Energy Matters

How COP21 can drive energy sector transformation and climate technology development and transfer

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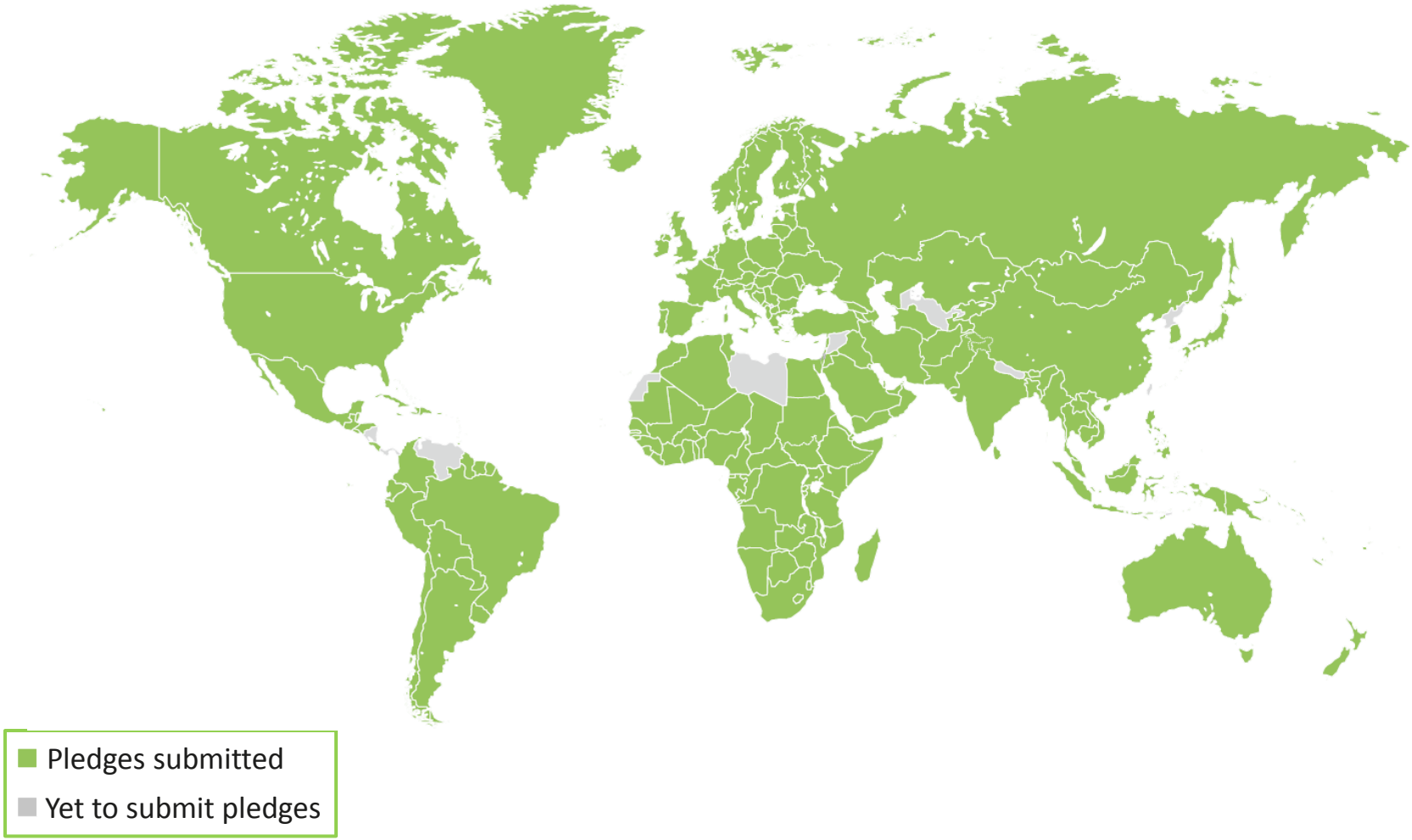
Energy is at the heart of the climate challenge

- **The energy sector accounts for at least two-thirds of global greenhouse gas emissions**
- **Signals turn green in time for Paris COP21**
  - *Pledges of 180+ countries account for nearly 98% of energy-related emissions*
  - *Renewables capacity additions at a record-high of 130 GW in 2014*
  - *Fossil-fuel subsidy reform, led by India & Indonesia, reduces the global subsidy bill below $500 billion in 2014*
- **IEA Energy & Climate Statement, endorsed by all IEA member countries on eve of COP21**
- **Low energy prices bring gains to consumers, but must not be allowed to undermine the transition to a cleaner energy future**

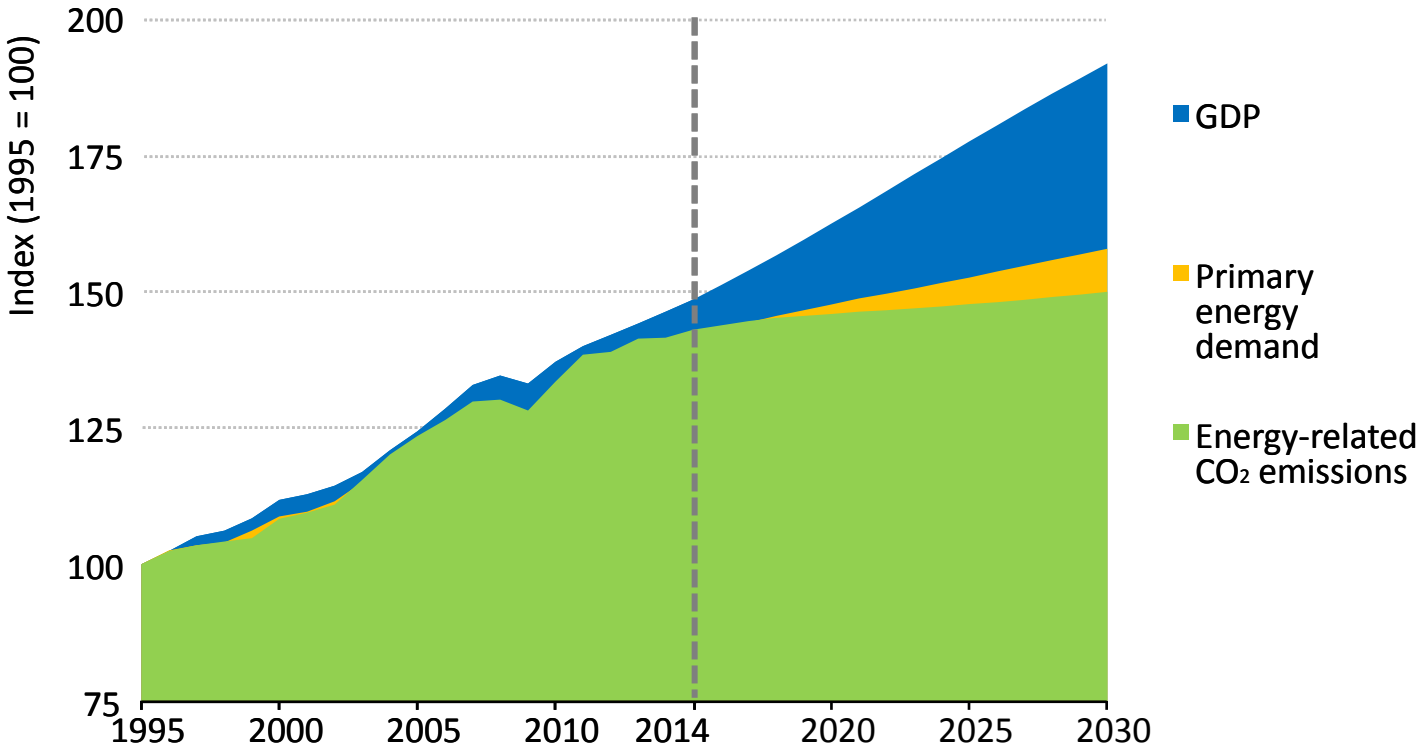
The coverage of climate pledges is impressive

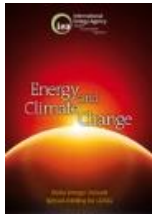


Climate pledges for COP21 are consistent with a temperature rise of 2.7 °C, with investment needs of $13.5 trillion in low-carbon technologies & efficiency to 2030

Energy sector starts to go its own way

Growth in the global economy, primary energy demand and related CO_2 emissions

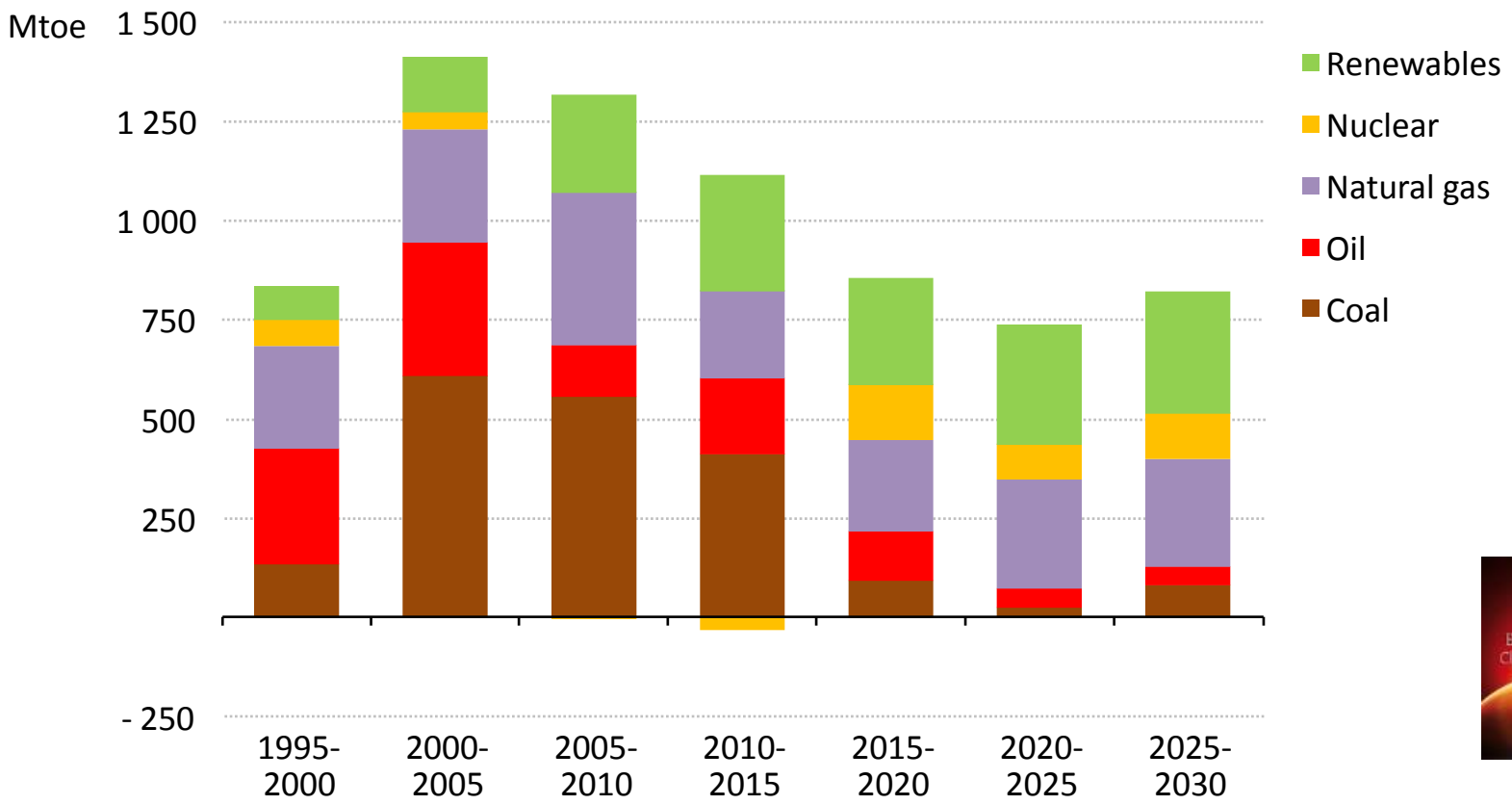


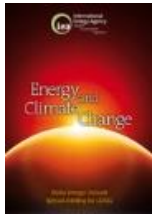


Growth in energy demand and emissions has tracked economic growth closely but decouples over time, with emissions growth slowing to a crawl by 2030

The shift to lower carbon energy is clear

Growth in primary energy demand by fuel

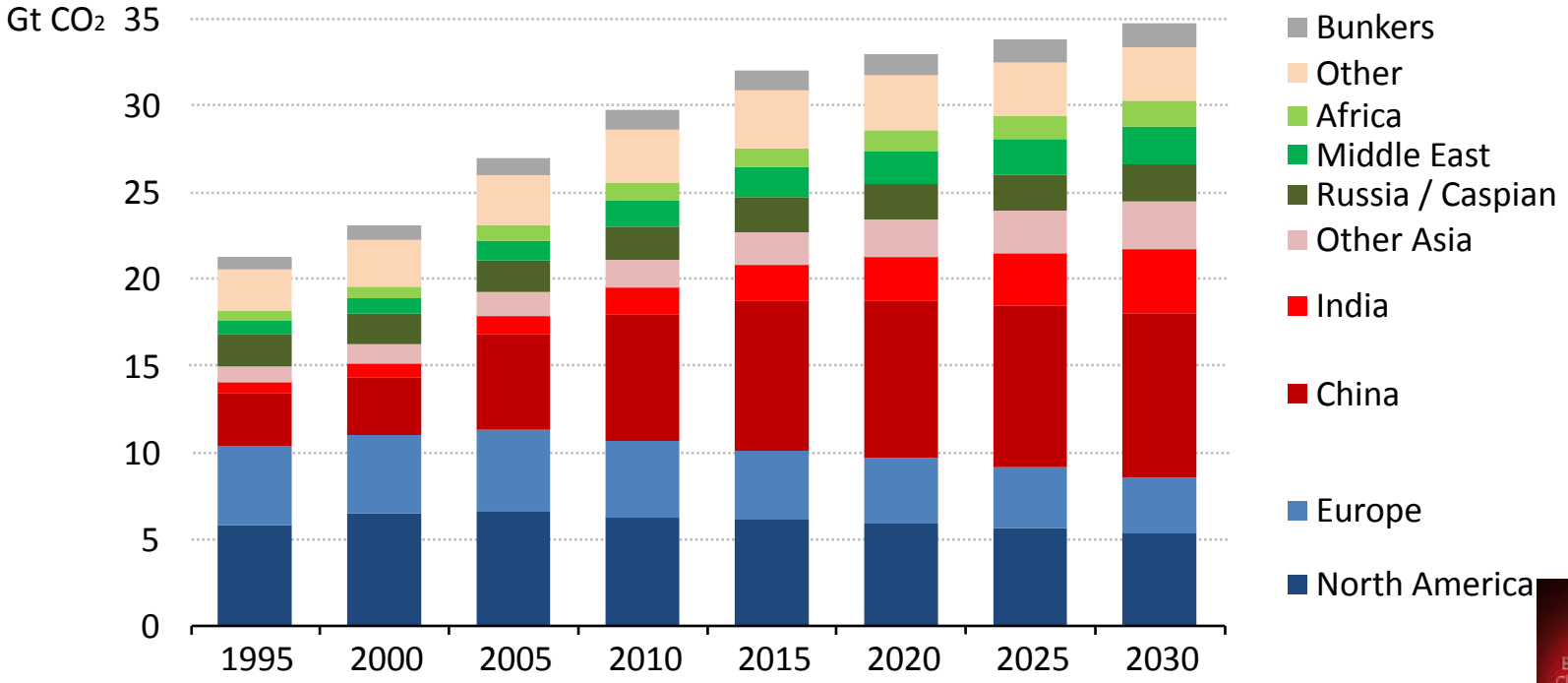




One quarter of the world's total energy supply is low-carbon in 2030; natural gas is the only fossil-fuel that increases its share of the global energy mix

Emissions burden continues to move over time

Energy-related CO_2 emissions by region



Countries accounting for more than half of global economic activity see their energy-related GHG emissions plateau or be in decline by 2030

More can be done at no additional cost: IEA strategy to raise climate ambition

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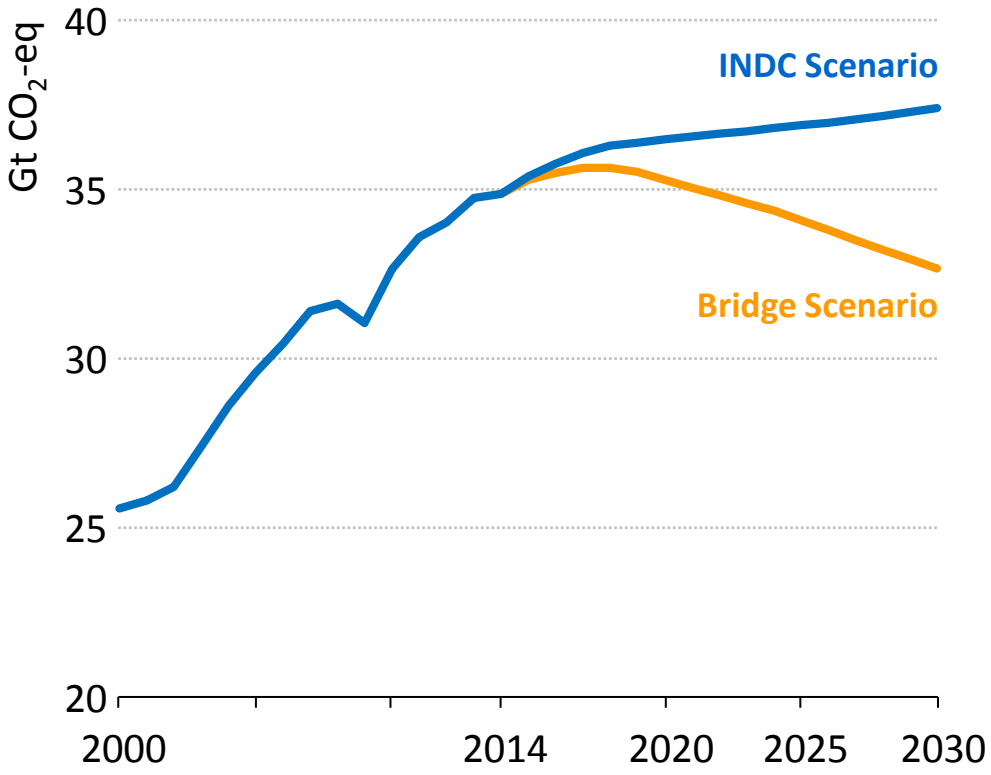
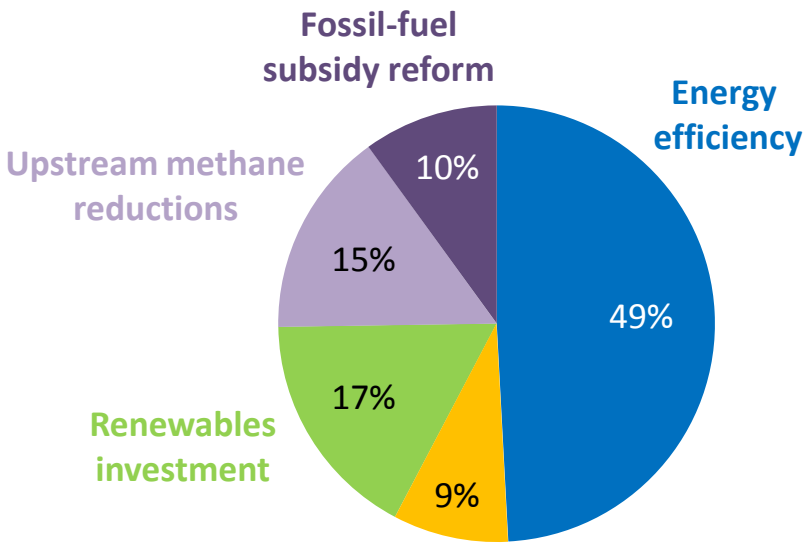
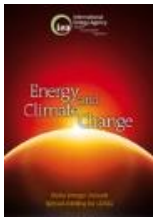
Global energy-related GHG emissions



Savings by measure, 2030

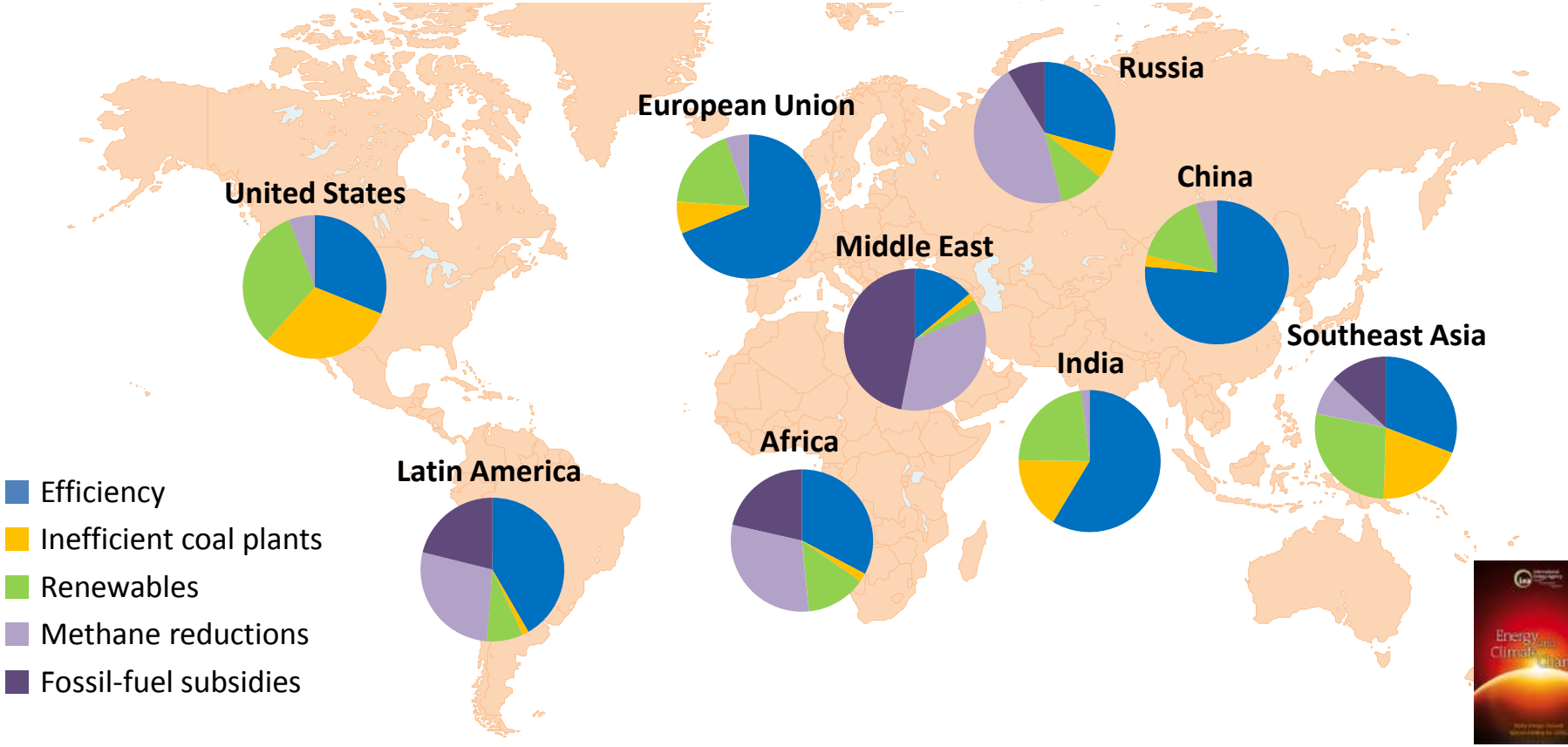


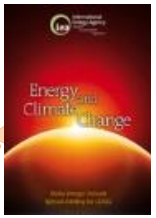


Five measures – shown in a "Bridge Scenario" – achieve a peak in emissions around 2020, using only proven technologies & without harming economic growth

Bridging strategy is flexible across regions

GHG emissions reduction by measure in the Bridge Scenario, relative to the INDC Scenario, 2030





The measures in the Bridge Scenario apply flexibly across regions, with energy efficiency and renewables as key measures worldwide

IEA messages to COP21

To shift the energy sector onto a low-carbon path that supports economic growth & energy access:

1. Take 5 key actions, led by energy efficiency & renewables, to peak then reduce global energy emissions

2. Use the Paris Agreement to drive short-term actions consistent with long-term emission goals

3. Accelerate energy technology innovation to make decarbonisation easier and even more affordable

4. Enhance energy security by making the energy sector more resilient to climate change impacts

2015 IEA Ministerial endorsed modernisation of the IEA

1. **"*Opening the doors of the IEA*" to the emerging economies**
   - *29 members at present plus Chile & Mexico in accession*
   - *China, Indonesia & Thailand have become IEA Association countries, the 1st step in an ongoing process of strengthening engagement*
   - *Many other countries are pursuing Association status*

2. **IEA to put more focus on clean energy technology collaborations & become a hub for clean energy technologies**

Working together through **IEA Technology Collaboration Programmes**

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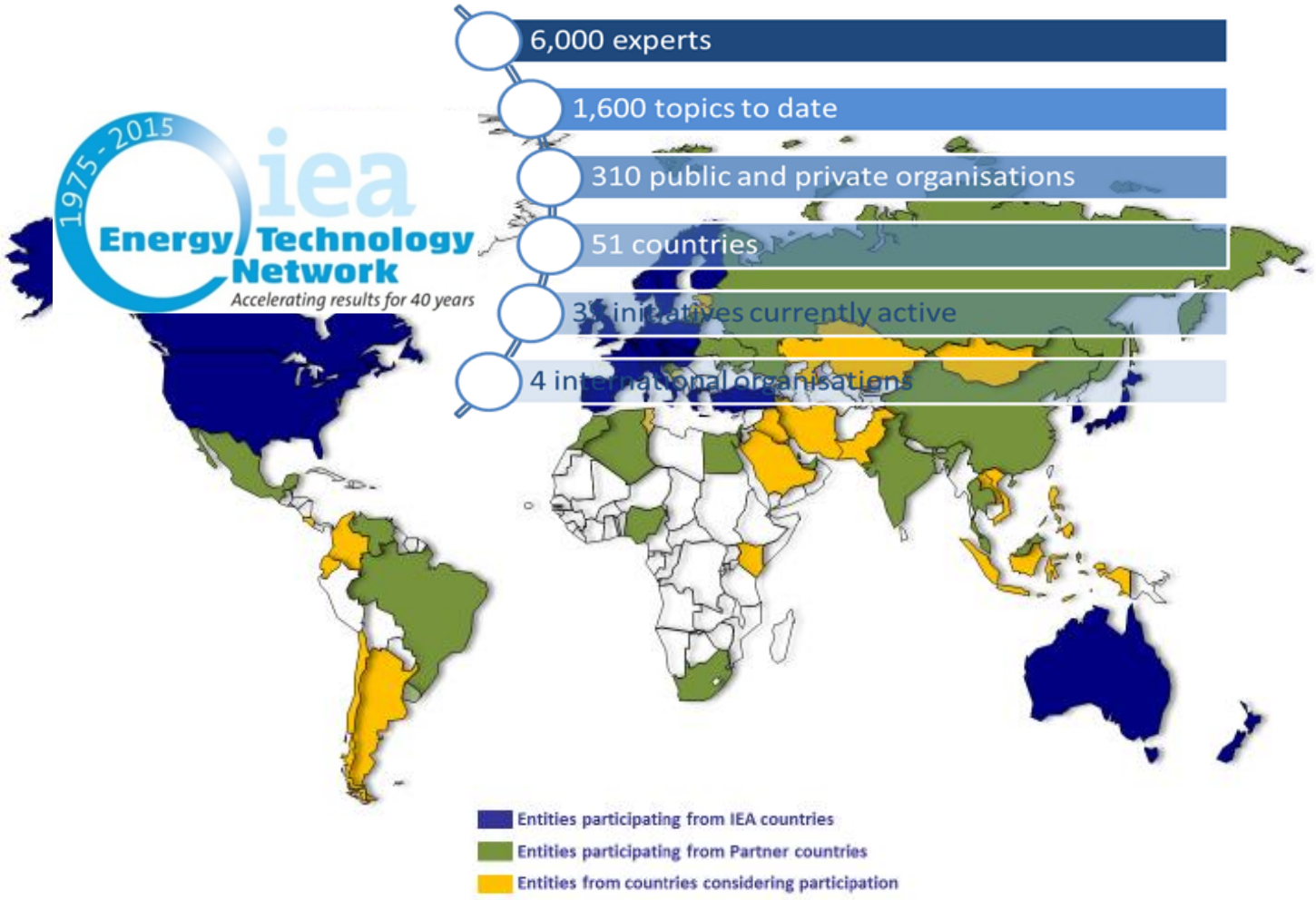

Conclusions

- **Cost-effective action is possible in the energy sector that could lead global emissions to peak around 2020**
- **COP21 must send a strong signal to the energy sector**
  - *Long-term goal; 5-year reviews; and a strong tracking framework*
- **More focus needed on energy technology innovation & building energy sector resilience to climate impacts**
- **The IEA stands ready to support implementation, bringing together data, modelling, policy and technology**

IEA engagement worldwide

as of 25 November 2015

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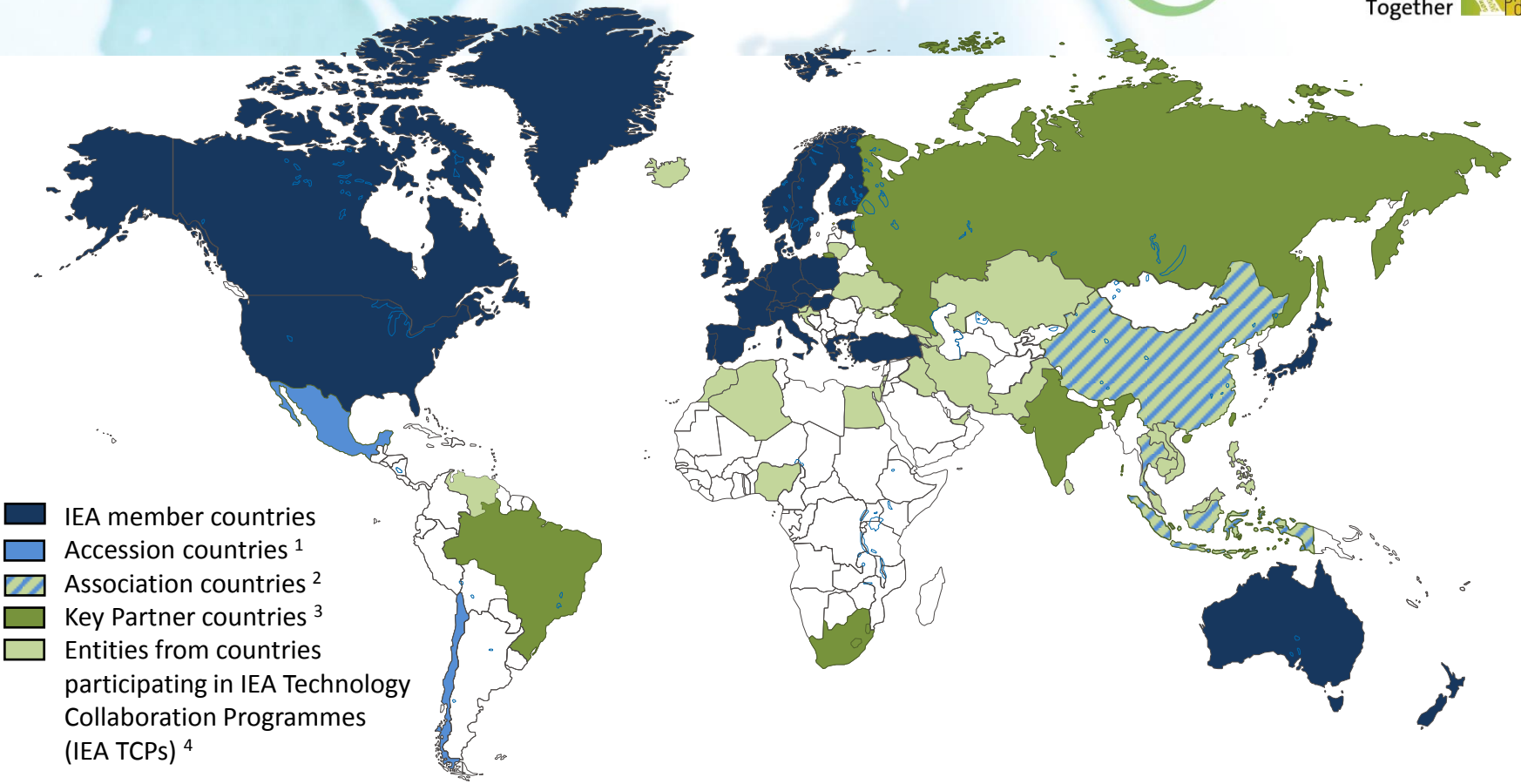

1. *Accession countries: OECD member countries that have begun the formal process to become a full member of the IEA.*
2. *Association countries: Partner countries which have activated Association with the IEA.*
3. *Key Partner countries: Countries with which the IEA is seeking enhanced engagement.*
4. *IEA member countries (except Estonia, Luxembourg and the Slovak Republic), Accession countries, Association countries (except Indonesia) and key Partner countries also participate in IEA TCPs. Entities participating in (signatories to) IEA TCPs may represent governmental or non-governmental organisations. The Economic Community of West African States (ECOWAS), the European Commission (EC), ITER, the Organisation for Petroleum Exporting Countries (OPEC), the Regional Centre for Renewable Energy and Energy Efficiency (RCREEE, located in Egypt), and the United Nations Industrial Development Organisation (UNIDO) are also participants in IEA TCPs.*

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