

MISSION INNOVATION

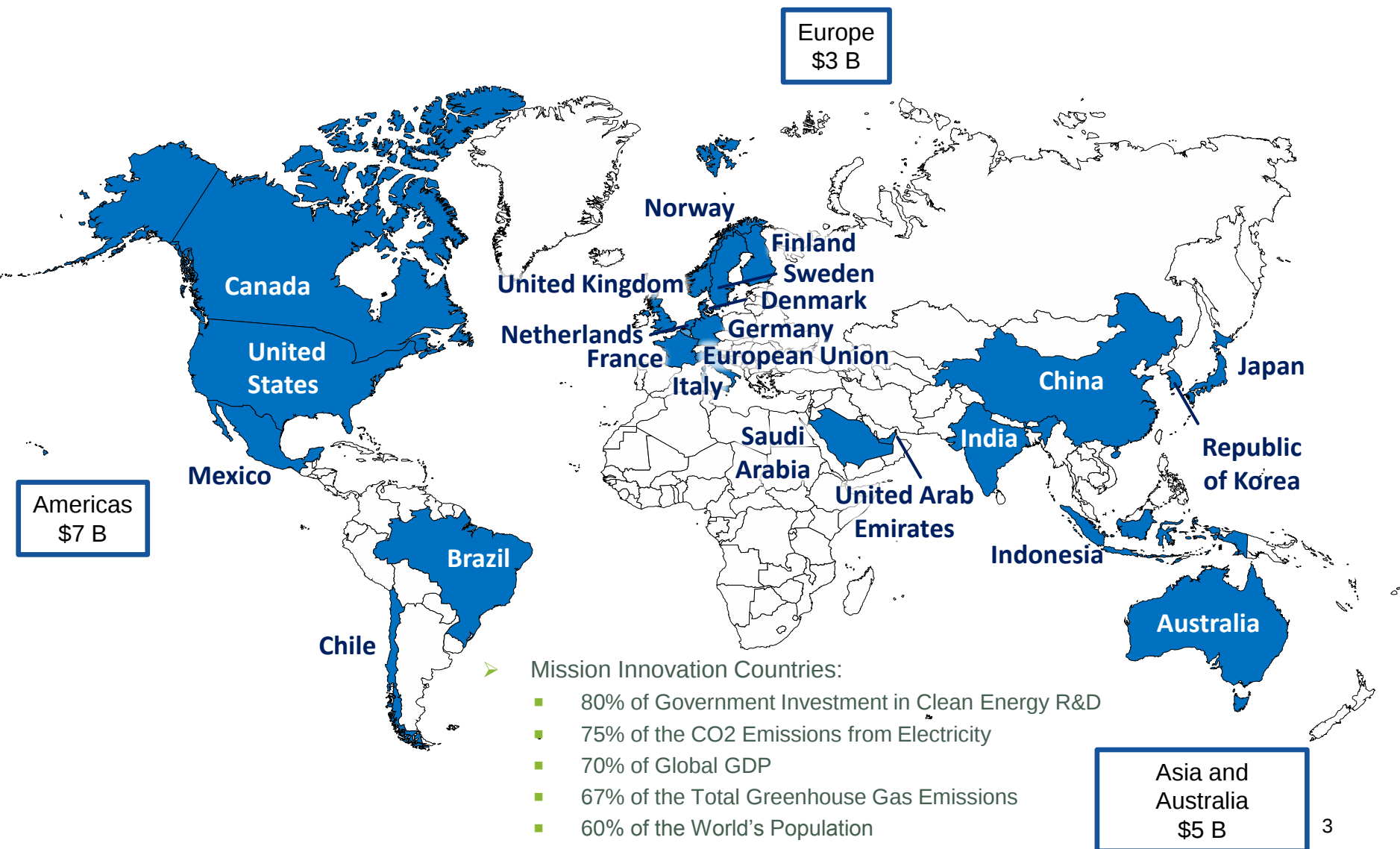
Presentation to the 2nd Universal IEA
TCP Meeting
October 2017

Mission Innovation's Aims & Objectives

- Mission Innovation (MI) is a global initiative of 22 countries and the European Union seeking to **strengthen international clean energy RD&D** in order to **dramatically accelerate clean energy innovation** with the goal of **making clean energy widely affordable**.
- As part of the initiative, participating countries have **committed to seek to double their governments' clean energy research and development (R&D) investments over five years**, while **encouraging greater levels of private sector investment** in transformative clean energy technologies.
- These additional resources will dramatically accelerate the availability of the advanced technologies that will define a future global energy mix that is clean, affordable, and reliable.



22 Countries & EU



Our Mission Statement:

In support of economic growth, energy access and security, and an urgent and lasting global response to climate change, **our mission is to accelerate the pace of clean energy innovation** to achieve performance breakthroughs and cost reductions **to provide widely affordable and reliable clean energy solutions** that will revolutionize energy systems throughout the world over the next two decades and beyond.

The MI Action plan defined 4 objectives:

1. A substantial **boost in public-sector investment** in clean energy R&D at the national level of MI members;
2. **Increased private sector engagement and investment** in energy innovation, particularly in key Innovation Challenges;
3. **Many new or strengthened** voluntary **cross-border networks and partnerships** on energy innovation, greater engagement from innovators, and accelerated progress in addressing specific Innovation Challenges;
4. **Greater awareness** amongst MI members and the wider clean energy community of the transformational potential of energy innovation, the progress being made, and the remaining critical clean energy innovation gaps and opportunities.

Mission Innovation – Seven “Innovation Challenges”

- Innovation Challenges are global calls to action aimed at accelerating research, development and demonstration in areas where MI members believe increased international attention is needed – making clean energy more affordable, helping us all deliver on our climate change, energy access and energy security goals.

		Australia	Brazil	Canada	Chile	China	Denmark	EC	Finland	France	Germany	India	Indonesia	Italy	Japan	Mexico	Norway	Republic of Korea	Saudi Arabia	Sweden	The Netherlands	UAE	UK	USA
1	Smart Grids Innovation Challenge	Participant	Participant	Participant	Participant	Lead	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
2	Off Grid Access to Electricity Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
3	Carbon Capture Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
4	Sustainable Biofuels Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
5	Converting Sunlight Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
6	Clean Energy Materials Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant
7	Affordable Heating and Cooling of Buildings Innovation Challenge	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant	Participant



Lead



Participant

Mission Innovation's Challenges

- As part of Mission Innovation, the UK led the development of 7 global 'innovation challenges' launched at COP22. Work plans for these challenges were announced at the recent Mission Innovation Ministerial in Beijing. The Challenges are:
 1. **Smart Grids** – to enable future grids that are powered by affordable, reliable, decentralised renewable electricity systems;
 2. **Off-Grid Access to Electricity** – to develop systems that enable off-grid households and communities to access affordable and reliable renewable electricity;
 3. **Carbon Capture** – to enable near-zero carbon dioxide (CO₂) emissions from power plants and carbon intensive industries;
 4. **Sustainable Biofuels** – to develop ways to produce, at scale, widely affordable, advanced biofuels for transportation and industrial applications;
 5. **Converting Sunlight** – to discover affordable ways to convert sunlight into storable solar fuels;
 6. **Clean Energy Materials** – to accelerate the exploration, discovery, and use of new high-performance, low-cost clean energy materials; and
 7. **Affordable Heating and Cooling of Buildings** – to make low-carbon heating and cooling affordable for everyone (*the UK is co-leading this challenge with the European Commission and the United Arab Emirates*)

Objectives for the Innovation Challenges

1. To build an improved and **shared understanding** of what is **needed** to address the Challenge and **what success looks like** (define specific, measurable targets and track progress towards them)
2. To **identify key gaps and opportunities** not sufficiently addressed by current activities.
3. To **promote opportunities to researchers, innovators and investors** in-order to build support and excitement around them and boost engagement;
4. To **strengthen and expand collaboration** between key partners (government-government, researcher-researcher, public-private etc).

2nd Mission Innovation Ministerial, China, June 2017



➤ Progress Among MI Members Has Been Robust:

- Five Countries Released Major New National Energy Strategies that Incorporate Mission Innovation Goal
- Many Countries on Track to Achieve Doubling and At Least 2 Countries Now Expect to Exceed Original Doubling Targets
- More than a Dozen New R&D Programs and Initiatives Launched
- Five Members Released Statements Regarding Formation of Closer Bi-lateral or Multi-lateral Cooperation with other Member Countries



➤ Multilateral Work Stream Products Include:

- Significant Progress on Seven Innovation Challenges
- Sharing Information via Seven Webinars on Clean Energy Innovation Priorities and Programs
- Launch of New Collaboration between Mission Innovation and World Economic Forum
- Development of “Investor Scan” of Key Players in Field of Clean Energy Finance
- Development of Guide for MI R&D Opportunities Workshops



Next Steps

- Key milestones – 2nd Mission Innovation Ministerial, May 2018, Malmo & Copenhagen; 2nd Mission Innovation Ministerial, May/June 2019, Canada.
- Continue national efforts to increase public-sector investment
- Continue progress on Innovation Challenges and move from analysis to action:
 - Completing first round of analysis – technical workshops, surveys of national activities
 - Focus on stimulating new national activities and expanding international collaboration.
 - Particularly keen to continue and expand working with TCPs
- Deepen partnerships with key international initiatives – IEA, IRENA, WEF, BEC and others
- Deepen engagement with Business and Investors
 - Partnership working with World Economic Forum, Breakthrough Energy Coalition and others
- Kicking of increased efforts on: Communication, Tracking Progress-Measuring Impact, Information & Insights Sharing.

- MI a government partnership but reaching out to ‘researchers & innovators’ community and the ‘business and investor’ community.
- Want to strengthen the innovation eco-system – not duplicate or re-invent
- MI IC–TCPs good engagement to date – discussion, info sharing TCPs participation in MI workshops. MI IC lead’s feedback very positive.
- Routes for engaging with MI beyond ICs needed.
- Open questions – how to deepen that? – some possibilities...[as a starting point for discussions]
 - MI focus on strategy and building support – TCPs focus on the ‘doing’
 - MI ICs – identifying priorities – would like TCP expertise in that
 - MI identifying global gaps – might inform TCP work
 - MI gathering best practice examples and sharing them – tap into TCP experience
 - MI maybe help with communicating TCPs’ work to senior stakeholders
 - ...[others?]