GLOBAL CCS INSTITUTE

GLOBAL STATUS OF CCS

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UNECE, Cleaner Electricity Production Workshop - Geneva

20 October 2014

OVERVIEW OF PRESENTATION

The Case for CCS

Projects

Policy Developments

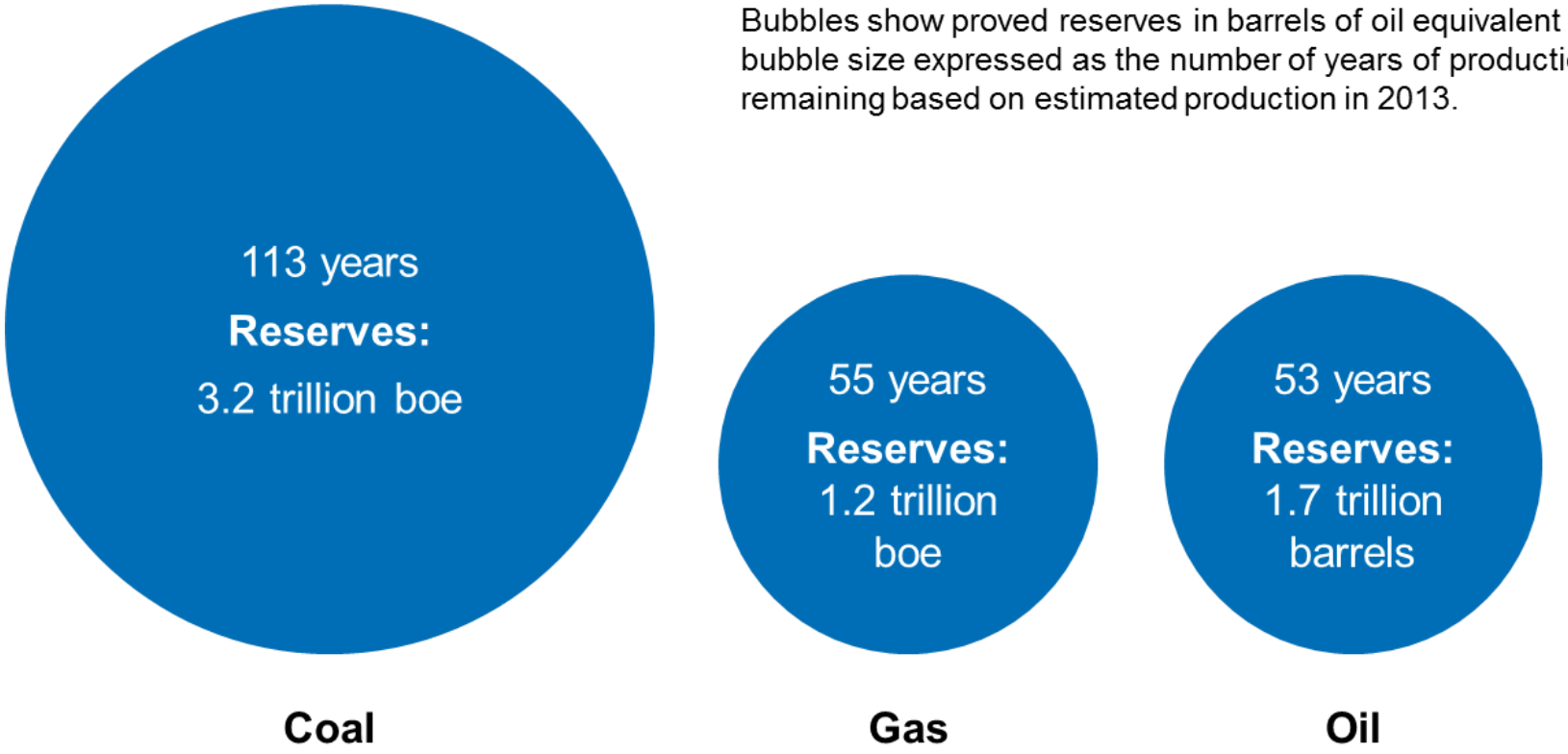
Key Messages

THE CASE FOR CCS

THE CASE FOR CCS

Proved reserves of fossil fuels for many decades

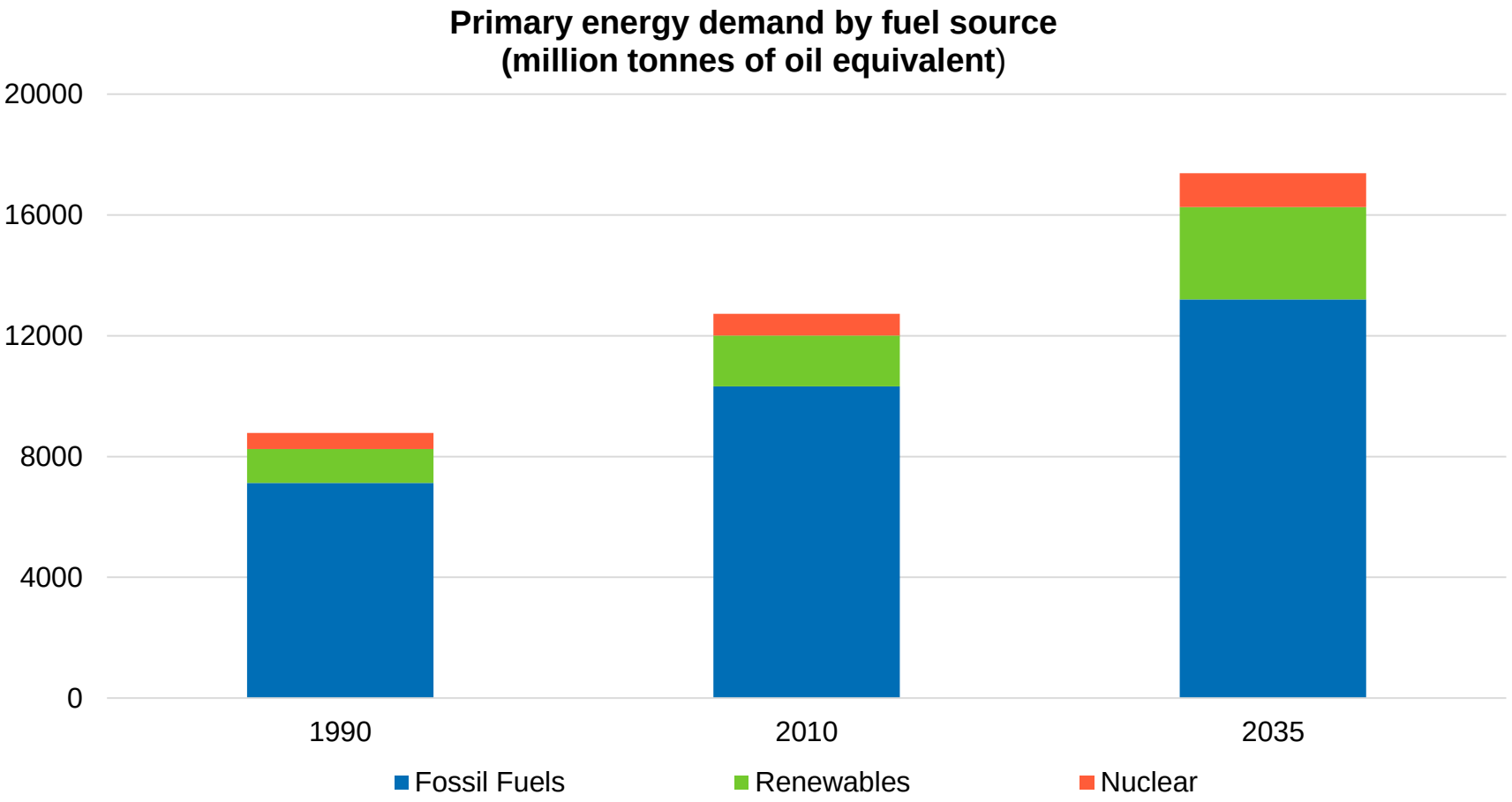
Bubbles show proved reserves in barrels of oil equivalent (boe) with bubble size expressed as the number of years of production remaining based on estimated production in 2013.



Source: *BP Statistical Review of World Energy* (2014)

134 GW coal capacity added in 2013 – at least double that of any other fuel.– IEA 2014

THE CASE FOR CCS
Fossil fuels continue to dominate energy use



Source: *IEA World Energy Outlook* (2013).

New Policies Scenario: assumes current climate change policy commitments and pledges by Government are fully implemented.

CCS is a must - have climate technology

CCS IS ESSENTIAL

Importance of CCS acknowledged

Wide adoption of CCS part of the scenario that achieves 450 ppm atmospheric stabilization level for CO_2

World Energy Council

CCS is an important technology in the long run…deployment to drive down costs is desirable

UK Committee on Climate Change

Availability of CCS is critical for producing 450 ppm

Energy Modeling Forum 27 Study

We intend to promote the use of low carbon technologies (renewable energies, nuclear in the countries which opt to use it, and carbon capture and storage)

G7 Energy Ministerial Meeting, May 2014

Commercial demonstration of CCS essential for deployment in the 2030 timeframe

European Commission

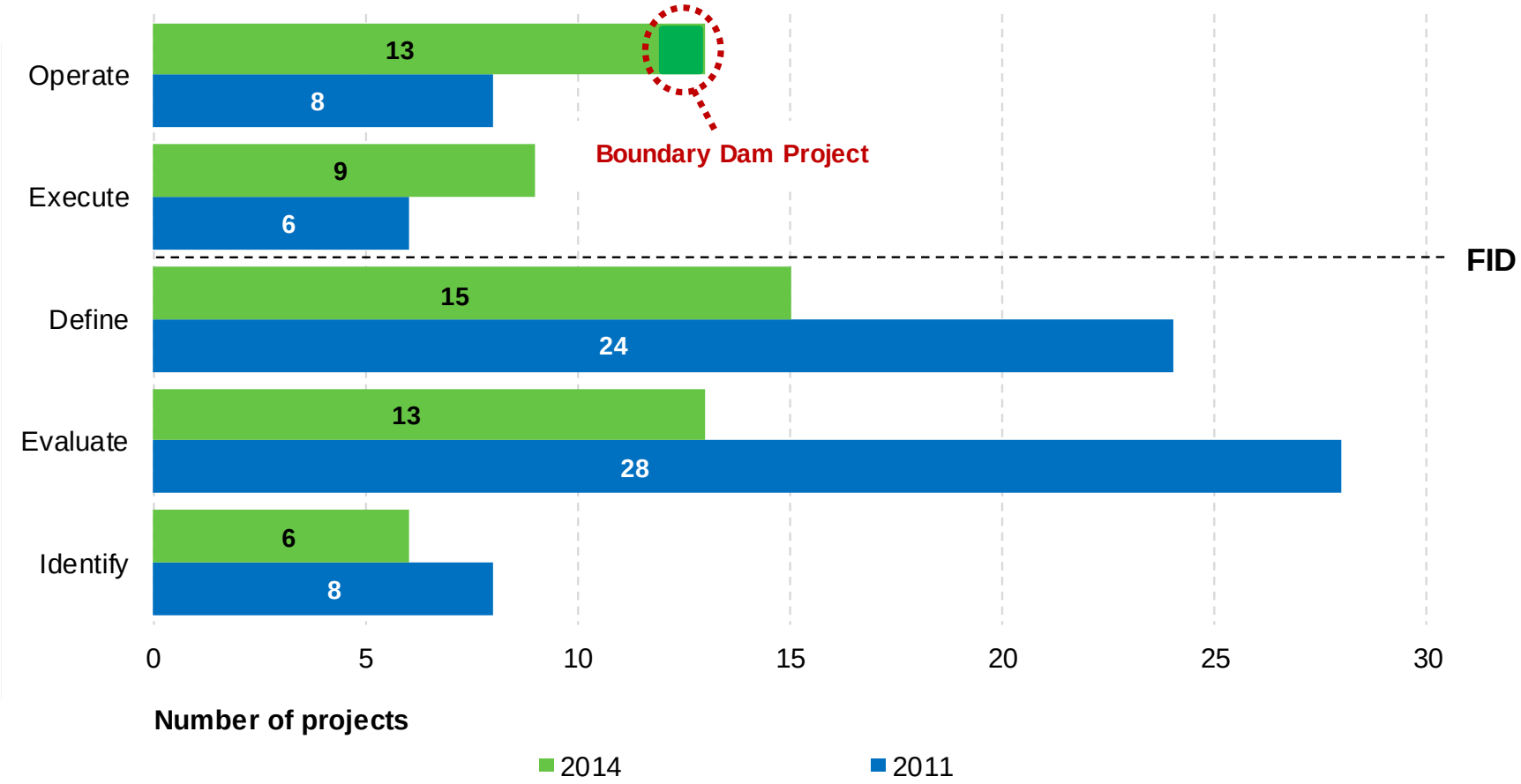
CCS to be cost effective when transformational technologies emerge

US Climate Action Report 2014

PROJECTS

PROJECTS

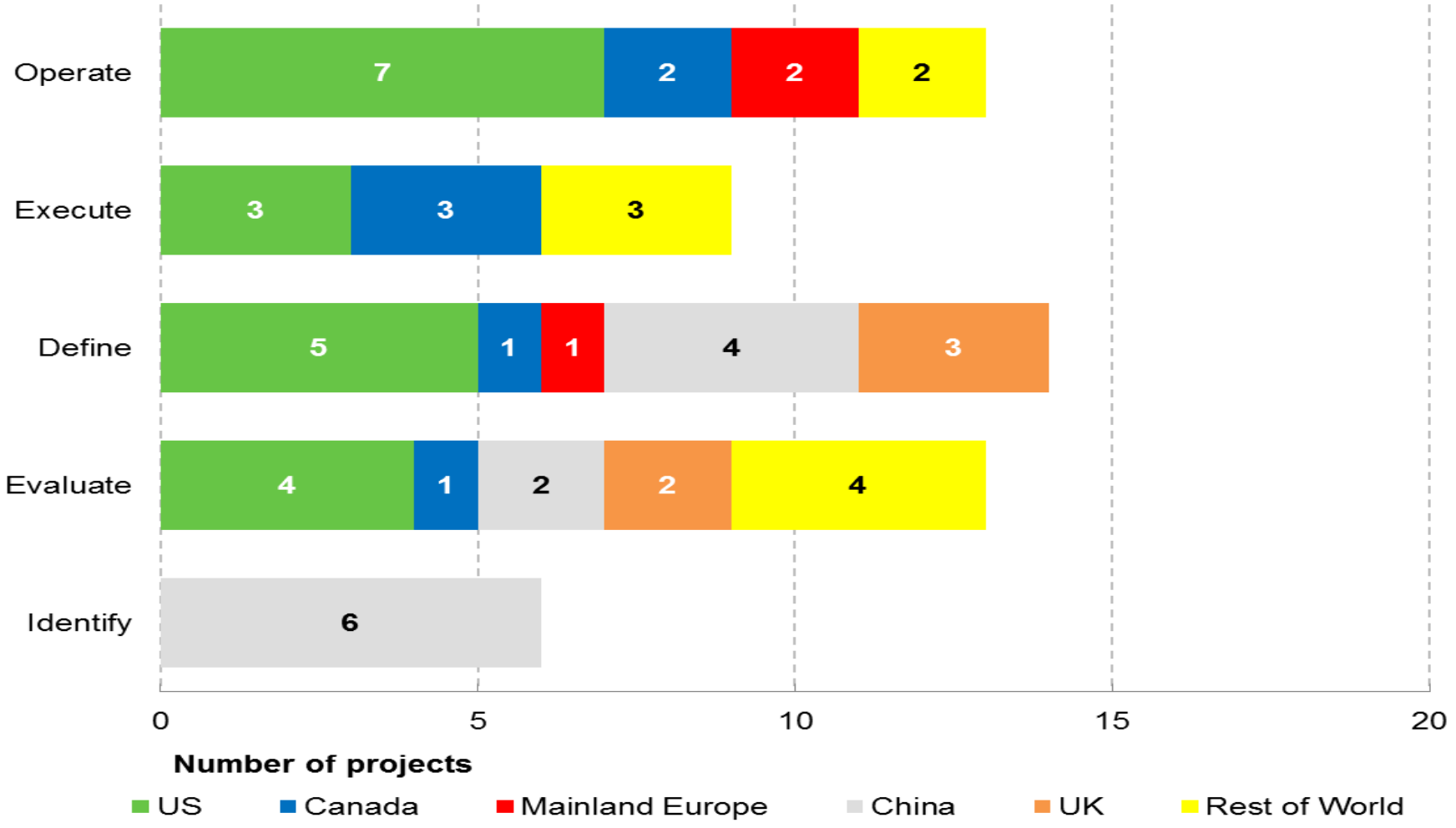
56 Large-scale Integrated CCS projects



22 projects in operation or under construction – 8 more than 2011 but progress on CCS has been much slower than expected a decade ago

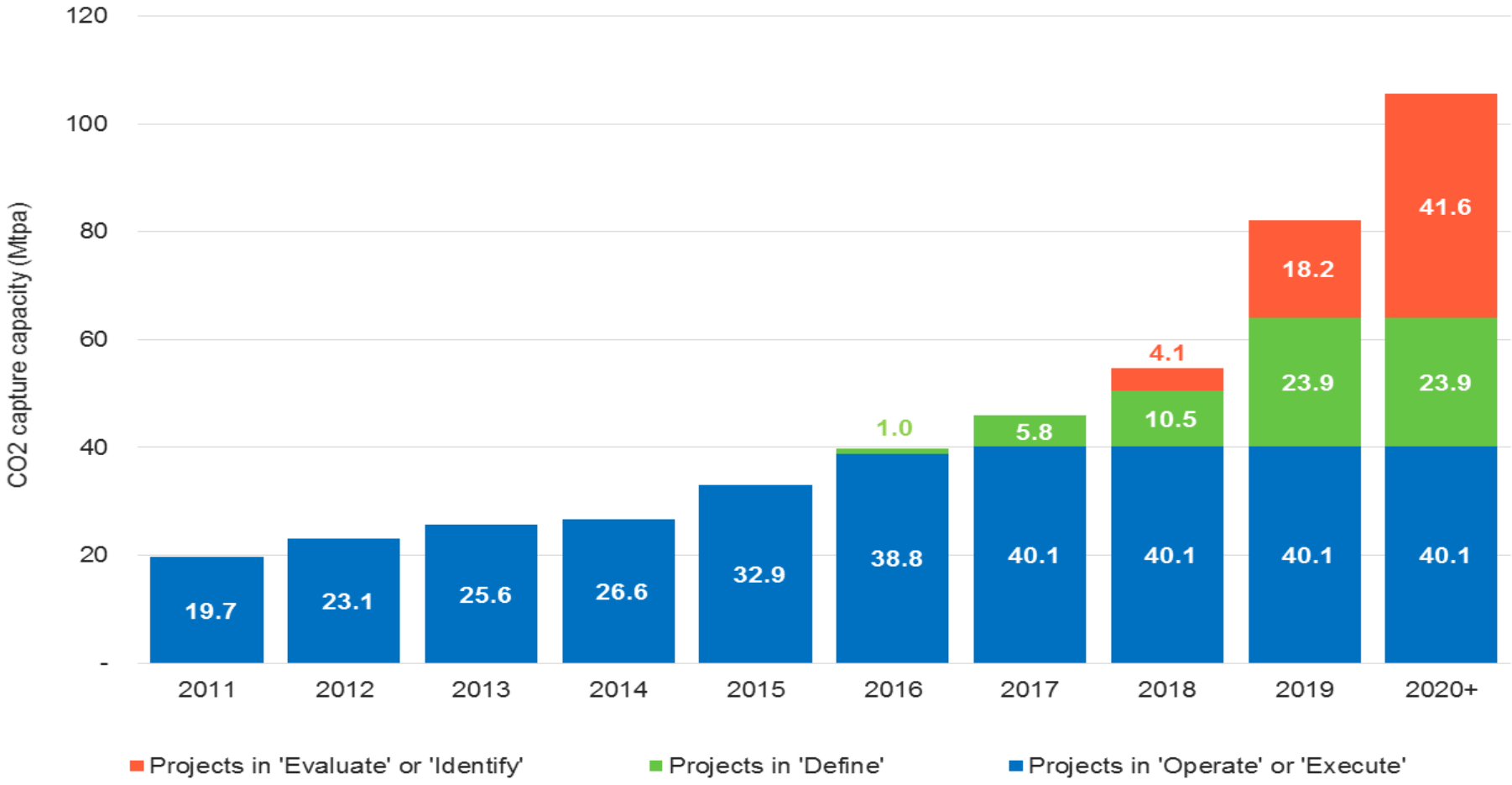
PROJECTS

CCS projects in key markets by project lifecycle



North America continues to dominate the projects landscape, with China increasing in importance

PROJECTS
CO2 capture capacity by actual and expected year of operation



IEA's assessment -123GtCO2 needing to be captured and stored between 2015 and 2050 to have any chance of halting global temperature rises

POLICY DEVELOPMENTS

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Latest global and regional policy developments

Canada

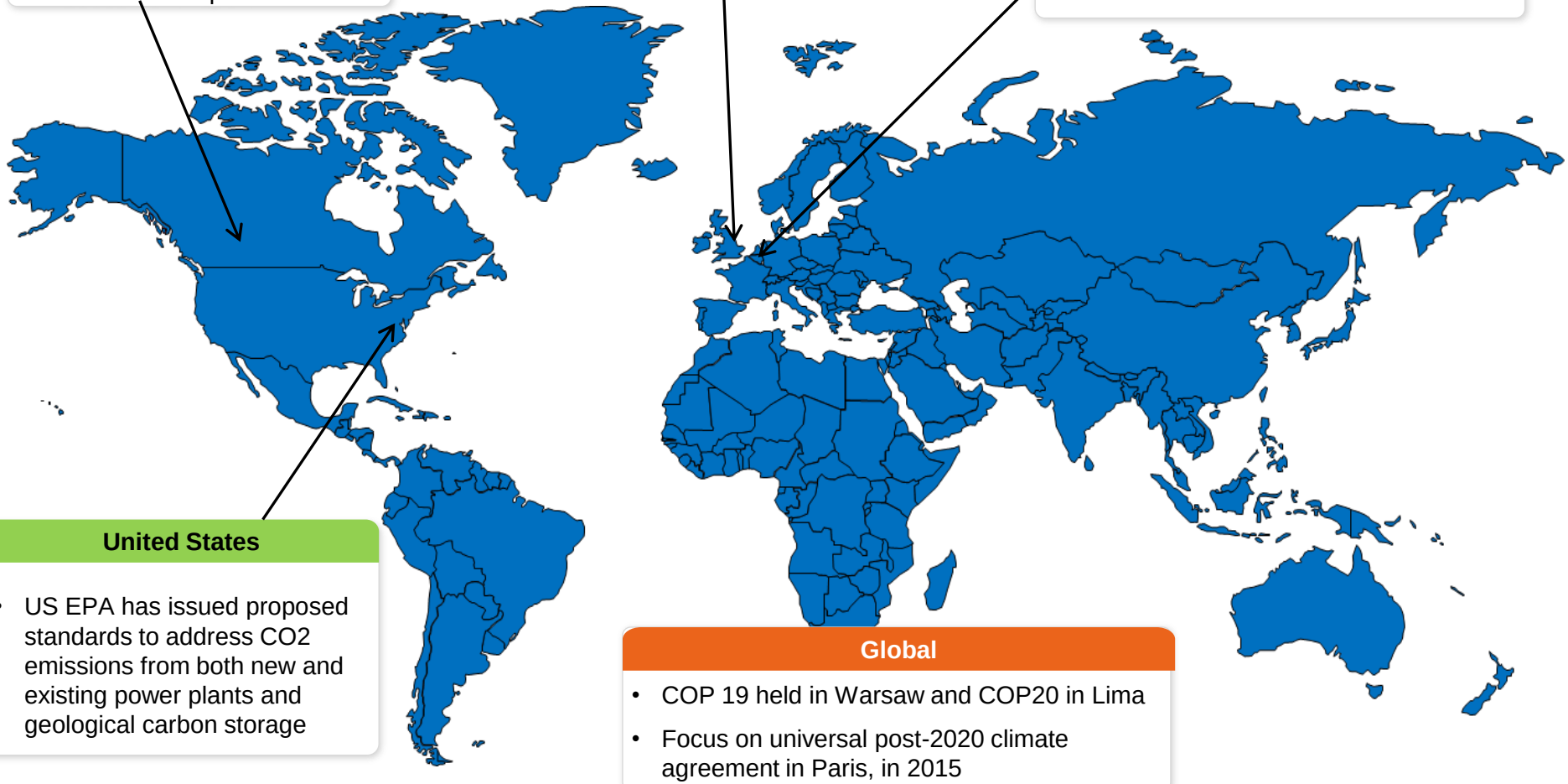
- Alberta Government releases final draft of the CCS Regulatory Framework Assessment report

United Kingdom

- UK Energy Act becomes law
- CCS Commercialisation programme
- UK Policy scoping document

Continental Europe

- EU Storage Directive assessment
- EC proposes climate targets out to 2030
- European Energy Security Strategy



United States

- US EPA has issued proposed standards to address CO2 emissions from both new and existing power plants and geological carbon storage

Global

- COP 19 held in Warsaw and COP20 in Lima
- Focus on universal post-2020 climate agreement in Paris, in 2015

POLICY DEVELOPMENTS
The role of UNFCCC for CCS

UNFCCC and KP major catalysts in incentivizing investment in low carbon technologies in developing countries.

UNFCCC embraced CCS since the Kyoto Protocol in 1997, recently in the CDM (2011) and Green Climate Fund (GCF)

Policy architecture in a state of transition, with new agreement and supporting mechanisms:

- Finance Mechanism: Green Climate Fund (GCF)
- Technology Mechanism: Technology Executive Committee (TEC) & Climate Technology Centre and Network (CTCN)
- New Market Mechanism etc..

Complexity slowed down negotiation since 2010 and New legally binding instrument (new 2015 agreement) scheduled to be agreed at the Paris COP in 2015

KEY MESSAGES

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- CCS is technically viable and economically feasible
- If CCS has to reach its full potential in emission mitigation, the greatest majority of CO2 will eventually have to be stored in dedicated geological reservoir such a deep saline aquifers.
- Most large scale projects are in the developed world and remain crucial to the successful demonstration and scaling up of CCS
- Strong political will and commitment is needed to support widespread deployment in the next decade and beyond
- Non OECD economies will account for the vast majority of growth in energy demand and will involve significant capture and storage of CO2 in these economies – the 2015 Post Kyoto agreement is critical

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CCS Storage Directive review

The 2030 Framework for Climate and Energy Policy sets out a package of measures aimed at addressing the EU's climate and energy targets out to 2030:

- Includes target to reduce EU domestic GHG emissions by 40% below the 1990 level by 2030
- References CCS as a key complementary policy "Increased R&D efforts and commercial demonstration of CCS are, therefore, essential over the next decade so that it can be deployed in the 2030 timeframe"
- It includes the Reform of the Emission Trading Scheme

Security on Energy Supply comes into greater focus

The document suggests that coal and lignite fuel sources have a long term future in the EU where CCS is used "CCS offers the potential to further improve gas and oil recovery that would remain untapped"

POLICY DEVELOPMENTS
The UNFCCC dimension

BACK UP SLIDE

UNFCCC has recently established a number of technology dedicated and relevant support mechanisms and institutions including:

- Technology Mechanism : Technology Executive Committee (TEC) and the Climate Technology Centre and Network (CTCN)
- Finance Mechanism: Green Climate Fund (US$100 Billion by 2020) and the Global Environment Facility (GEF)
- New Market Mechanism and Framework for Various Approaches
- Nationally Appropriate Mitigation Actions

Source: GCCSI (2014)

POLICY DEVELOPMENTS

BACK UP SLIDE

THE ROLE OF UNFCCC FOR CCS

- UNFCCC has embraced CCS since KP (1997), CDM (2011) and Green Climate Fund. Under GEF, there needs to be a critical scale of funds made available to support the ambitions of developing countries to manage their fossil fuel related emissions.
- While the potential of support offered to all clean energy technologies under the Technology Mechanism (TM) and financial mechanism is critically important, they are yet to fully embrace clean fossil energy technologies
- CCS is also eligible activity under the Climate Technology Centre and Network (CTCN) and resources need to be assured to be able to respond to developing country requests to assist them with both capacity building efforts or actual projects
- There are opportunities within the CTCN and GCF to not only strongly support CCS developments in developing countries but to also invite and materially engage the private sector to assist