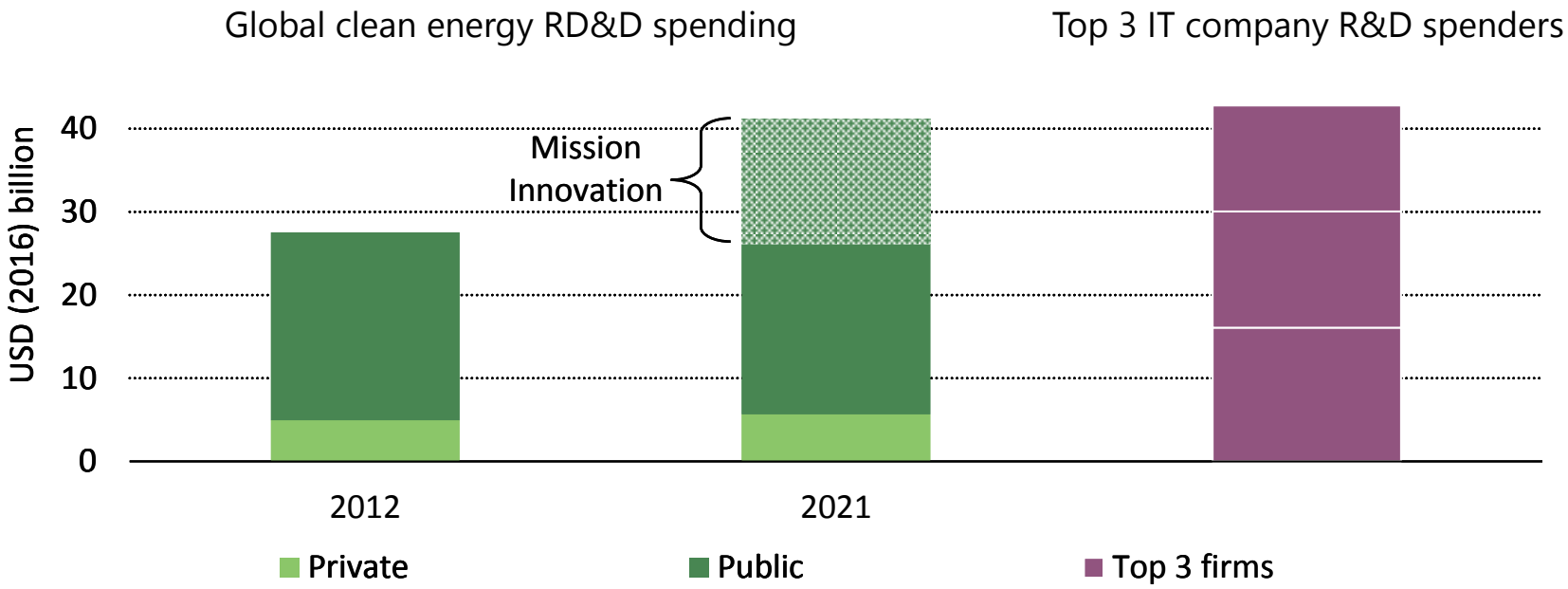
***Tracking Clean Energy Progress* (*TCEP*) highlights the overall status and recent progress of clean-energy technologies as well as providing insights to achieve their full potential**

Global clean energy RD&D spending has rebounded since 2000…



In real terms, public RD&D spending in IEA countries has bounced back since a low in 2000, with growth mostly in clean energy technologies.

… however, a strong boost is needed going forward



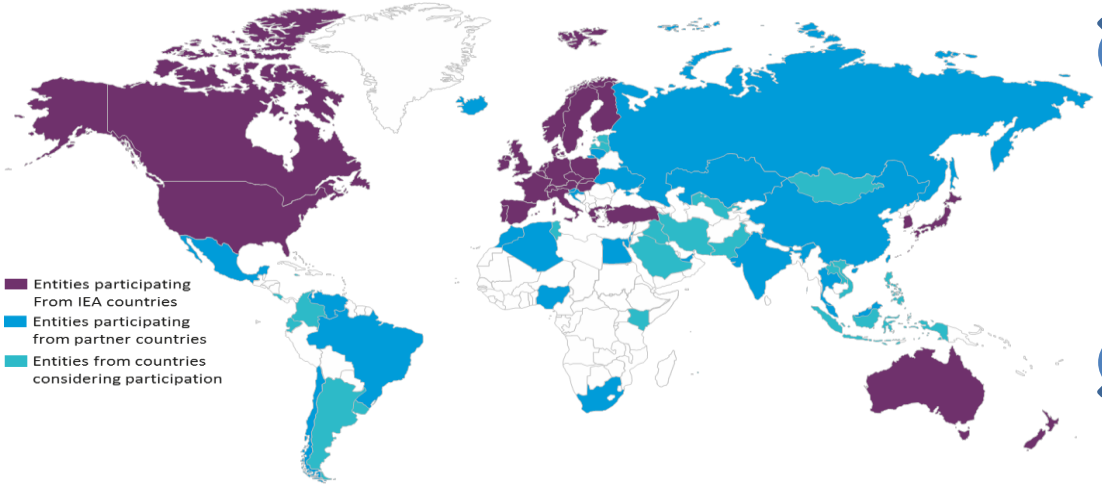
Global RD&D spending in efficiency, renewables, nuclear and CCS plateaued at $26 billion annually, coming mostly from governments. Mission Innovation could provide a much needed boost.

TCP expertise and global network

- **38 TCPs, five groups:**
  - Cross-cutting activities (2)
  - End use and energy efficiency (14)
  - Fossil fuels (5)
  - Fusion power (8)
  - Renewable energy and hydrogen (9)

TCP / IEA inter-relations:

- *34 TCPs input into IEA analysis / modelling*
- *30 TCPs at IEA events / workshops*
- *23 TCPs in third-party events with the IEA*



- 6,000 experts
- 2,000 topics
- 300 public or private organisations
- 52 countries
- 38 Technology Collaboration Programmes
- 4 intergovernmental organisations

Since 2015 – progress, but much more to do…

- **First-Ever Universal TCP meeting (2015)**
  - 40th anniversary → rebranded Technology Collaboration Programmes
  - Mandates from IEA Ministerial – IEA as global clean energy hub; association
  - Raise visibility of TCPs – "Highlights and Outcomes" publication, website revamped; various events (COP21, Bali Clean Energy Forum, Mission Innovation workshops, CEM); TCP-wide survey (90% response rate); desk officer engagement

- **2nd TCP Universal Meeting (2017)**
  - New IEA Medium-Term Strategy for Research and Technology 2018-2022
  - Preparing for 2017 IEA Ministerial meeting (7-8 November)
  - New Action Plan for TCP Enhancement
    - Four sections – all geared towards specific, actionable recommendations
    - All of us need to do our parts for all of us to be successful…

1. Enhanced TCP-IEA Collaboration

TCPs feed into, complement, and benefit from IEA analysis, including *Energy Technology Perspectives*, *Tracking Clean Energy Progress, World Energy Outlook,* roadmaps and market reports.

Actions:

1.1 – Enhance IEA Secretariat's capabilities to enhance TCPs

1.2 – Modernize / enhance TCP data to be able to better map and characterise TCP efforts

1.3 – Maximise number of IEA work streams that utilise TCP expertise

1.4 – Achieve better alignment between TCP activities and IEA analysis

1.5 – Carry out strategic review of CERT / Working Parties to identify improvements

2. Engagement with governments and the private sector

While entities from IEA members presently represent 80% of TCP participants, there is strong interest to also engage emerging economies; the private sector can also provide important contributions.

Actions:

2.1 – Enhance IEA's capabilities to support TCP outreach efforts

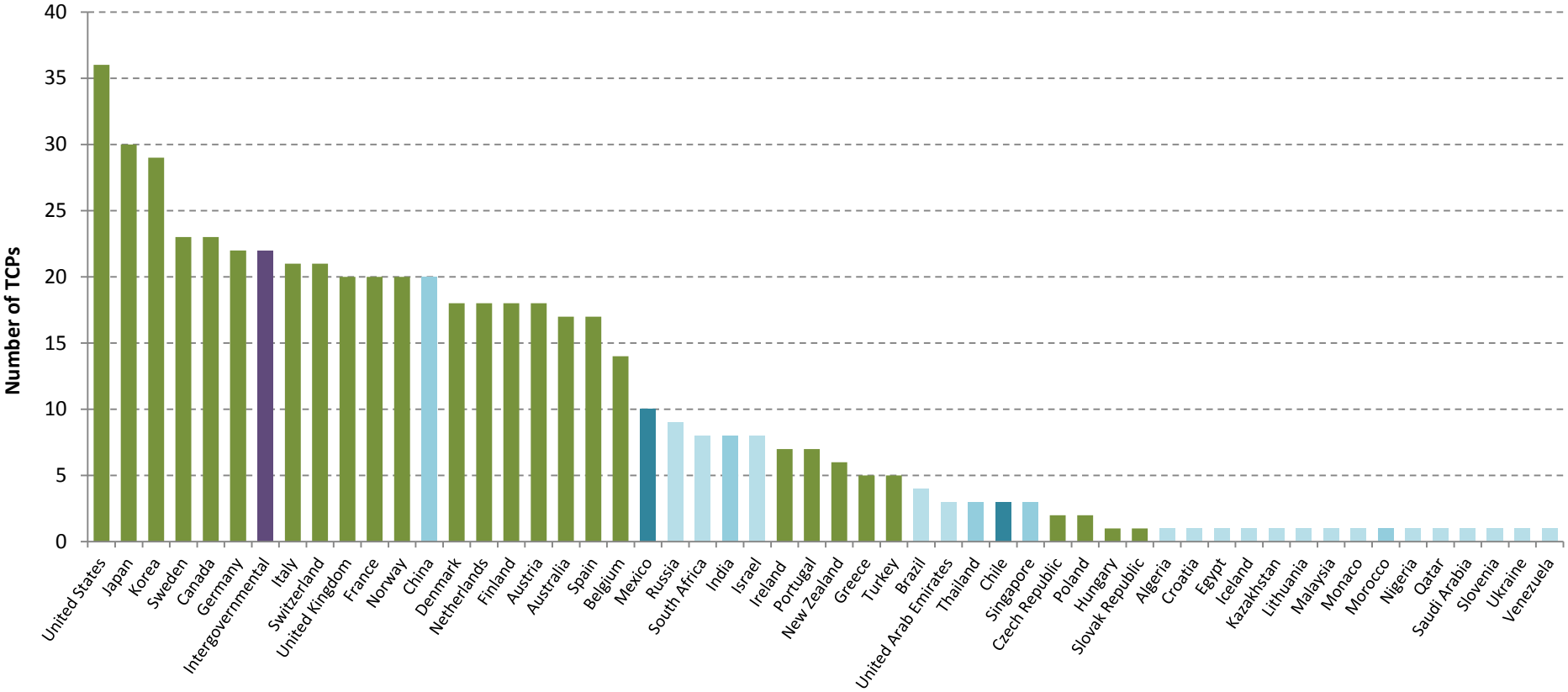
2.2 – Assist with identifying appropriate "points of contact" in partner countries

2.3 – Further involve TCPs in IEA regional events in/with partner countries

2.4 – Closer TCP collaboration with IEA industry stakeholder groups

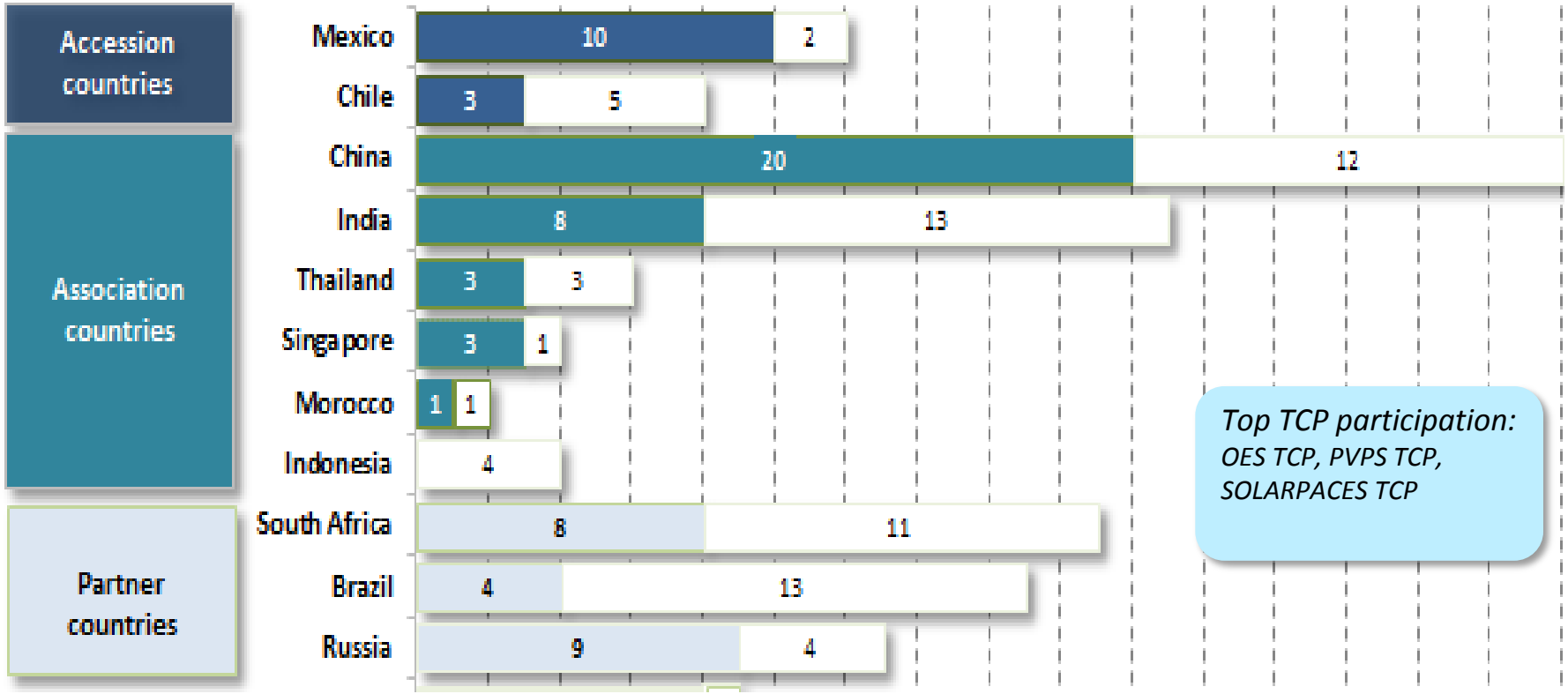
2.5 – Help with identifying opportunities for joint activities with industry and others

Government participation in TCPs



- **Top 3 IEA member countries: United States, Japan and Korea**
- **Top 3 Partner countries: China, Mexico and Russia**

TCP interest in engaging further with IEA family of countries



3. Interactions with multi-lateral initiatives

TCPs are already co-operating with over 70 distinct multilateral entities worldwide, notably under the Clean Energy Ministerial (CEM) and Mission Innovation (MI).

Actions:

3.1 – Enhance IEA's capabilities to support TCP interlinkages with other initiatives

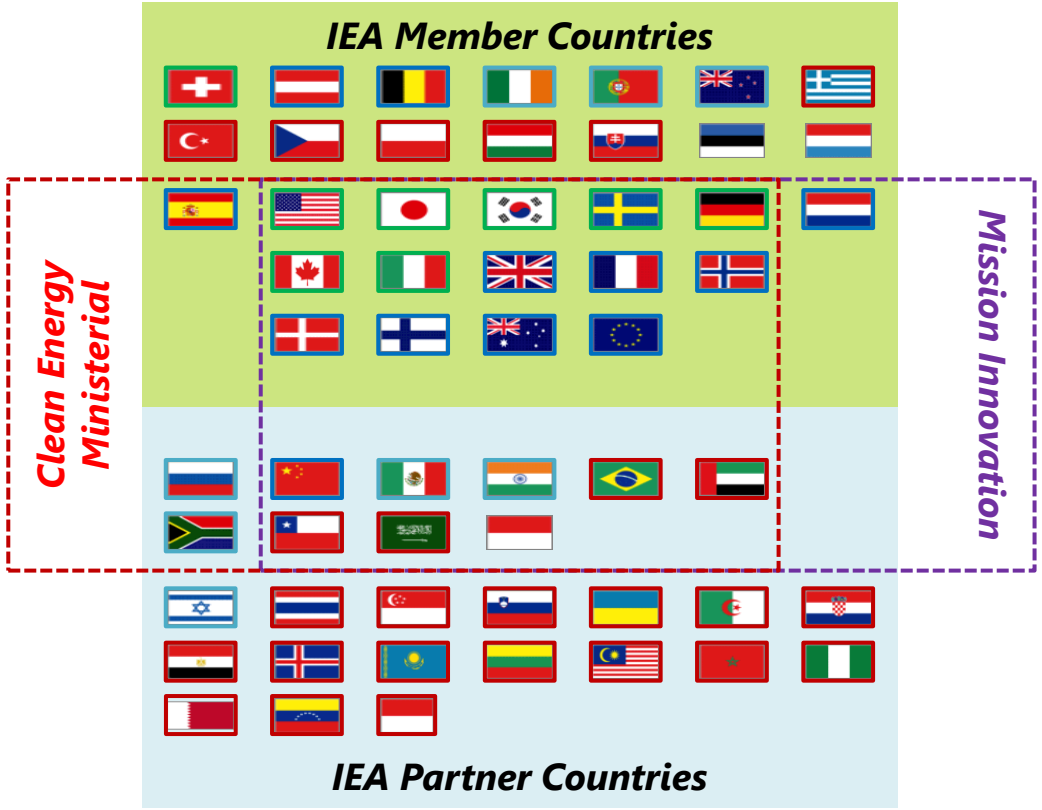
3.2 – Organise and facilitate joint events, notably with CEM and MI

3.3 – Leverage IEA's network to increase awareness and develop additional capacities

3.4 – Strategic analysis and global mapping to identify additional TCP opportunities

3.5 – Enhance TCP coordination of cross-cutting initiatives

Mapping participation in IEA, CEM, MI and TCPs



LEGEND:
TCP participation

21+	11-20
6-10	1-5

4. Awareness, communication, visibility

The IEA and individual TCPs each carry out communication activities with both expert and non-expert audiences. A new Communication Framework expanded the range of opportunities.

Actions:

4.1 – Increase TCP visibility on IEA website

4.2 – Regular visibility of TCPs in monthly IEA newsletter and distribute to whole TCP list

4.3 – Produce short films

4.4 – Develop TCP communication toolkit

4.5 – Strengthen visual identity – e.g. new TCP logo; organize training sessions

All of us need to do our parts for all of us to be successful…

IEA (Members and Secretariat)
• Make concerted efforts to raise resources for implementation of Action Plan • Provide TCPs with strategic directions to maximise impact and mutual benefits • Further raise TCP visibility, enhance communication, and strengthen interlinkages with multi-lateral efforts
Governments participating in TCPs
• Consider participation in TCPs as a means to pursue national energy research and technology strategies • Ensure IEA Secretariat and the individual TCPs of interest are provided with resources and top-level talent • Provide strategic directions and guidance to TCPs through the CERT, Working Parties, and TCP ExCos
TCPs
• Dialogue and exchange of info with IEA Secretariat and governments on TCP strategy, activities and resources • Seek to expand participation to maximise inputs and outputs of TCP activities • Ensure transparency and accountability of operations

Today's strategic conversation

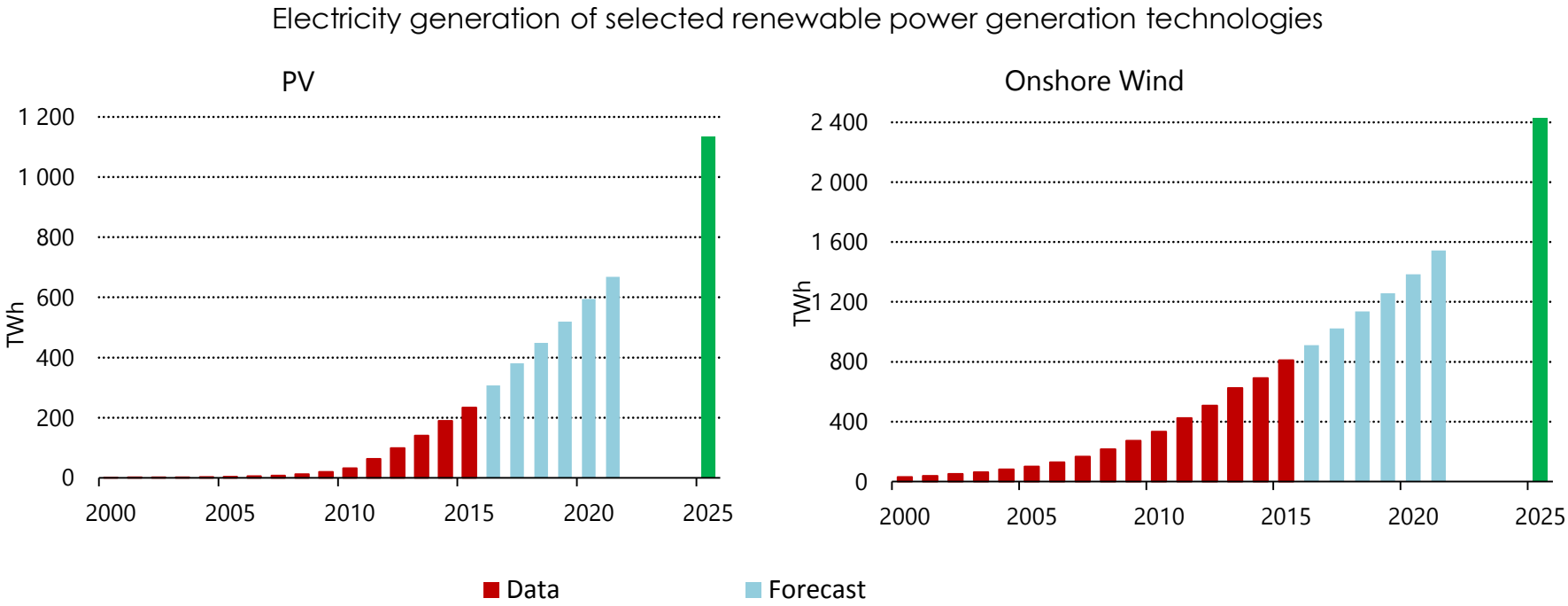
- 2015-17 progress provides foundation for further enhancements
- Vast untapped potential remains, but we need actionable ideas
- Ground rules – be concise, specific and direct
- Take advantage of side meetings with IEA desk officers, partner country liaisons, governments, and among each other, etc.
- Execution … a question of ambition!

www.iea.org/tcp

IEA

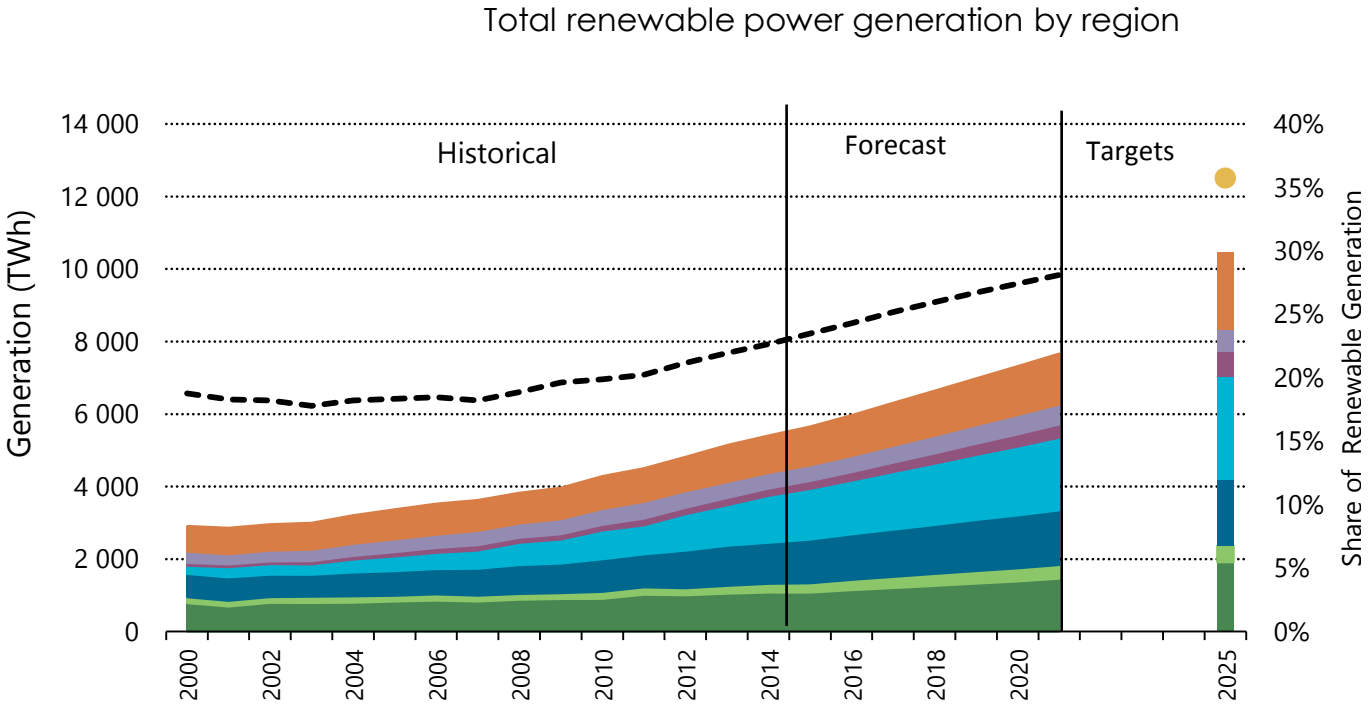
Extra slides

Solar PV and wind are still leading the transition…



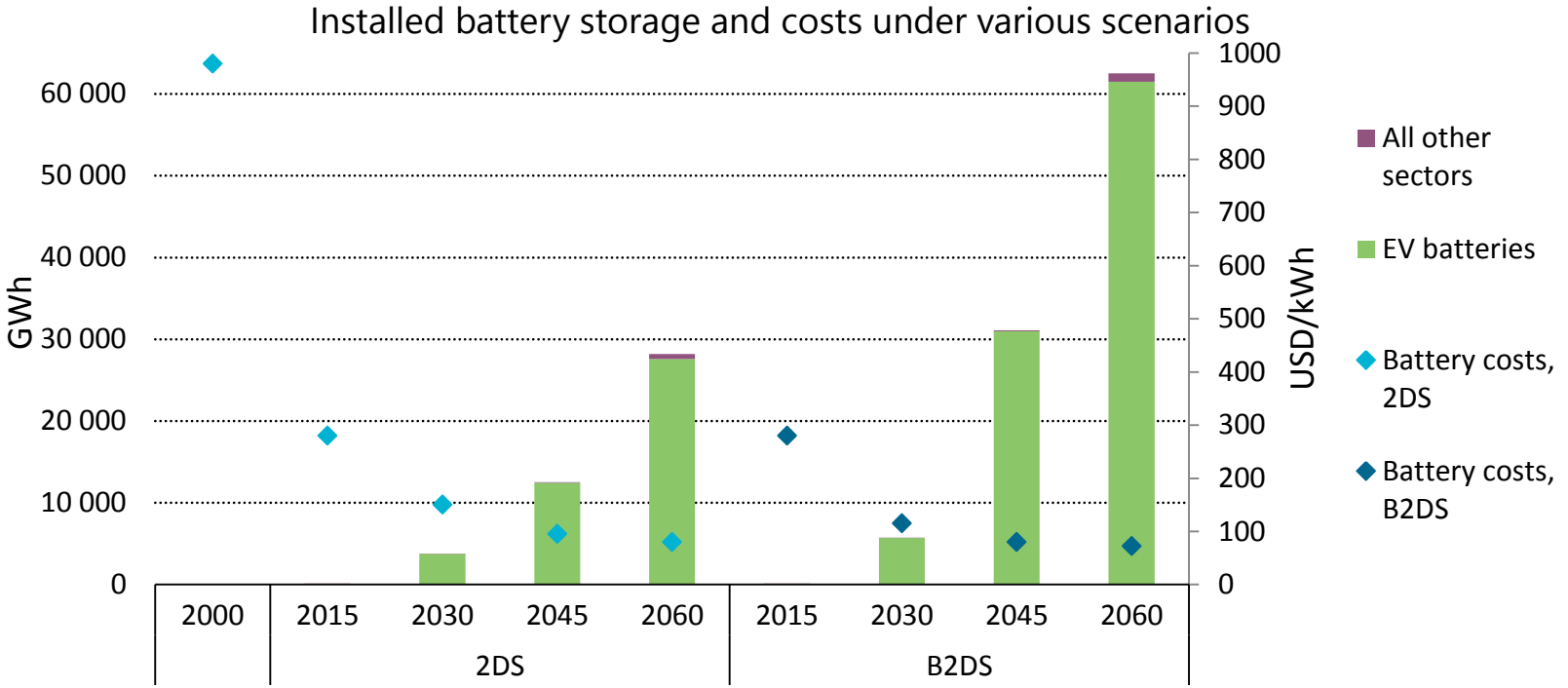
Solar PV and onshore wind electricity generation are expected to grow by 2.5 times and by 1.7 times, respectively, over 2015-20

… but can't make up for other low-carbon generation sources



While renewable power additions keep breaking records, they need to grow much faster to reach the 2DS electricity generation targets. Progress on early-stage technologies also needs to accelerate.

Can we enact a storage revolution



Batteries experience a huge scale-up in the B2DS, with EV battery markets leading other sectors in size