
INTERNATIONAL CLIMATE CHANGE POLICY: *CAUSE FOR OPTIMISM OR BATTLE LOST?*


Dr. Alina Averchenkova, Co-Head Policy, Grantham Research Institute for Climate Change and the Environment, London School of Economics
a.averchenkova@lse.ac.uk

About the Institute

- q Founded at the LSE in 2008
- q Chaired by Lord Stern of Brentford
- q CCCEP collaboration with the University of Leeds
- q Sister Institute at Imperial College London
- q Main funders: ESRC and Grantham Foundation for the Environment



What we do



To increase knowledge and understanding by performing world-class research on climate change and the environment...

Research



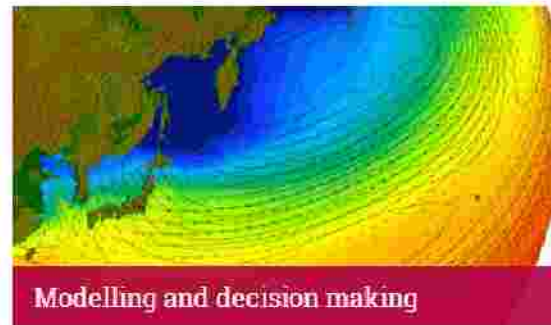
To promote better informed decision-making about climate change and the environment by engaging with a wide range of key audiences around the world...

Policy



Grantham Research Institute on
Climate Change and
the Environment

Our research areas



Key issues

- q Context: The low carbon transition challenge
- q Key issues in the international climate action
- q Implications for China

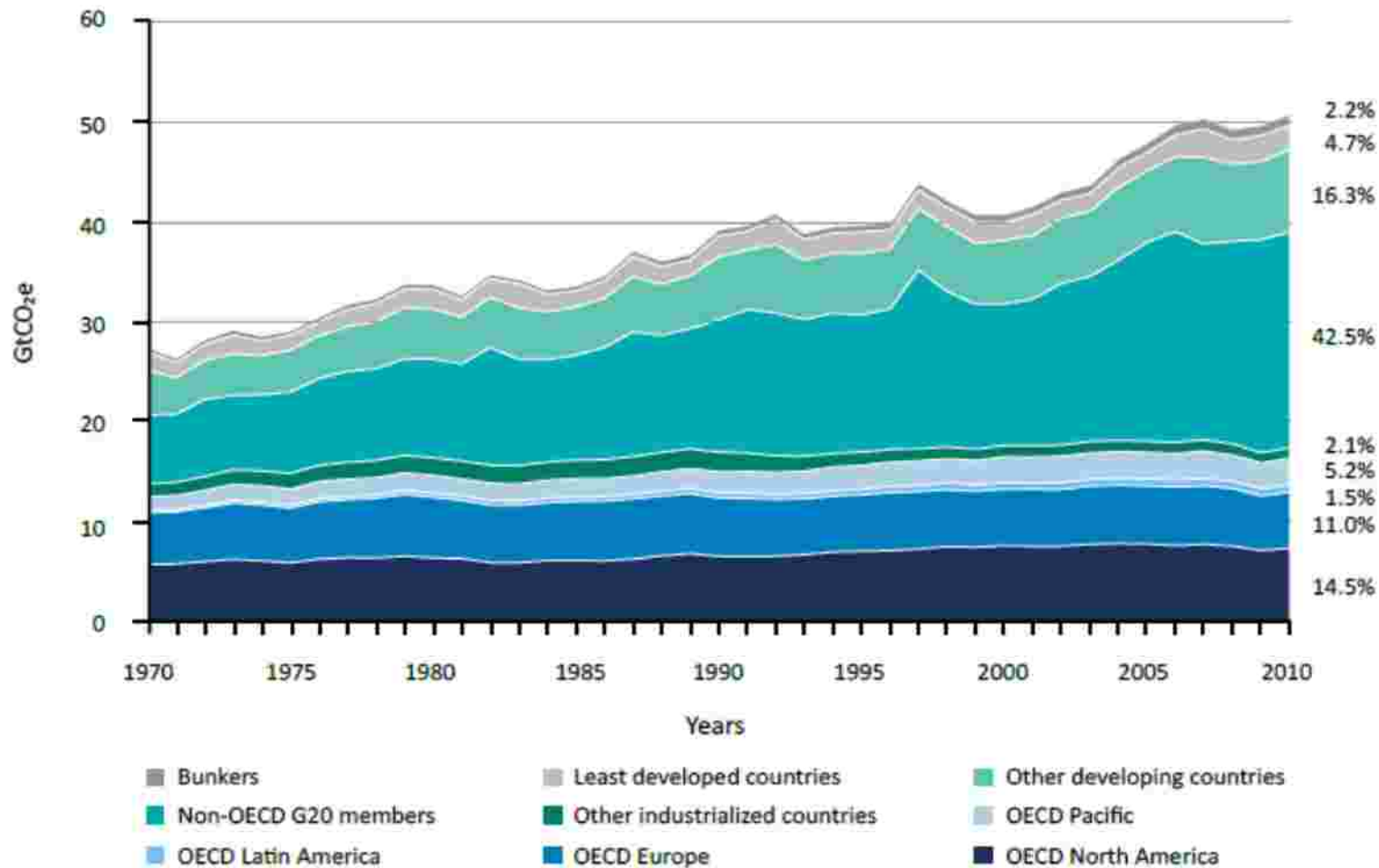


CONTEXT: THE LOW CARBON TRANSITION CHALLENGE



Grantham Research Institute on
Climate Change and
the Environment

Trends in global GHG emissions: 1970–2010 by economic grouping



- GHG emissions are 14% higher than the levels in 2020 that are in line with meeting 1.5 or 2 ° C targets
- The balance between developed and developing countries changed significantly between 2000 and 2010:
 - developed countries share declined from 51.8 to 40.9 %
 - today roughly equal shares of cumulative GHG emissions for the period 1850-2010.

Source: UNEP Emission Gap Report, 2013

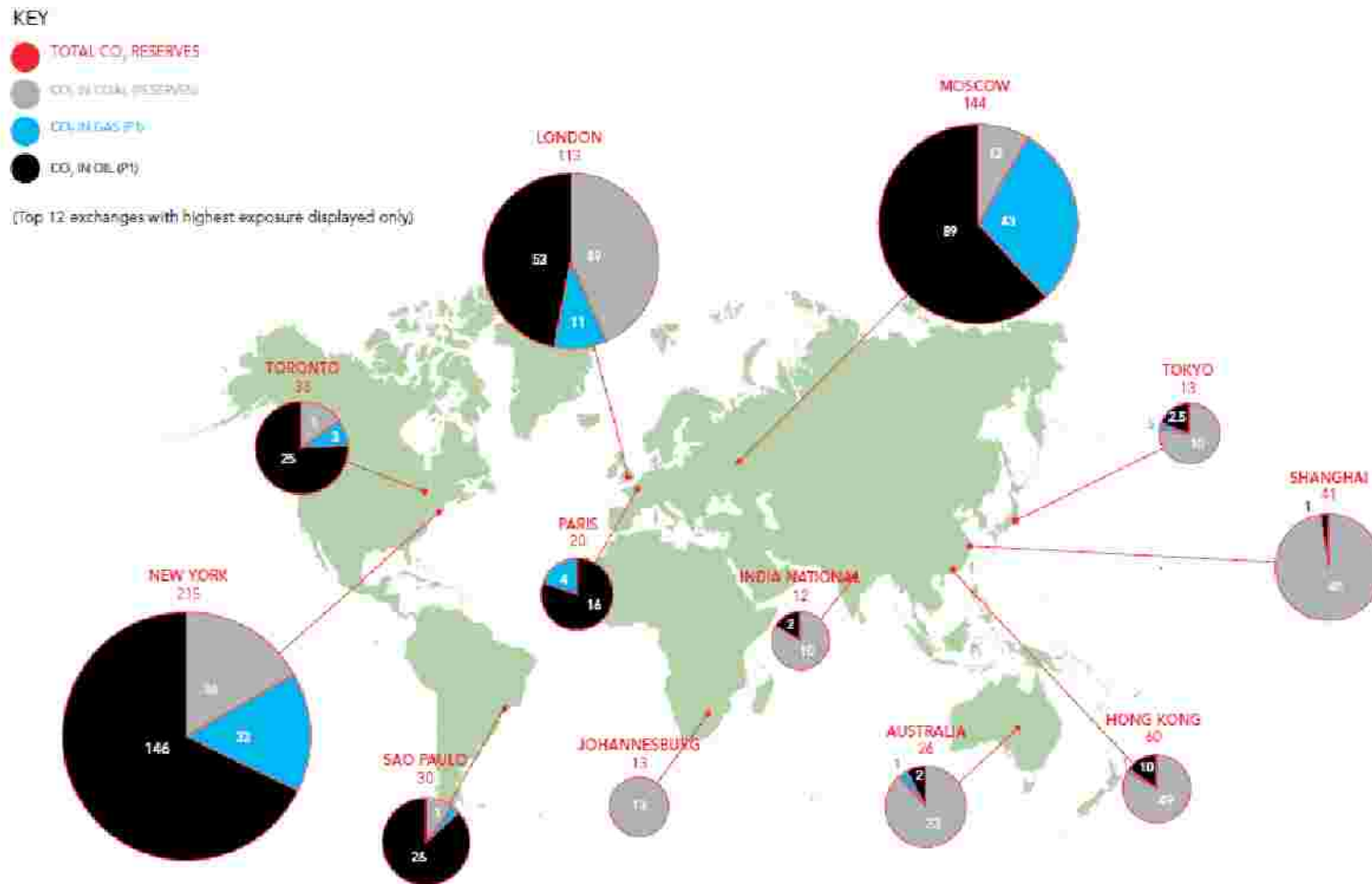
The emissions reduction challenge

- q Necessary emissions path for 50-50 chance of 2 ° C:
 - q under 35Gt in 2030; under 20Gt in 2050; zero by end century
- q Can do more earlier & less later or vice versa, but costly to catch up if postpone action
- q Necessary path likely to require:
 - q zero emissions from electricity around mid-century
 - q emissions/output to fall by factor of 7-8 by 2050 (if 3% economic growth to 2050)
 - q zero total emissions by the end of century
 - q negative in major sectors well before end of century.



Rapid decarbonisation may create stranded assets

CO₂ in current fossil fuel reserves is three times larger than permissible emissions

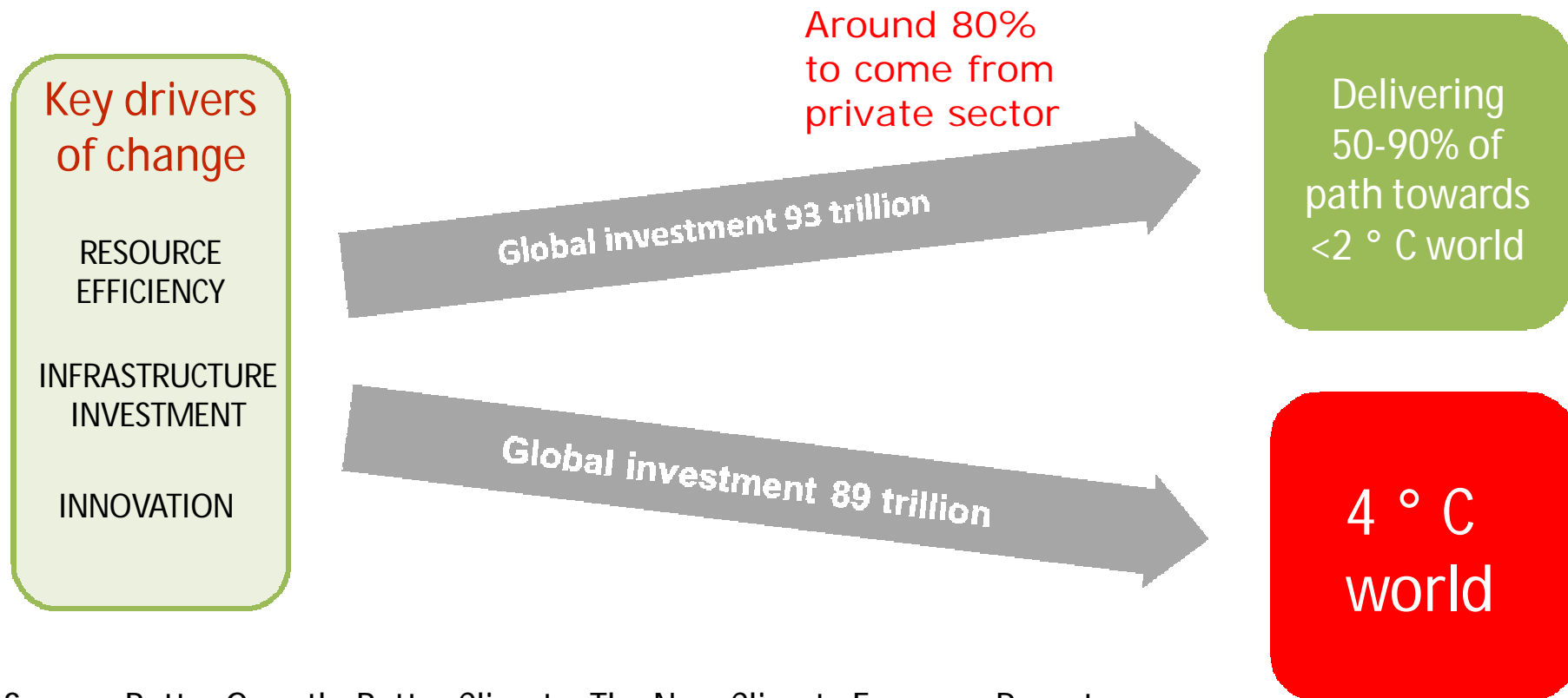


Source:
Carbon Tracker 2013



The dynamics of transition: opportunities

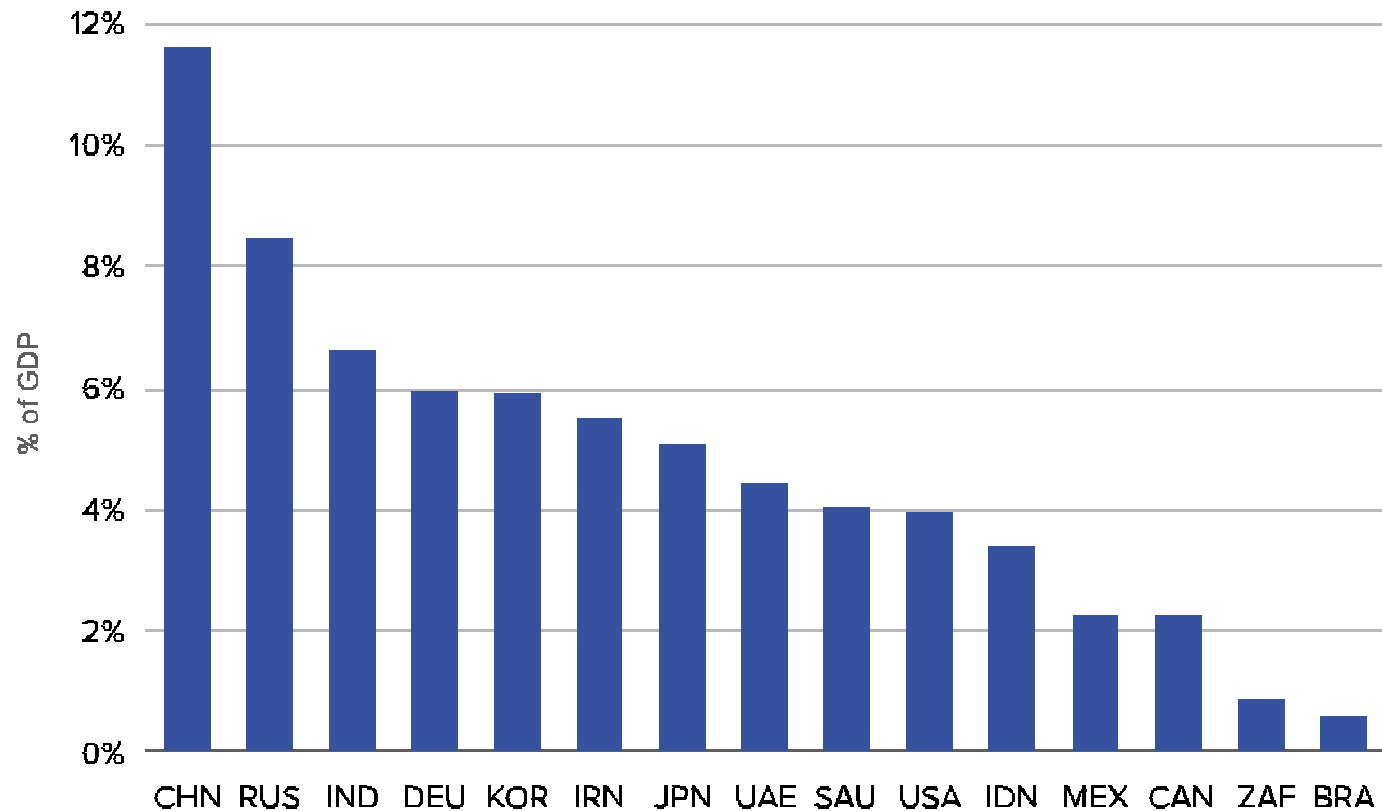
Most reductions needed for a 2 ° C path are locally net-beneficial in medium-term à invest wisely in local terms & much of what is needed to avoid climate change will be achieved



Source: Better Growth, Better Climate: The New Climate Economy Report, Global Commission on the Economy & Climate, September 2014.

Health co-benefits

Mortality costs from exposure to PM2.5 air pollution



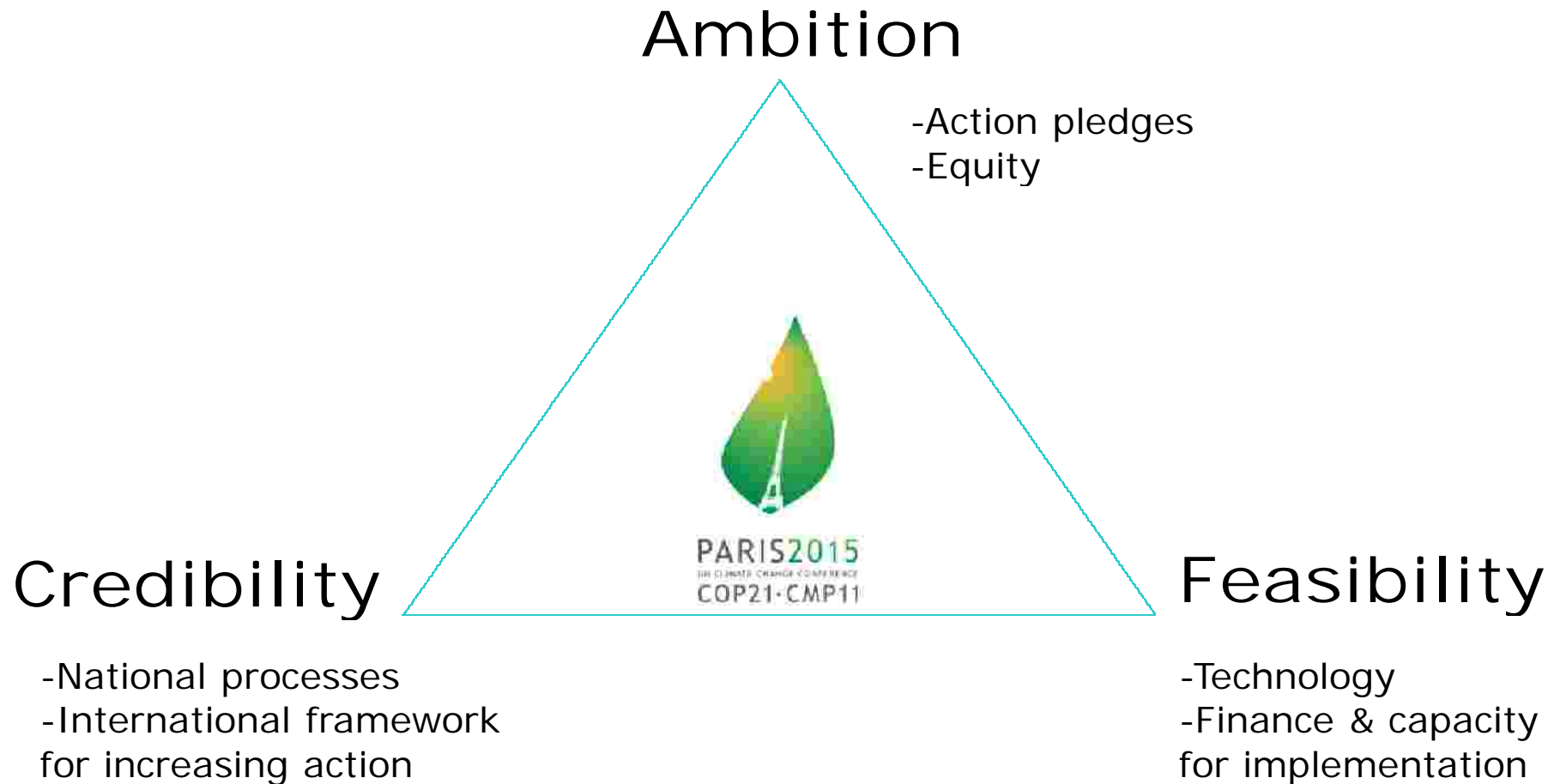
Source: GCEC (2014) and Hamilton (2014), based on WHO mortality data

KEY ISSUES FOR INTERNATIONAL CLIMATE ACTION

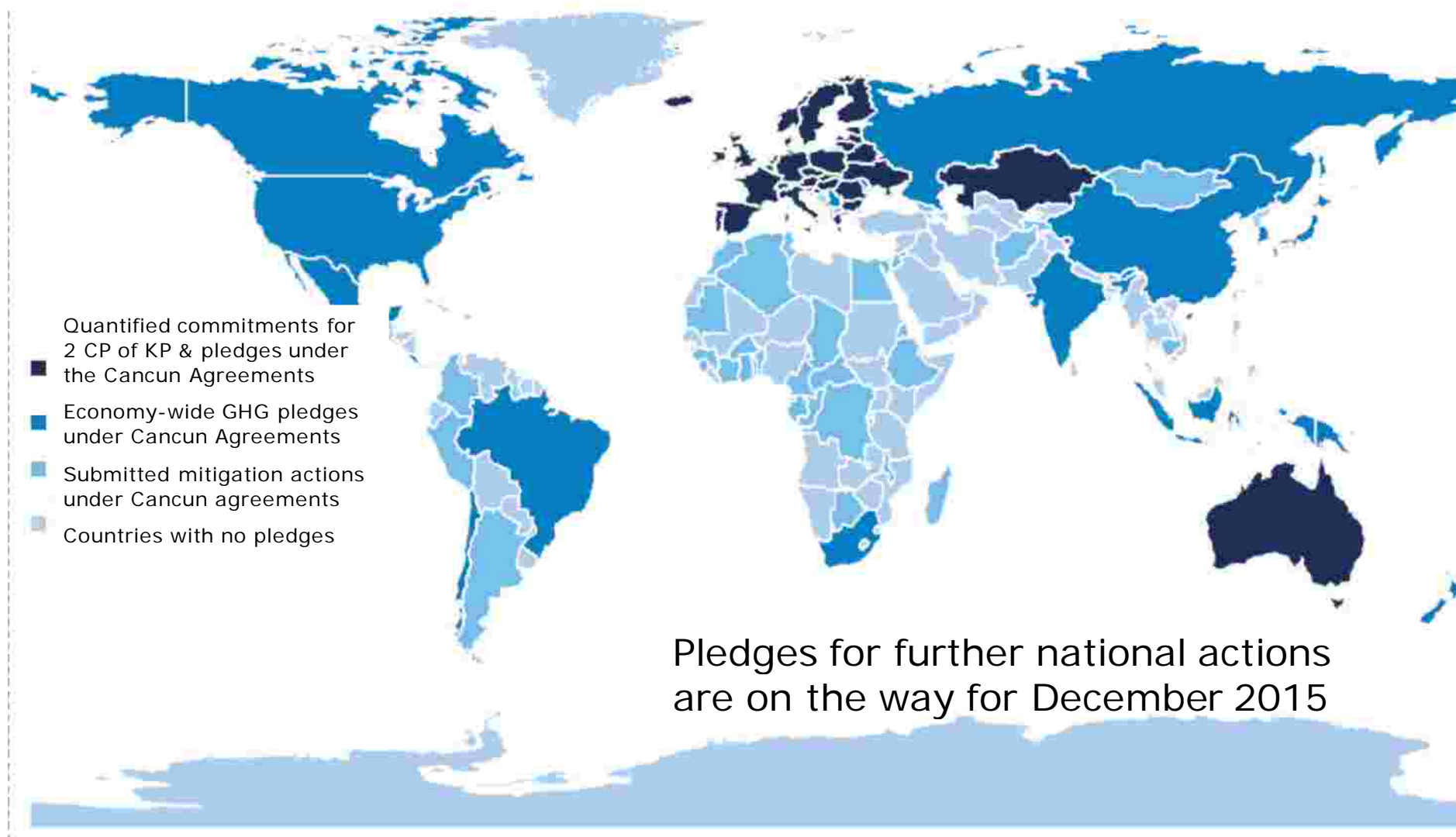


Grantham Research Institute on
Climate Change and
the Environment

Key issues for international action



1. Ambition: Mitigation landscape



Source: The Emissions Gap Report 2013 – Executive summary, UNDP, 2013.



Grantham Research Institute of
Climate Change and
the Environment

Pledges ahead of Paris



To reduce GHG emissions by 50% below 1990 by 2030. In addition, emissions reduction target of 35% for 2025.



A binding, economy-wide target to reduce GHG emissions by at least 40% domestic below 1990 by 2030.



A binding, economy-wide target to reduce GHG emissions by at least 40% below 1990 by 2030.



Mexico: 22% GHG emission reductions below baseline in 2030, starting to decrease emissions in 2026. Conditionally offers to reduce up to 36% below baseline.



USA: reduce economy wide emissions by 26% to 28% below 2005 domestically.



Russia: reduce net GHG emissions by 25% to 30% below the 1990 by 2030.



Canada: economy-wide target to reduce emissions by 30% below 2005 levels in 2030.

Additional preliminary announcements



China announced to aim at peaking CO2 emissions in 2030 at the latest, and increase the share of non-fossil fuels to 20% of primary energy demand.



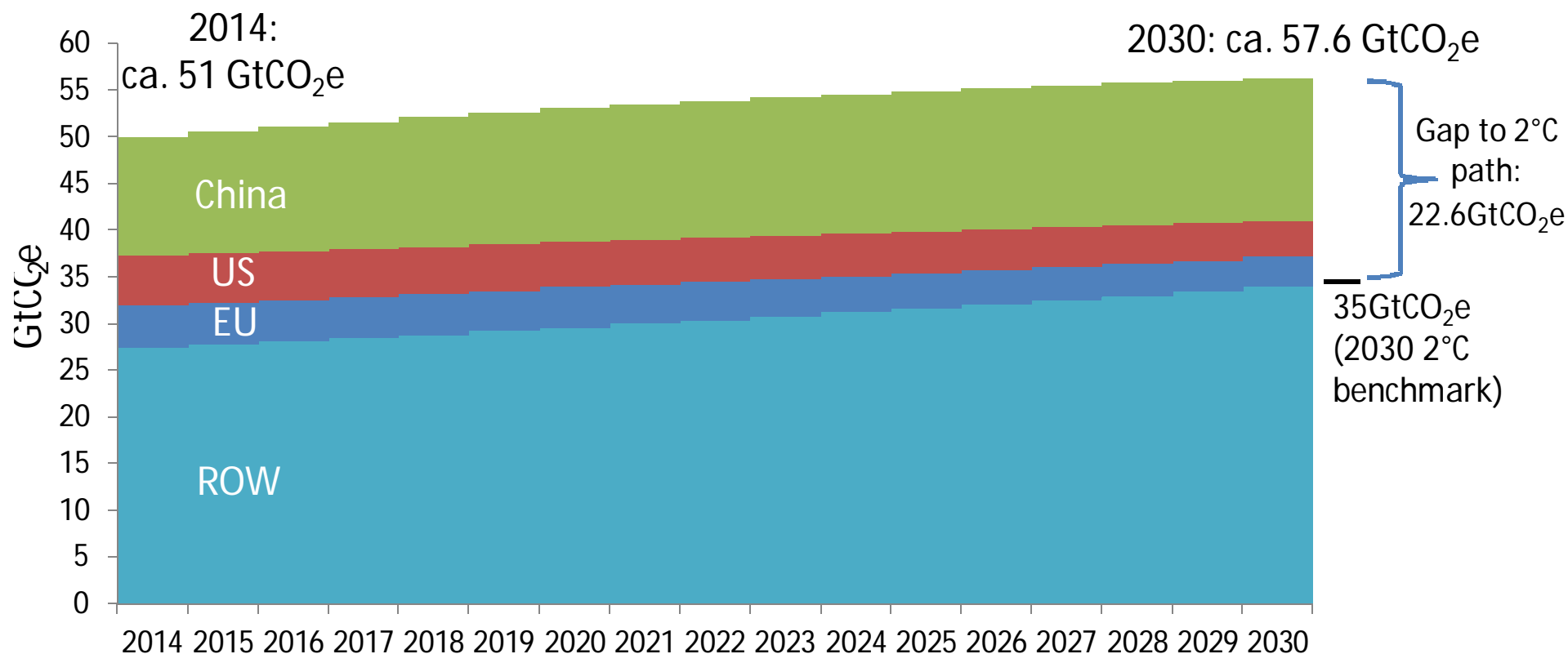
Centre for
Climate Change
Research and Policy



Grantham Research Institute on
Climate Change and
the Environment

The emissions gap

Global emissions to 2030: recent pledges (China, US and EU); and IEA New Policies Scenario (Rest of World (ROW))



Source: Boyd, based on Boyd et al. (2015) and IEA (WEO 2014)

Note 1: 2030 trajectories can be lower if countries take stronger action in next 15 years

Note 2: if very strong action is taken after 2030 then the 2 ° C benchmark for 2030 could be ~40GtCO₂e



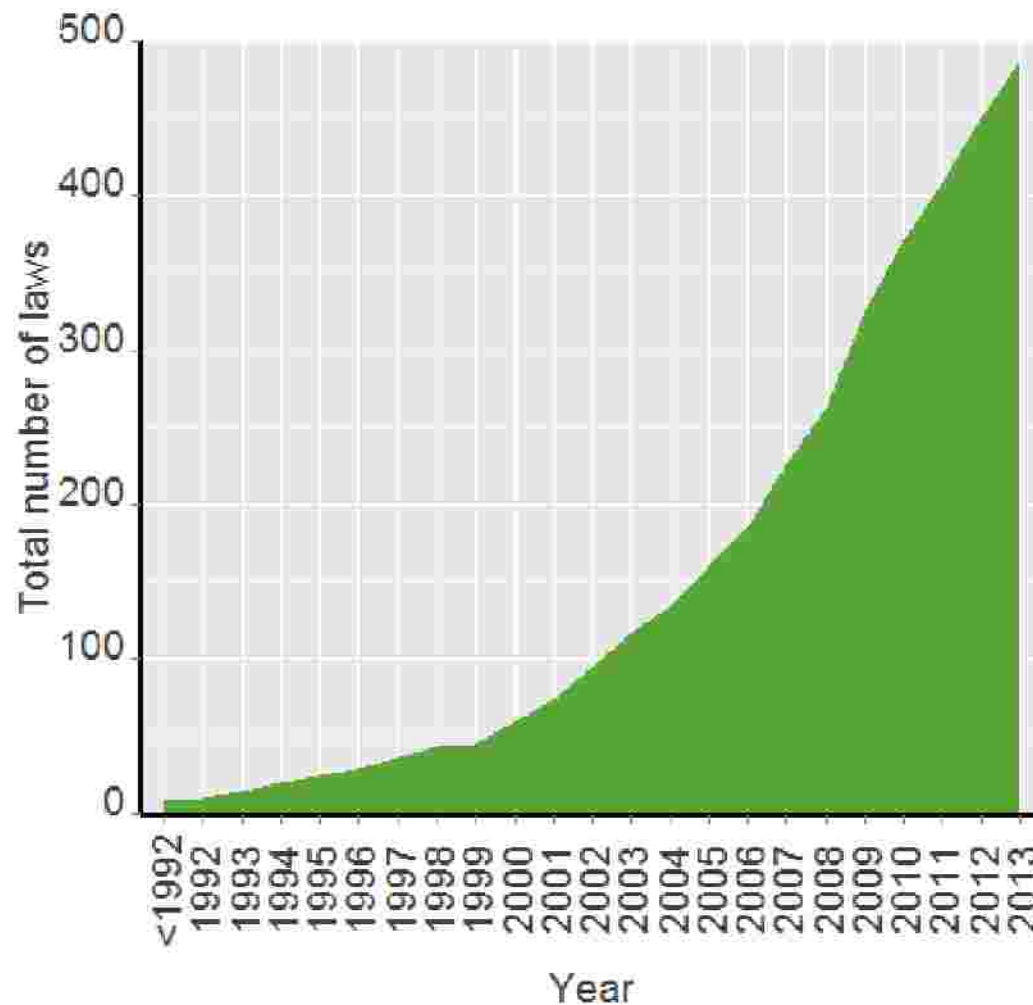
Grantham Research Institute of
Climate Change and
the Environment

2. Credibility

- q National: Institutional & legal processes; domestic buy-in and capacity
 - q Behind the action pledge
 - q For implementation
- q International mechanisms
 - q Ramping up ambition going forward
 - q Measurement, reporting and verification of efforts



Legislative activity is growing: Stock of climate-related laws

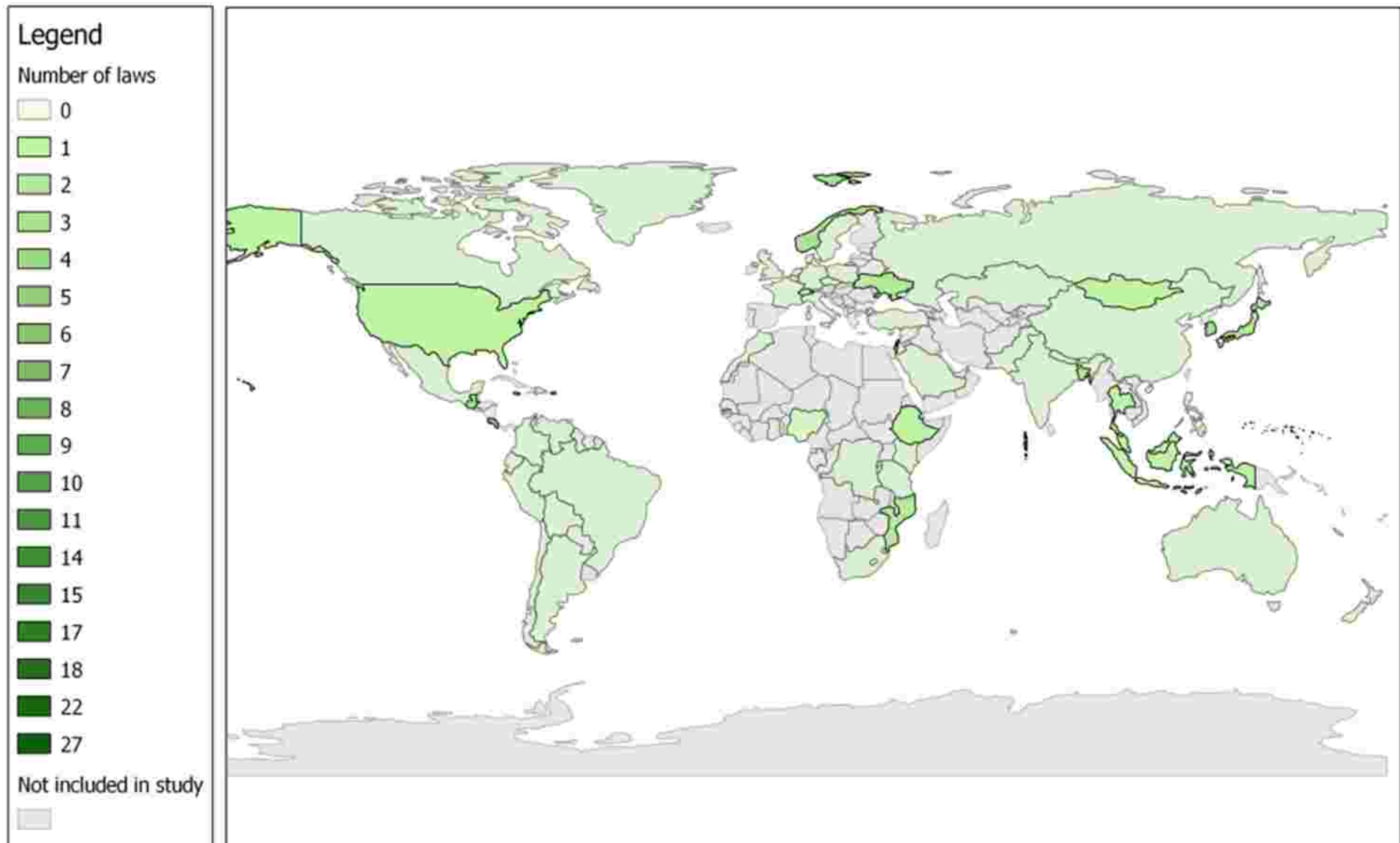


4th GLOBE Climate Legislation Study, 2014

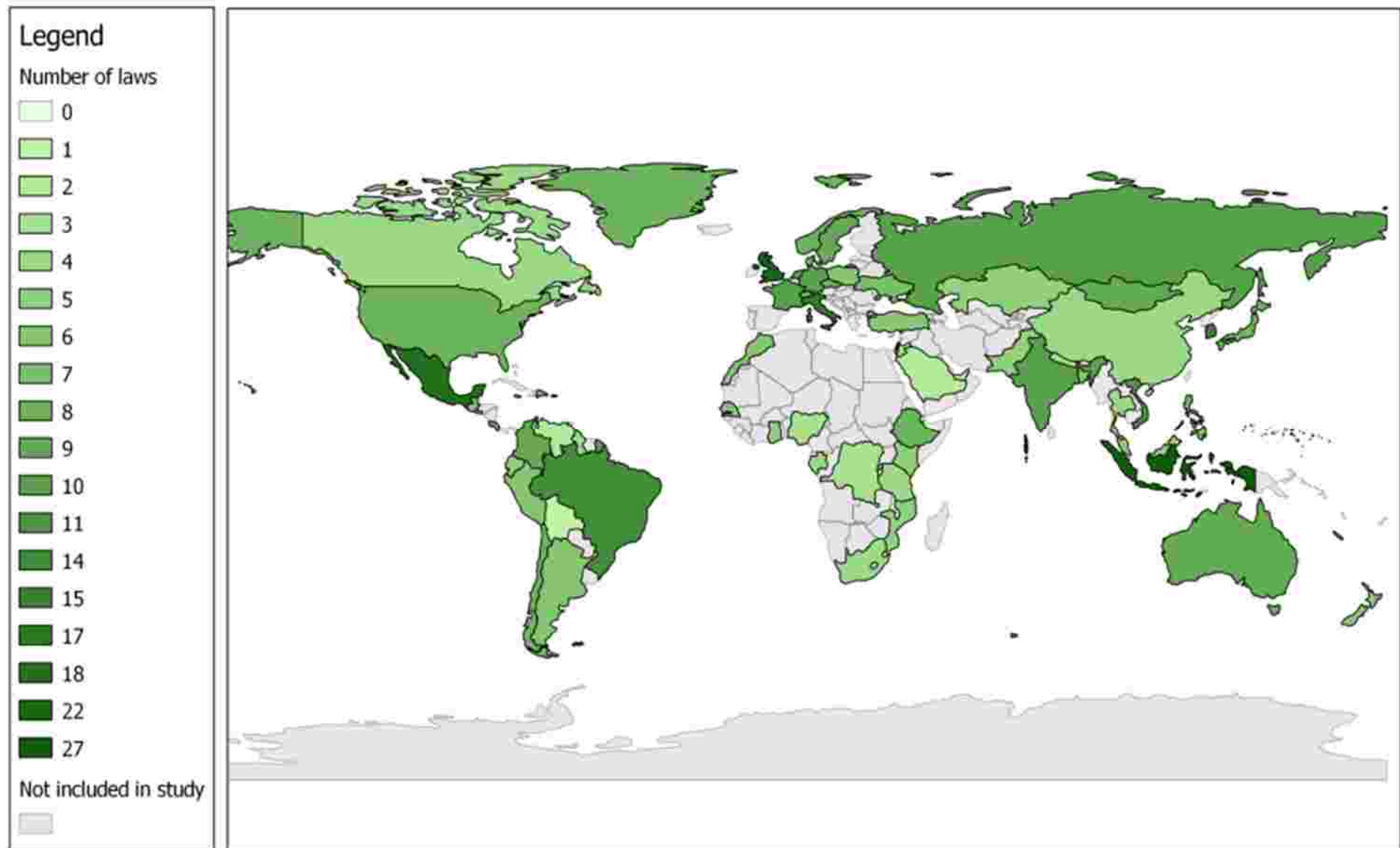
- 487 climate-related laws in 66 study countries
- Flagship legislation in 2013 in 8 countries



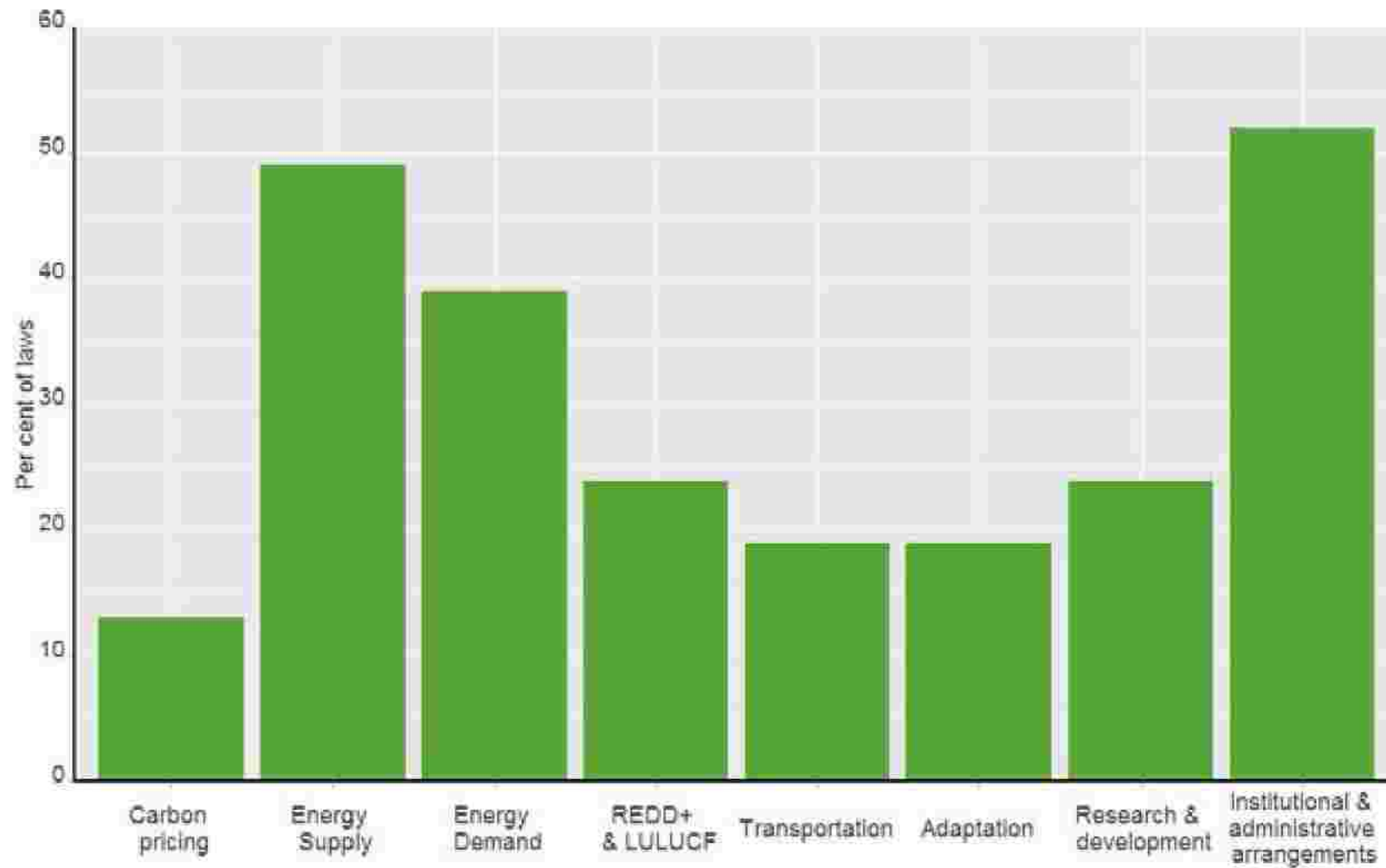
The Stock of Climate Change Laws (1997)



Stock of laws, 2013



Key focus areas for legislation

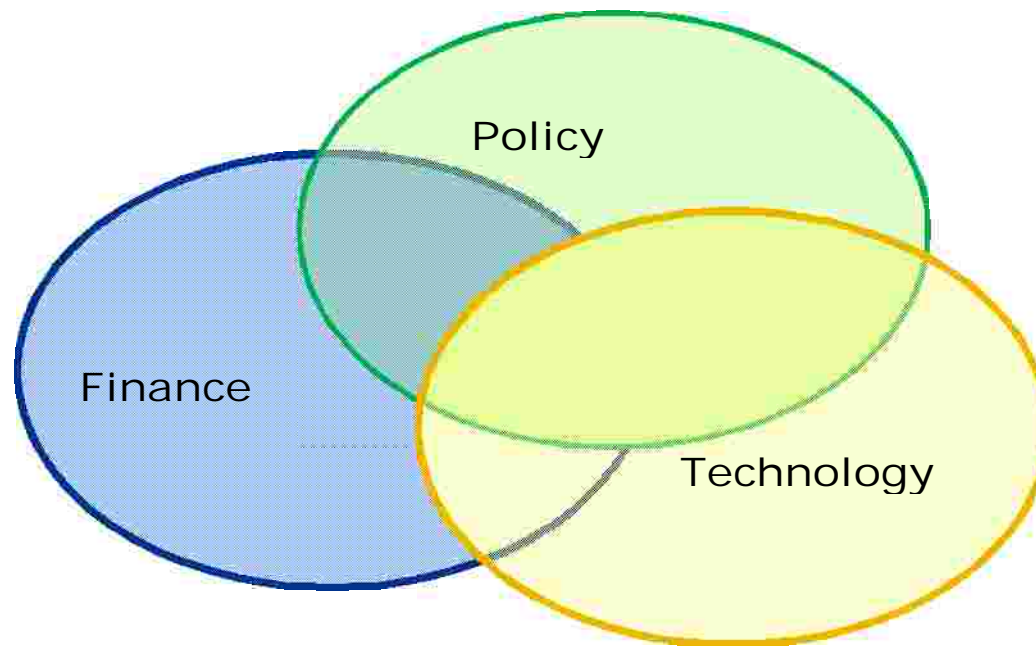


Dynamic aspects of Paris agreement

- q A regular (e.g. five-yearly) collective review and pledge revision process; expectation of raising commitment
- q Encourage domestic decarbonisation policies & plans
- q Encourage domestic institutions and policies to enable scaling up over time (e.g. finance; innovation)
- q Recognition of non-country action: cities, companies, partnerships



3. Feasibility: Key drivers for low carbon transition

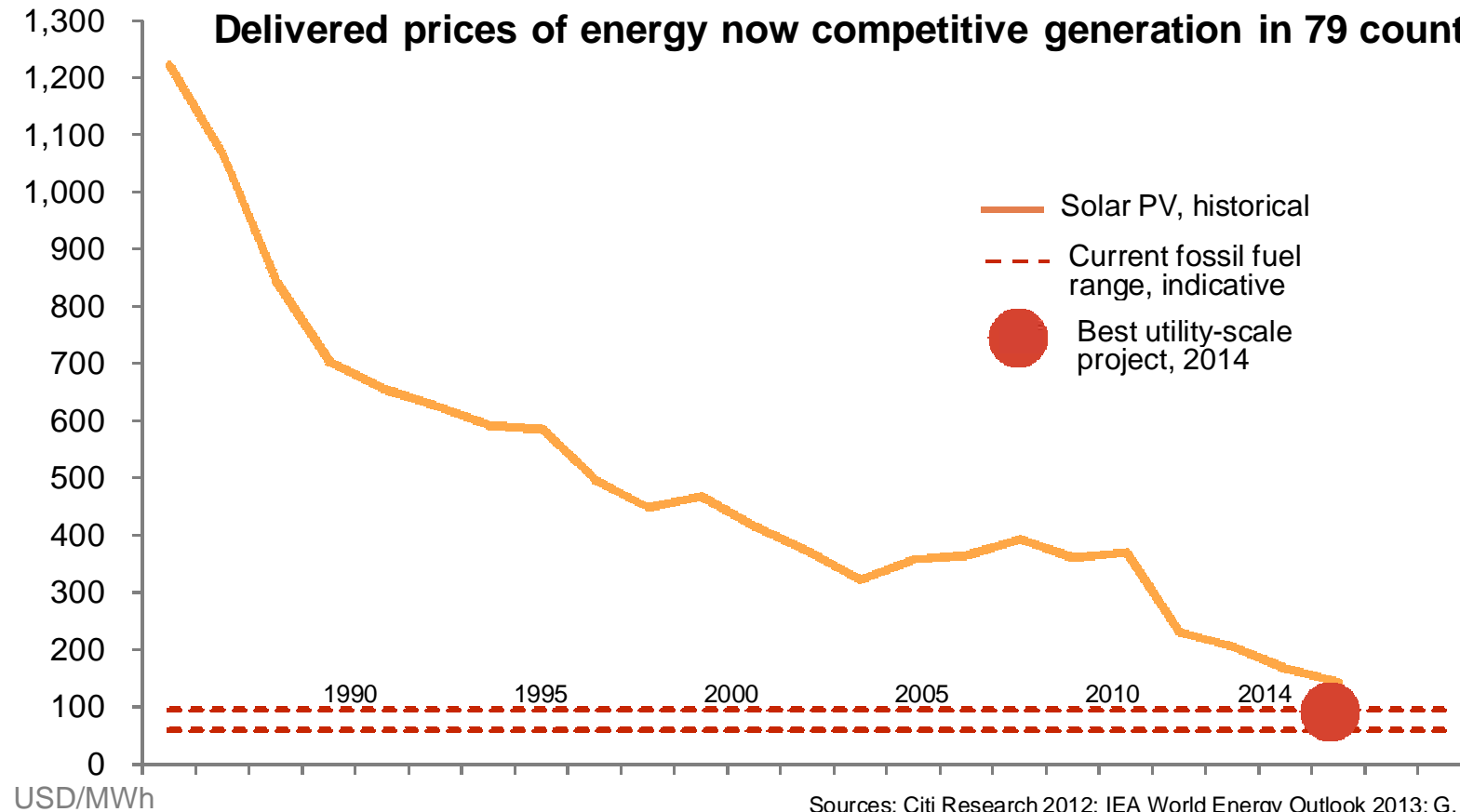


Technical progress – a focus on solar

Solar PV module installed costs have fallen around 50% since 2010: currently well below \$1/watt.

System prices have come down by a factor of 4 over the last 7-8 years.

Delivered prices of energy now competitive generation in 79 countries.



Sources: Citi Research 2012; IEA World Energy Outlook 2013; G. F Nemet, "Beyond the learning curve", Energy Policy 34, 3218-3232 (2006)



Grantham Research Institute of
Climate Change and
the Environment

Typical barriers to low-carbon investments

Financial	<ul style="list-style-type: none">• High upfront costs; Small project sizes• Split incentives (e.g. of owners and users)• Misallocation of resources (fossil fuel subsidies)
Institutional	<ul style="list-style-type: none">• High administration & set-up costs/ Limited access to capital• Monopolies/ limited access to market
Economic	<ul style="list-style-type: none">• Externalities: costs that are not included in market prices, such as negative environmental impacts
Technical	<ul style="list-style-type: none">• High transaction costs
Information	<ul style="list-style-type: none">• Limited awareness of options• Lack of knowledge/access to knowledge
Capacity	<ul style="list-style-type: none">• Lack of skilled labour• Cost of training and education

Source: Adapted from GIZ, 2013



Grantham Research Institute of
Climate Change and
the Environment

Finance

- q US\$6 trillion per year needed for infrastructure globally over next 15 years
- q Stable long-term policy frameworks and trustworthy institutions needed to lower cost of capital and ensure sound investments
- q Development banks are key institutions
 - q Reduce perceived policy risk
 - q Facilitate risk-sharing via leverage, partnerships
 - q Provide specialist products
 - q Specialist knowledge and capabilities
- q Important role for international cooperation regarding such institutions
- q Three key multilateral processes this year
 - q Paris – climate change (\$100 billion per year by 2020)
 - q New York – Sustainable Development Goals (September)
 - q Addis Ababa – financing for (sustainable) development (July)

What does this mean for business?

- Some uncertainty for post-2015 international agreement remains, but the fundamental features of the framework have been determined
- The world is moving towards low-carbon development path leading to fundamental transformation of the energy systems
- Private capital is estimated to supply more than 80 % of investment required for the transition to a low carbon economy
- New opportunities emerge for low-carbon technology providers in particularly in developing countries, i.e.:
 - Growing demand for low carbon products
 - Incentives for energy efficiency, RE, and other low carbon investment
 - New financing products emerging
- Business will have to comply with emerging national low carbon policies and regulations



China's global role

- q China is already a leader in this area:
 - q Its **size** (geography; economy; emissions)
 - q **Model for developing countries**: growth; world economic affairs
 - q Influences **politics in rich countries**
 - q Example to all countries through its **innovations**
- q China's new development model → in China's interests to lead on global climate change & sustainable development
 - q UN Paris conference (ambition, credibility, support for long-term dynamic process and “hybrid” agreement)
 - q Outbound foreign investment for “sound” development paths (bilateral; AIIB; BRICS Bank; Silk Road Fund)
 - q Innovation: global coordination; collaboration; supply chains
 - q G20 Chair: transforming energy and cities – finance and delivery
- q Mutually reinforcing benefits: high ambition; new markets for clean industries; technical progress; lower climate risks

