How should the energy industry respond to any climate deal emerging from Paris 2015?

22 April 2015

Carbon markets and the 2015 Climate Agreement

Dirk Forrister
President & CEO, IETA
Denton's Global Energy Summit - London

22 April 2015

IETA

Climate Challenges, Market Solutions

International climate agreements

- **UN Framework Convention on Climate Change** (1992)
  - Ratified by most of the world and **still in force**
  - Aim to stabilize emissions at 1990 levels by 2000 – and to increase commitments to **stabilize concentrations at safe levels** over century
- **Kyoto Protocol** (1997)
  - **Binding targets** for developed countries for 2008 – 2012
  - Developing countries offered a “Clean Development Mechanism”
  - Ratified & entered force **without the US and Canada**
- **Copenhagen Accords** (2009)
  - New set of **commitments for 2020** – but ratification not required
- **Paris TBD** (2015)
  - Aims to govern the post 2020 period with **commitments for all**

Business interest in a global carbon market

- Climate goals achieved cheaper in **a linked global carbon market** - better than going it alone on path to 2°C
- Hopes for Paris to offer **basic policy infrastructure** to support linked compliance systems.
- **Links between Europe, China & North American ETS's** could be powerful in future
- **New asset classes** are gaining attention (REDD+)
- Beyond compliance - **pressure from major brands** (Unilever, Ikea, P&G) for GHG-friendly supply chains

Copenhagen to Paris – a series of negotiations

Cancun
- Submission of voluntary pledges
- Package of support measures for developing countries

Durban
- Launch of process for agreement applicable to all countries
- Work plan on enhancing pre-2020 ambition

Lima
- Elements for agreement in Paris
- Guidelines for intended nationally determined contributions

Paris
- Expected adoption of 2015 agreement
- Expected adoption of accompanying suite of decisions

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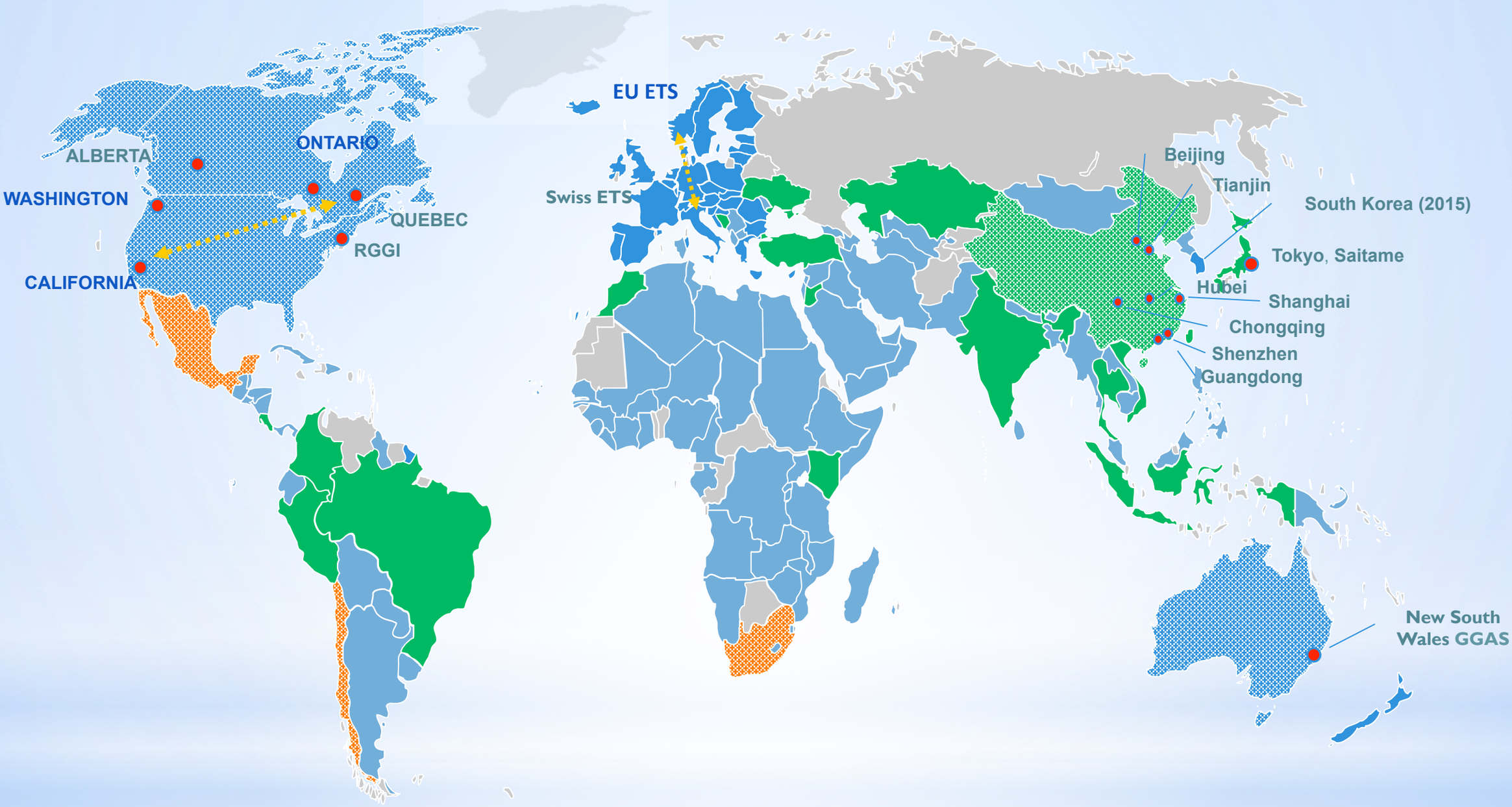
Source: UNFCCC

In context: global carbon markets in 2015



CDM Host Countries as of Feb 17, 2015 (UNEP DTU, data from the CDM Pipeline)

Existing Emission Trading Schemes

Emission Trading Scheme in Progress

Subnational Emission Trading Schemes

Carbon Tax with or w/o offsets

Linkages

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INDC's and Markets to Date

Party	INDC proposal
EU	At least 40% economy-wide domestic reduction from 1990 by 2030. No international credits, but maybe consider later.
Switzerland	50% reduction from 1990 by 2030. Reductions will partly come from international credits (CDM).
Norway	Matches EU target to be achieved jointly w/ EU. If EU agreement fails, then may access international credits
Mexico	25% below 2013 levels by 2030 (22% GHG + 51% from black carbon from 2013 levels). Could increase to 40% with fully functional international market mechanisms.
US	26 – 28% below 2005 by 2025. No plans at present for int'l markets.
Russia	20 – 25% below 1990 by 2030. No plans for international credits.
Gabon	At least 50% below BAU by 2025. Intends to set up national market for carbon offsets.

Role of markets in UN negotiations

- Nations seek to **accommodate national priorities**
  - Paris is different from Kyoto – “bottom up” vs. “top down”
  - Parties prepare “Intended Nationally Developed Contributions (INDCs)
  - Many intend to use markets, so what role for UN, if any?

- **Market proponents** want the agreement to include -
  - Use of markets subject to defined criteria
  - Consistent accounting rules (imports/exports), no double counting
  - Potentially recognize UNFCCC and non-UNFCCC markets

- **Alternative views**
  - Some Parties ideologically opposed to markets, so want NOTHING
  - Some support market,s but don’t see the need for provisions in Paris

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The Paris Agreement

- May well be quite short;
- Probably more outline than substance;
- Big picture items only;
- Plenty of COP decisions later;
- Each idea or concept gets just a few lines.
- Markets and carbon pricing are still struggling to gain global acceptance

So how do we create the essence of a global carbon market?

IETA Strawman: Just a few lines to create a global carbon pricing system

Cooperation between Parties in realizing their Contributions

1. Parties may voluntarily cooperate in achieving their mitigation contributions.

2. A unified international transfer system is hereby established.

   a. A Party though private and/or public entities may transfer portions of its nationally defined contribution to one or more other Parties through carbon units of its choice.

   b. Transfers and receipts of units shall be recorded in equivalent carbon reduction terms.

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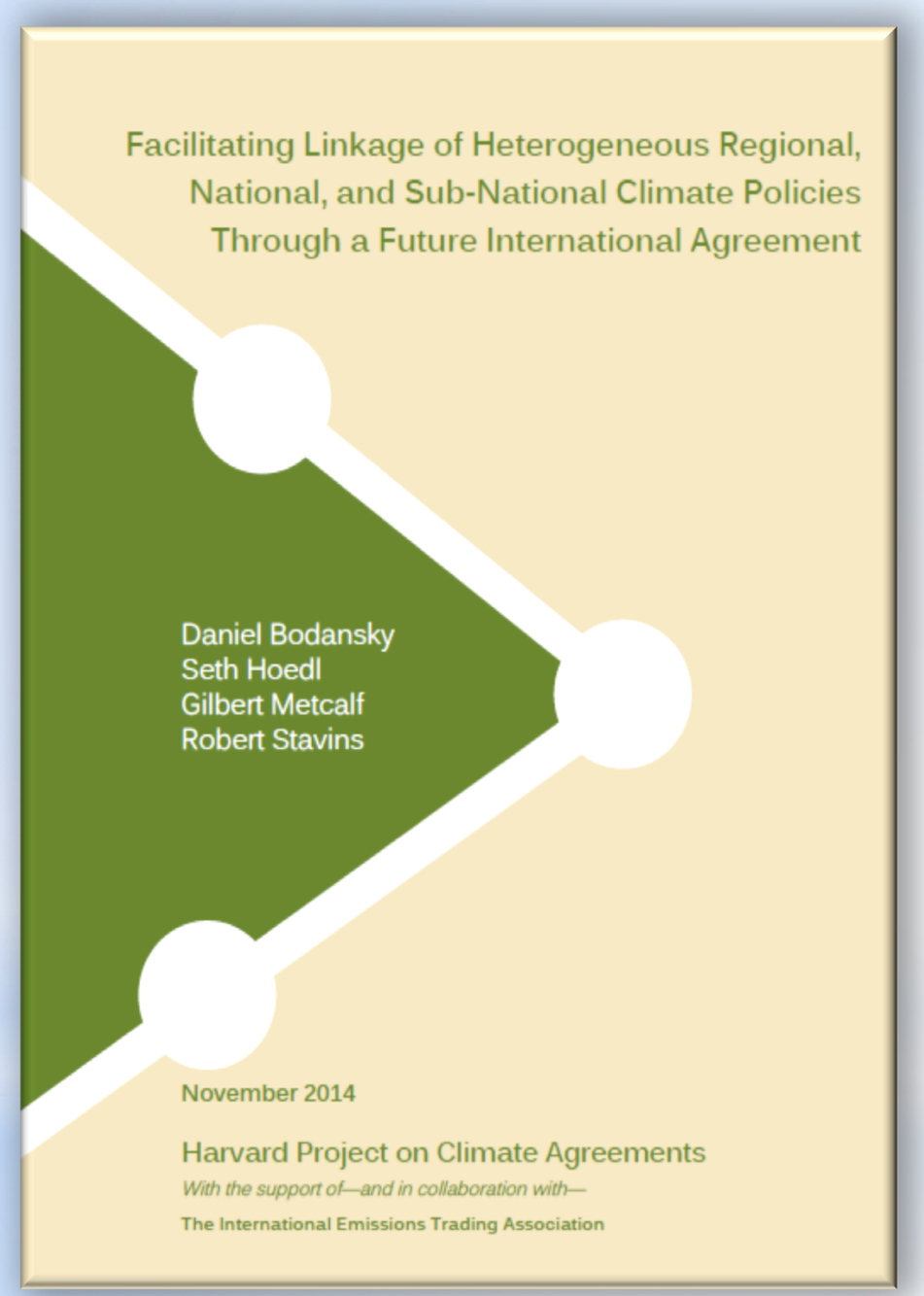
Harvard Kennedy School Insights



Explores the role of linkage in the new international climate-change agreement to be completed in Paris in December 2015

"The authors conclude that the most valuable outcome of the Paris Agreement regarding linkage may simply be including an explicit statement that parties may transfer portions of their emissions-reduction contributions to other parties—and that these transferred units may be used by the transferees to implement their own commitments."

IETA

Thank you

For More Information, please visit

www.ieta.org

IETA

Climate Challenges, Market Solutions

Department
of Energy &
Climate Change

Why Carbon Capture & Storage?

Ashley Ibbett
Director, CCS, DECC
22 April 2015

Department of Energy & Climate Change

2008 Climate Change Act

There are three main pillars to the Climate Change Act

1. Ambitious climate change targets for 2050

The Act commits to the UK to reducing greenhouse gases by 80% by 2050

(compared to 1990 levels)

This was chosen as an "appropriate UK contribution to global mitigation effort to keep warming to 2°C

2. Binding carbon budgets

The Act requires that Government caps emissions over successive 5-year periods

These budgets must be set 12 years in advance

They are set to deliver a cost-effective transition to the 2050 goal

3. Clear accountability framework

The Act established an independent Committee on Climate Change to provide advice and scrutiny

The CCC provide advice on budget levels and produce an annual progress report to Parliament

The Act also reflects the wider benefits (e.g. for air pollution) of tackling climate change

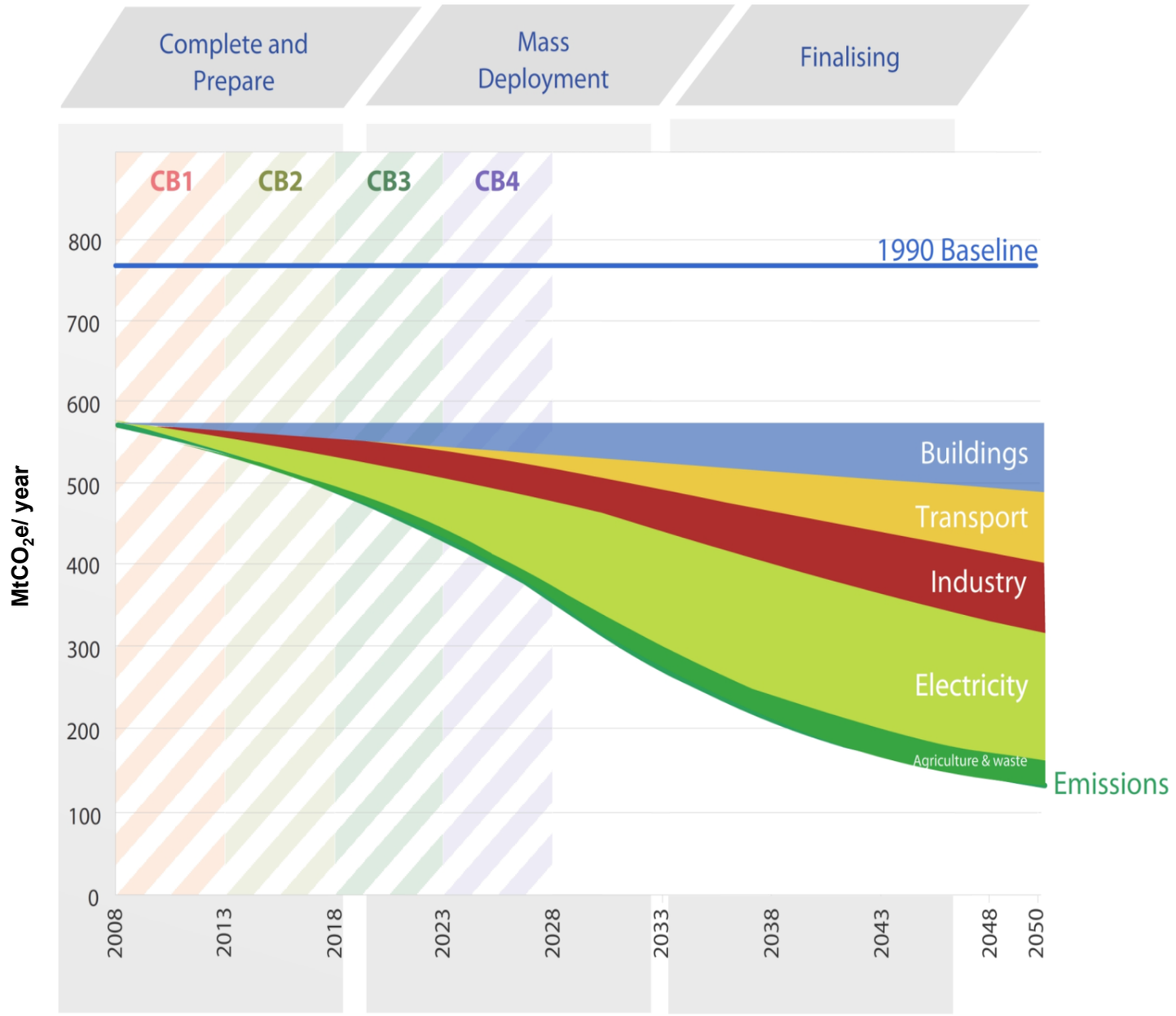
Department of Energy & Climate Change

Action will be required across the economy to meet carbon budgets

The Act requires the Government to set out policies and plans to meet carbon budgets.
The 2011 Carbon Plan took a scenario based approach, recognising uncertainty in planning to 2030 and beyond

It set out a three stage strategy:

- **Phase 1: Complete and prepare –** From now to 2020
- **Phase 2: Mass deployment –** In the 2020s and 2030s
- **Phase 3: Finalising –** From 2030 onward



Department of Energy & Climate Change

Climate Pledge, February 2015

Climate change is one of the most serious threats facing the world today. It is not just a threat to the environment, but also to our national and global security, to poverty eradication and economic prosperity.

Acting on climate change is also an opportunity for the UK to grow a stronger economy, which is more efficient and more resilient to the risks ahead. It is in our national interest to act and to ensure that others act with us.

2015 offers a unique opportunity to accelerate that opportunity, with countries pledging their contributions to action before the world comes together at Paris at the end of the year to reach an agreement on tackling climate change. It is vital that this agreement is a success, and the UK will play its part in ensuring an ambitious outcome.

That is why we pledge:

- To seek a fair, strong, legally binding, global climate deal which limits temperature rises to below 2°C.
- To work together, across party lines, to agree carbon budgets in accordance with the Climate Change Act.
- To accelerate the transition to a competitive, energy efficient low carbon economy and to end the use of unabated coal for power generation.

The Rt Hon David Cameron MP
Prime Minister

The Rt Hon Nick Clegg MP
Deputy Prime Minister

The Rt Hon Ed Miliband MP
Leader of the Opposition

Department of Energy & Climate Change

CCS: Strategic importance

DECC's vision is to promote economic growth by delivering affordable, sustainable and secure energy to the UK, while driving ambitious action on climate change internationally

Security of supply

Fossil fuels – **67%** of electricity mix in 2013

Only way to use UK's indigenous resources without the emissions

Jobs and growth

Thousands of construction jobs supported

Key technology for decarbonising **Energy Intensive Industries**

Climate change

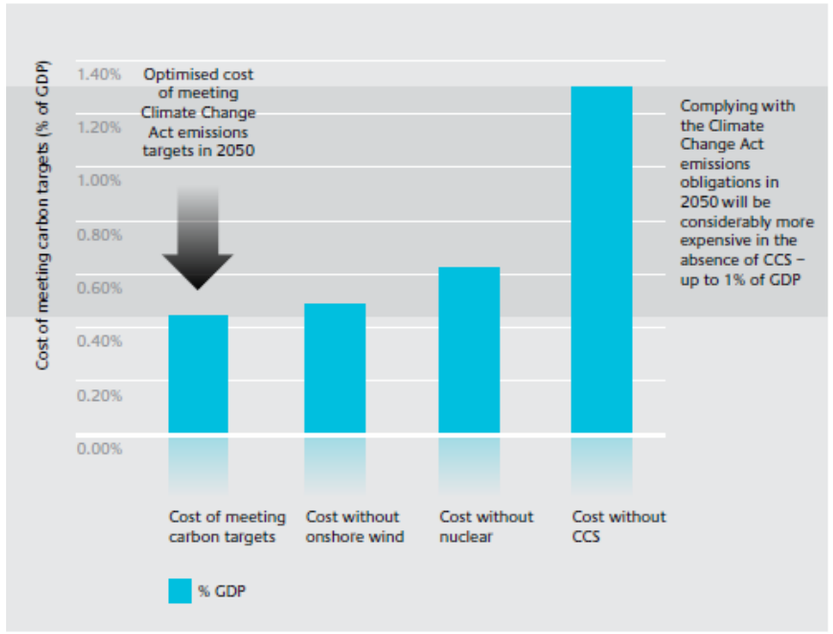
Fossil fuels still power over **80% world energy** & expected to continue

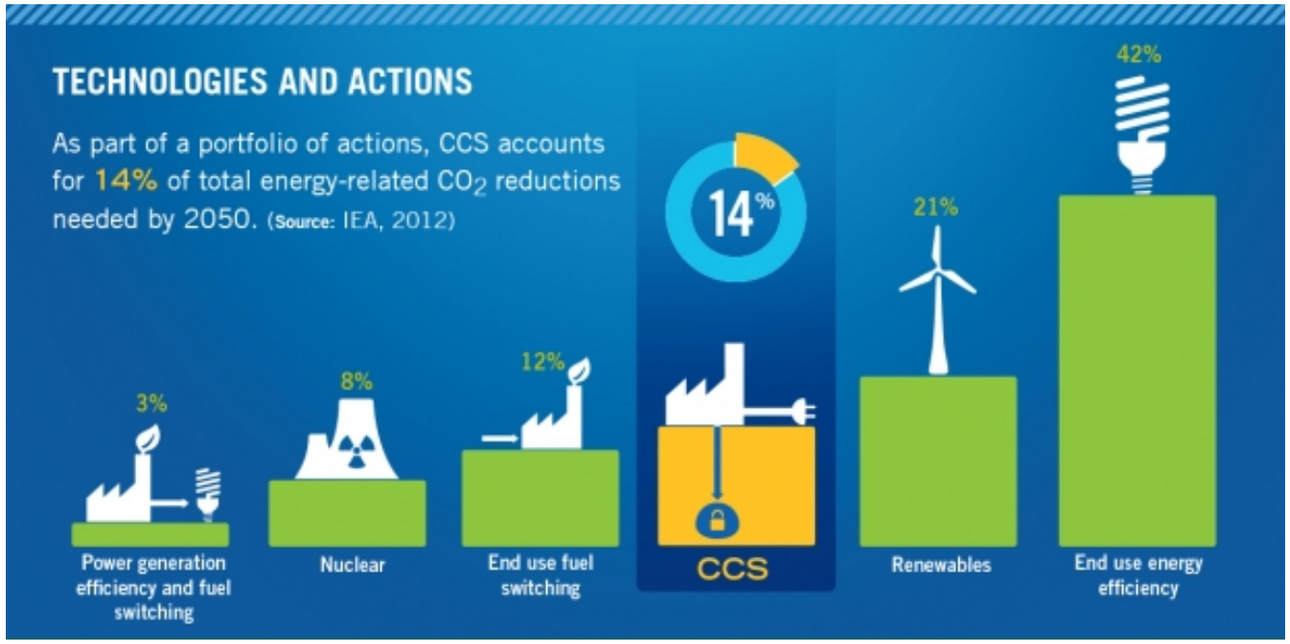
Affordability

CCS can play an important role in a least cost decarbonisation pathway

Department of Energy & Climate Change

Key mitigation tool…

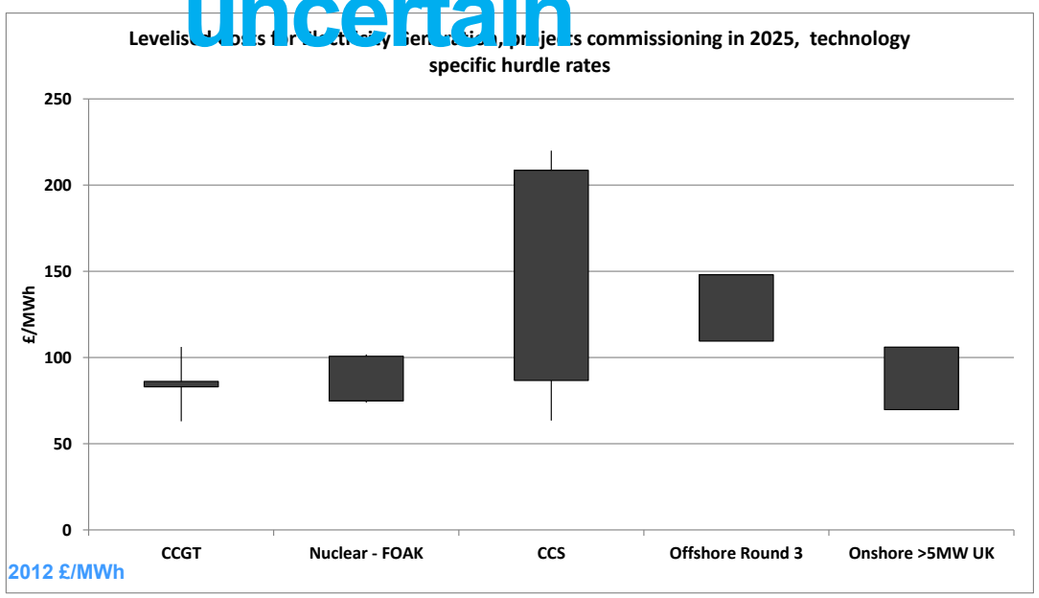


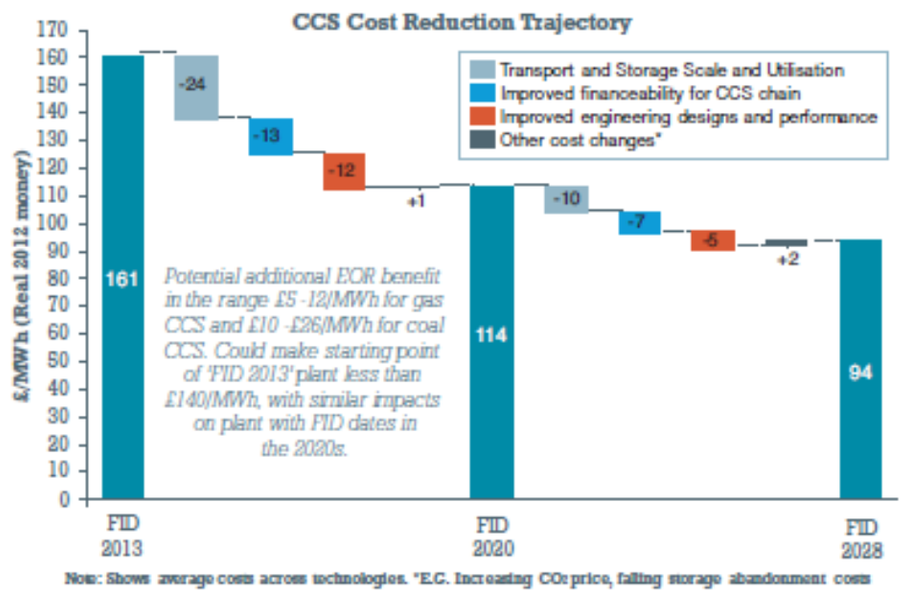


"Successfully deploying carbon capture and storage would be a huge economic prize for the UK in its low carbon transition, cutting the annual cost of meeting our carbon targets by up to 1% of GDP by 2050"

- ETI / Ecofin 2012

…and like other technologies, costs are uncertain





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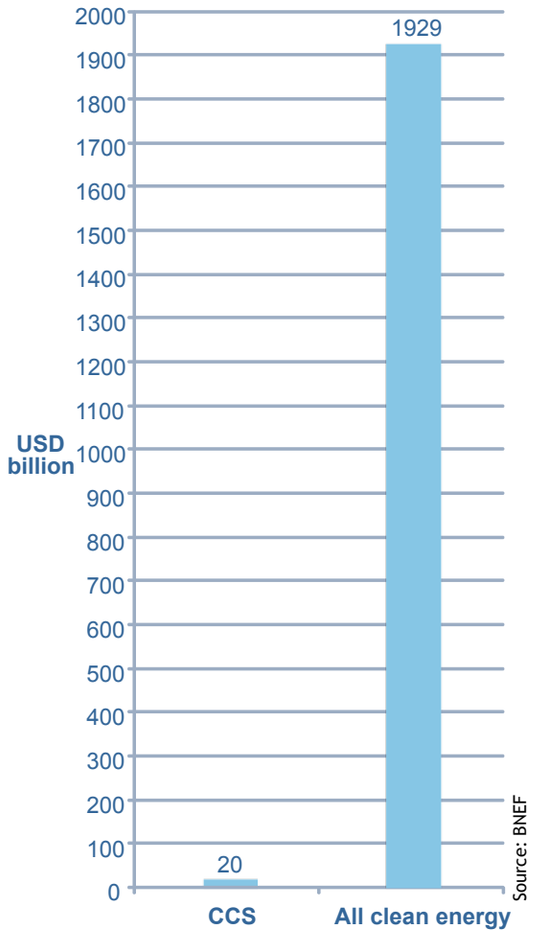
Global investment has been slow

Global clean energy investment* between 2004-2013 (USD):

CCS:
20
billion

All clean energy:
1929
billion



* Includes technology development, projects, M&A.
Source: BNEF.

Boundary Dam, Canada is the world's first commercial scale CCS power project – post combustion coal, 115MW, opened 2014

The Sleipner Project, offshore Norway, is storing 1M tonnes of CO2 per year and has been operating since 1996

Kemper, US, 582MW coal will be operational in 2016. Project cost $5.6bn

Petra Nova, US, 250MW coal is under construction and in operation in 2016

Department of Energy & Climate Change

CCS Competition

White Rose

- An Oxyfuel capture project at a proposed new 304MW fully abated supercritical coal-fired power station on the Drax site in North Yorkshire.
- Led by White Rose Consortium: Capture Power (Alstom, BOC, Drax) with National Grid Carbon.

Peterhead

- A 340MW Post-combustion capture retrofitted to part of an existing Combined Cycle Gas Turbine power station at Peterhead, Aberdeenshire.
- Storage offshore in Goldeneye depleted gas field.
- Led by Shell with SSE.

Dentons – Global Energy Summit, London 21-22 April 2015

Digital Worldwide Proximity:
Connecting decision makers with the public opinion for fruitful COP21 negotiations

Dr Adrienne Corboud Fumagalli, EPFL Vice-President

ÉCOLE POLYTECHNIQUE
FÉDÉRALE DE LAUSANNE

PARIS 2015 OPPORTUNITY OR THREAT ?

- How **stakeholders of the energy industry should engage** with the large audience by articulating their concerns about the Climate issue **in a positive manner**?
- Should COP21 be an opportunity for a ***corporate social responsibility in action***?
- What are the **fears and challenges** in term of **communication** for the energy industry?

Climate Summit in Copenhagen

"…everybody here has other much more important business to take care of."

http://youtu.be/-ybecKdwj2c

COP 21 UNFCCC
A CRUCIAL STAGE OF NEGOTIATIONS ON CLIMATE CHANGE

THE CHALLENGE :

- **educate the public**, ensuring **greater transparency** and clarity of the negotiation discussions and opinions
- increase both **breadth and depth of the dialogue and engagement** with major negotiation stakeholders
- provide an opportunity for **Corporations to engage in a conversation** on topics of interest by presenting their actions and points of view more effectively

- THE OBJECTIVE:

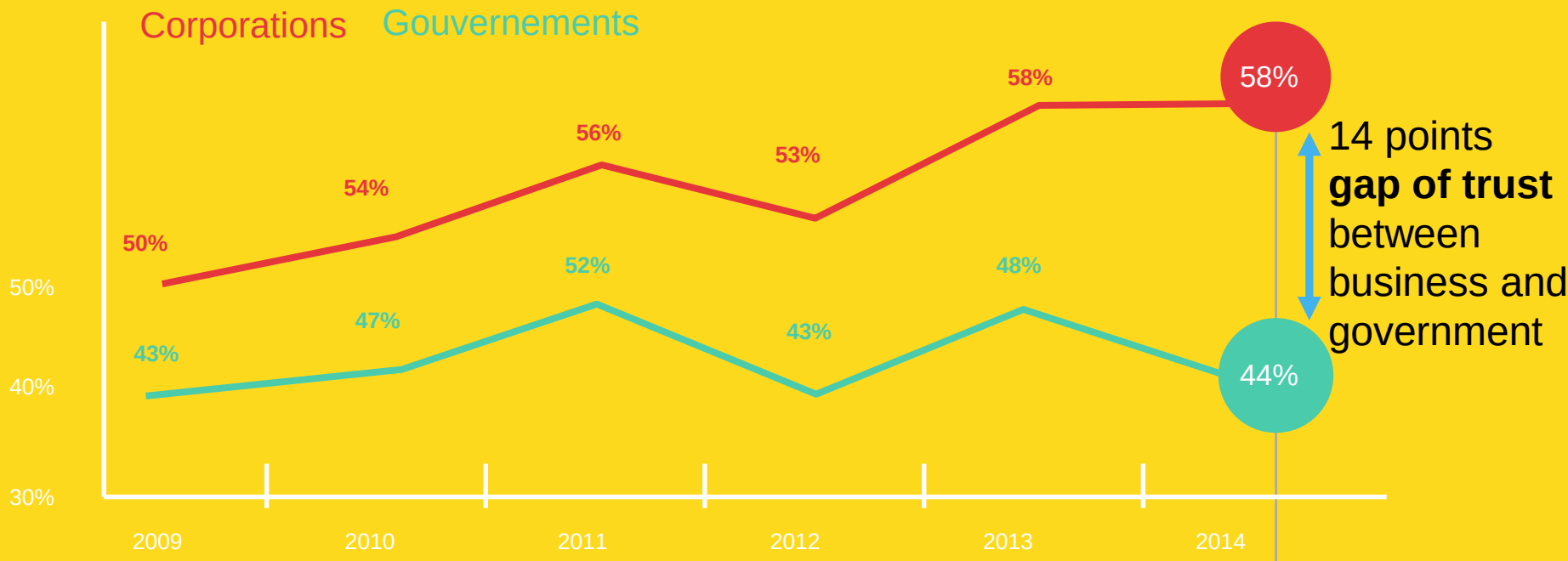
  TO UNDERSTAND AND MONITOR REAL-TIME NEGOTIATIONS

- THE CHALLENGE :

  From BIG DATA towards

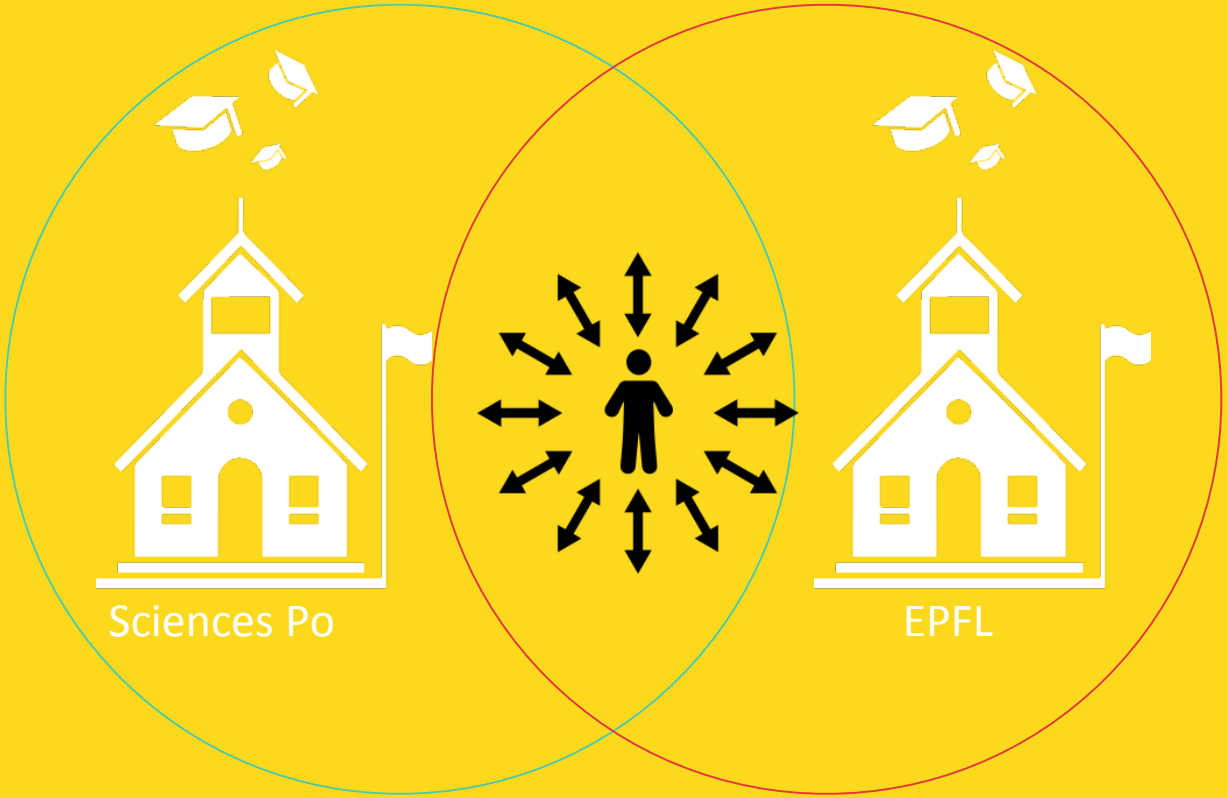
  SMART DATA AND VISUALIZATION

Corporations should leverage the increasing level of trust by the general public



Growing power of the general public

Growing influence of the industry on the public opinion



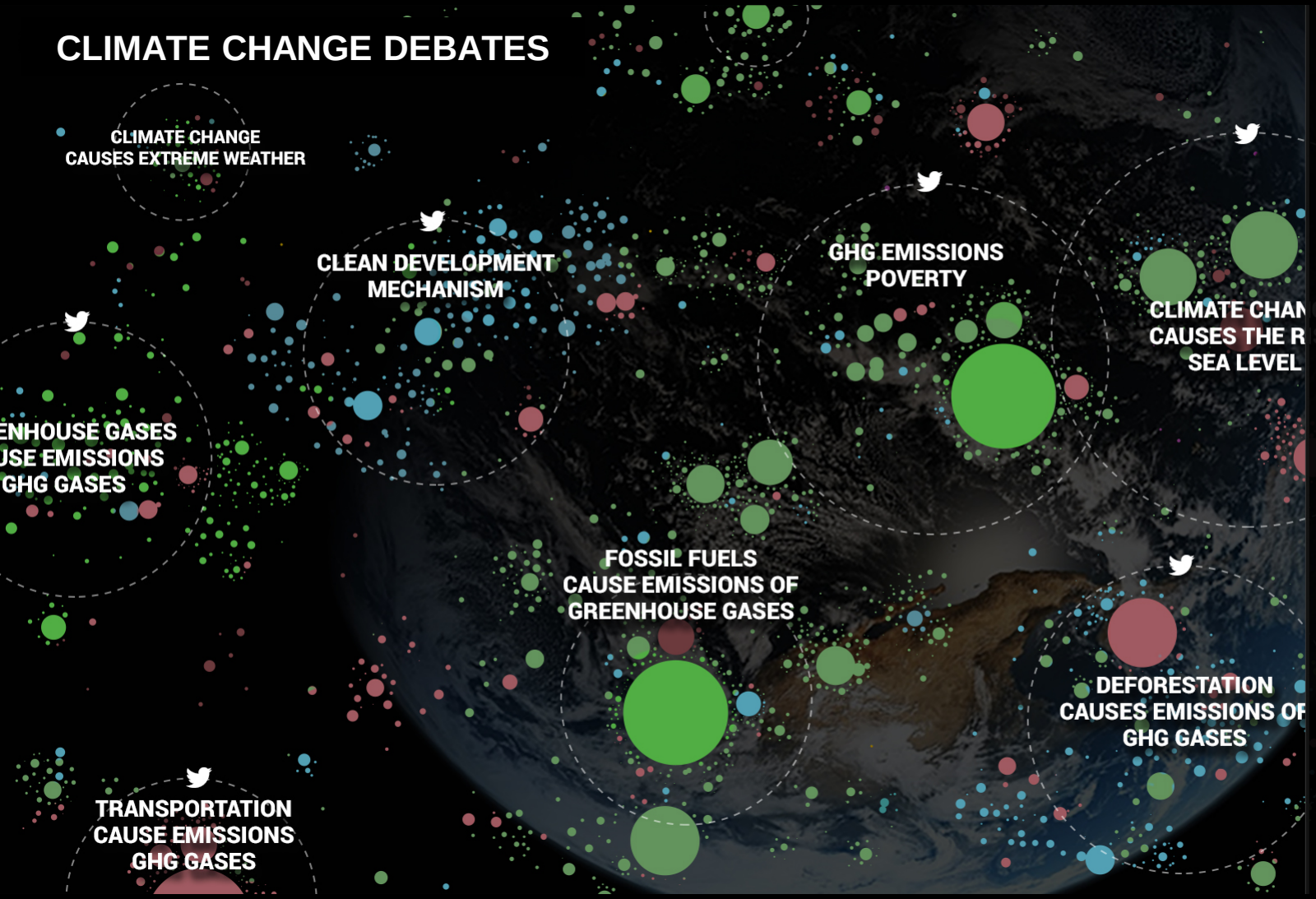
Two top schools, Sciences Po and EPFL have partnered to :

- Create a powerful discussion platform at the global scale
- Offer institutions and the general public a novel environment for democratic debate

KEY FEATURES

- **A participative event platform that shows the evolution of opinions**
- **A historical mapping of ongoing discussions, issues, positions and arguments**
- **Real-time analysis of the climate change discussions in scientific media, traditional and social networks**
- **Clear visual presentation of the results including media-oriented materials**
- **Post COP21 :**

Flexible platform for enterprises or government organizations



› CLOSE

SEARCH

topic, controversies...

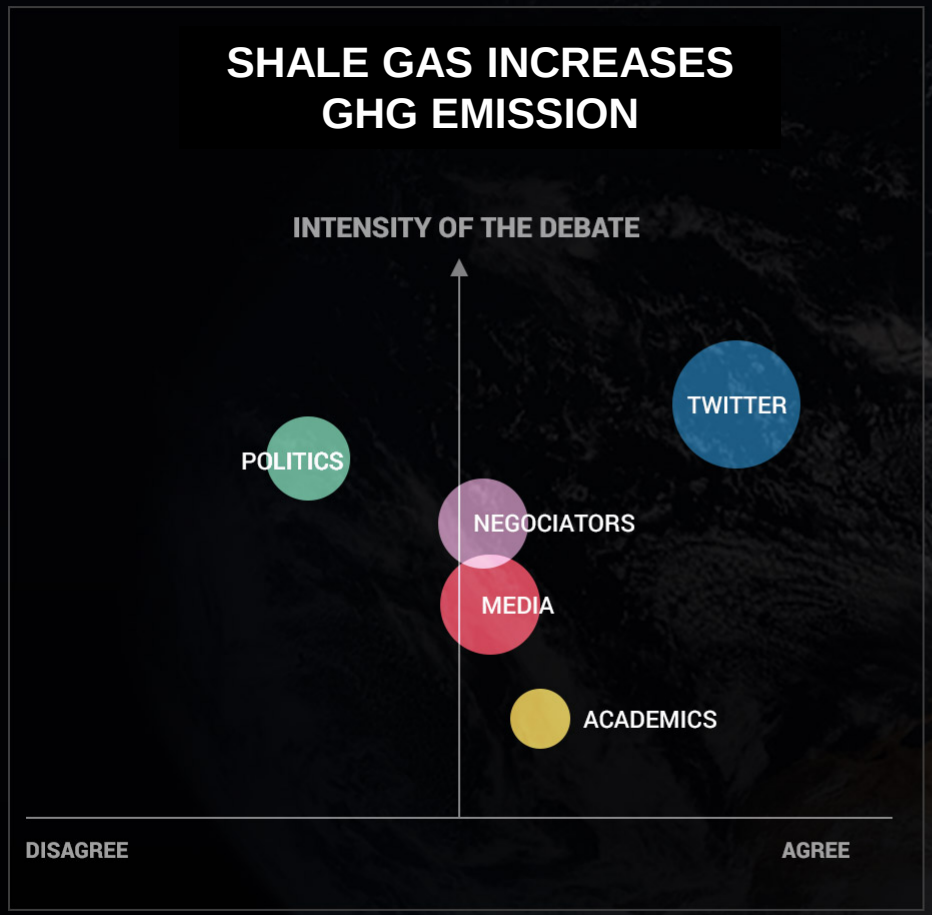
FILTRER BY OPINION

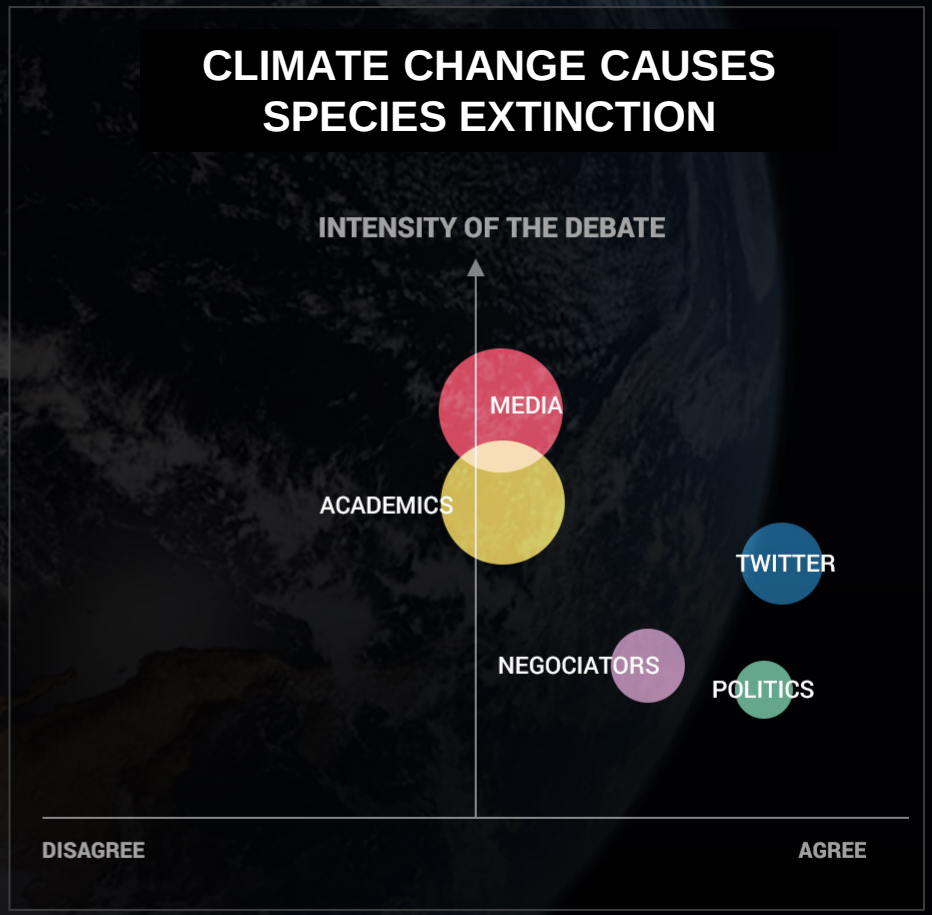
- Positive opinion
- Neutral opinion
- Negative opinion

FILTER BY SOURCE

- MEDIAS
- TWITTER
- ACADEMICS
- NEGOTIATORS
- POLITICS

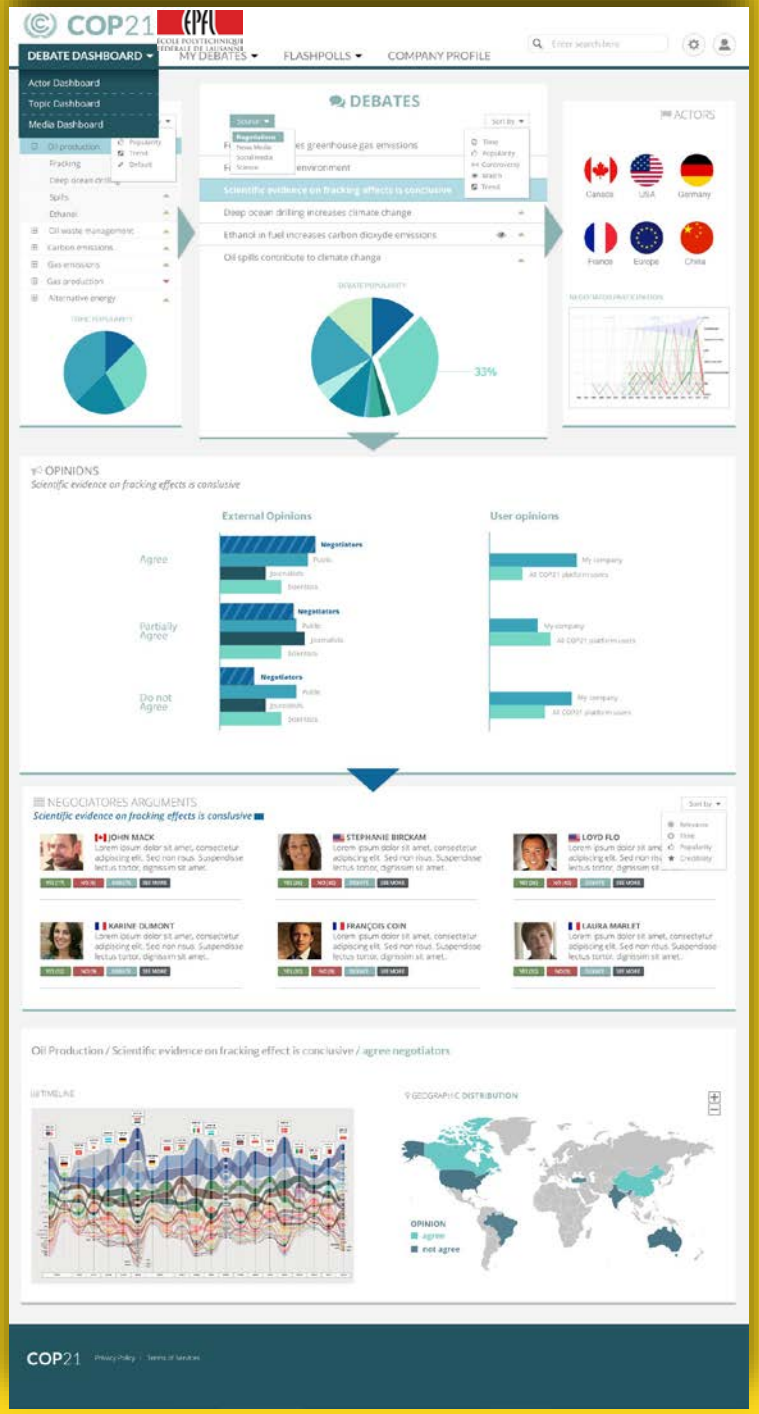
Analyze in real time and link the discussions between negotiators debates and positions in scientific media,traditional media and social networks






COP21 - CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE
CHANGEMENTS CLIMATIQUES
LES DEBATS
COP15
COPENHAGEN
IDLO


COPENHAGEN COP15
ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE
CLIMATE CHANGE
FOSSIL FUELS CAUSE GHG EMISSIONS
FOSSIL FUELS CAUSE GHG EMISSIONS
54%
17%
29%
IT IS ESSENTIAL TO REACH AGREEMENT IN THE COP 21
Louis Schweitzer
CLOSE
SEARCH
Topic, controversis...
FILTER BY OPINION
Positive opinion
Neutral opinion
Negative opinion
FILTER BY SOURCE
MEDIA
TWITTER
ACADEMICS
NEGOTIATORS
POLITICS

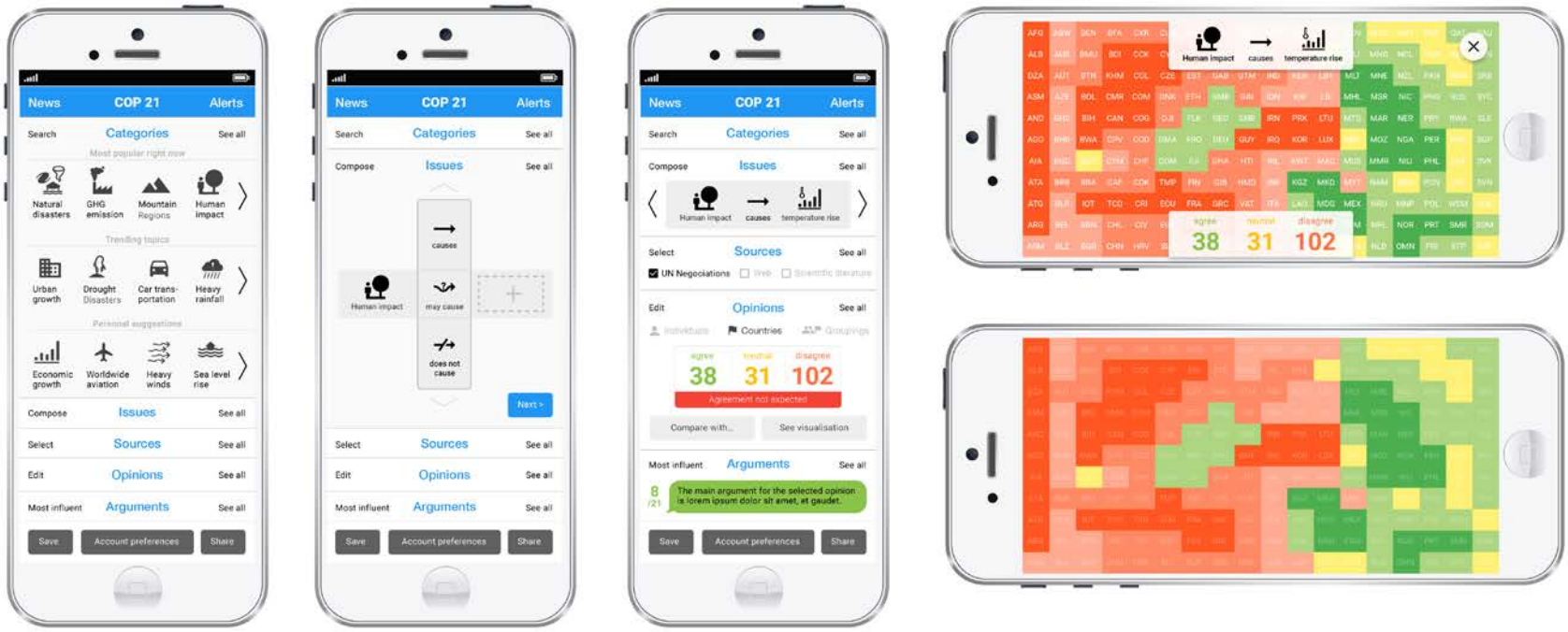

COP21
DEBATE DASHBOARD
MY DEBATES
FLASHPOLLS
COMPANY PROFILE
Actor Dashboard
Topic Dashboard
Media Dashboard
DEBATES
ACTORS
Canada
USA
Germany
France
Europe
China
Scientific evidence on fracking effects is conclusive
Deep ocean drilling increases climate change
Ethanol in fuel increases carbon dioxyde emissions
Oil spills contribute to climate change
33%
OPINIONS
Scientific evidence on fracking effects is conclusive
External Opinions
User opinions
Agree
Partially Agree
Do not Agree
Negotiators
Public
Journalists
Scientists
My company
All COP21 platform users
NEGOCIATORES ARGUMENTS
JOHN MACK
STEPHANIE BIRCKAM
LOYD FLO
KARINE OLMONT
FRANÇOIS COIN
LAURA MARLET
Oil Production / Scientific evidence on fracking effect is conclusive / agree negotiators
TIMELINE
GEOGRAPHIC DISTRIBUTION
OPINION
agree
not agree
COP21


COP21
DEBATE DASHBOARD
MY DEBATES
FLASHPOLLS
PROFILE
NEW FLASHPOLL
TOTAL
How does fracking
Does fuel ethanol contribute to global warming?
Does deep ocean drilling increase climate change?
Is scientific evidence on fracking effect conclusive?
Oil spills contribute on climate change?
1 Fracking increasing gas greenhouse
2 Fracking decreasing gas greenhouse emission
3 Evidence of fracking effect on greenhouse gas emission is inclonclusive
FLASHVOTERS (1781)
+MORE
VOTER OPINION
60%
25%
15%
EXTERNAL OPINION
Negotiator
Public
Journalists
Scientists
OPINION
agree
not agree
COMMENTS
Je suis pour la taxation
Moi aussi !
Je pense qu'il faut la limité
Trop de taxes !!!
Un taxation progressive est la meilleur solution.
Non ! le fracking est dangereux pour la planète
RELATED CONTENT
TITLE
COP21

Mobile General Public Interface

COP 21

Debate insight



PARIS 2015
OPPORTUNITY OR THREAT FOR A SOLUTION TO A GLOBAL ISSUE

COPENHAGEN, inability of the political leaders

"…everybody here has other much more important business to take care of."

COPENHAGEN reflects the FORMER WORLD

Before the real deployment and strength of the social media

PARIS 2015 : 21st CENTURY APPROACH

- **Real-time analysis** of the climate change discussions of the **negotiators debates** and positions in **scientific media, traditional media and social networks**
- Broader themes and arguments discussed **with and for to the general public**
- Clear **visual presentation** of the results for media-oriented materials

Post COP21 : Flexible platform to pursue the conversation and manage internal or external corporate **communication** and engage a dialogue with the different stakeholders

THE TEAM EPFL-SciencesPo COP21

Karl Aberer, Vice-President Information Systems EPFL, Project advisor

EPFL Technological development

- Alexey BOYARSKY, Project manager
- Alexander POLONSKY, Product manager
- Alex CONSTANTIN, Technical lead
- Amit GUPTA, PhD student & Software developer
- Victor MA, PhD student & Software developer
- Ashish BINDAL, Masters student & Software developer

Sciences Po mediaLab Controversy mapping

- Tommaso VENTURINI, Ass. Prof. and Coordinator of Research Activities
- Paul GIRARD, Technical director
- Nicolas BAYA-LAFFITE, Junior researcher, Climate debate expert
- Anders MUNK, Senior researcher, Controversy mapping expert

Marketing and Business development

- Bruno BRETON, Business development
- Ariane BUFFON, Marketing and communication
- Jean Luc Jacquier, Coordination
- Alexander POLONSKY, Product manager

Thank you for your attention

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