Under 2 MOU: 2050 strategies towards 1.5°C with States, Regions and Cities

Official UNFCCC COP22 Side Event
15 November 2016, Marrakech

C40 CITIES
CLIMATE LEADERSHIP GROUP

CLIMATE ANALYTICS

UNDER 2°
SECRETARIAT THE °CLIMATE GROUP

WELCOME

Her Excellency Ms. Laurence Tubiana, *French Ambassador for Climate Change and High-Level Climate Champion of France*

Introduced by Ken Alex, *Senior Policy Advisor to Governor Jerry Brown, California*

Hon. Mayor Eduardo Paes, *Mayor of Rio de Janeiro City (video message)*

DIALOGUE – What do cities, states and regions need to deliver on 1.5°C?

Moderator: Ken Alex, *Senior Policy Advisor to Governor Jerry Brown, California*

Hon. Philippe Couillard, *Premier of Québec*

Dr. Bill Hare, *Founder and CEO of Climate Analytics*

Hon. Karolina Skog, *Cabinet Minister for the Environment, Sweden*

Mr. Mark Watts, Executive Director, C40 Cities Climate Leadership Group

CLIMATE ANALYTICS

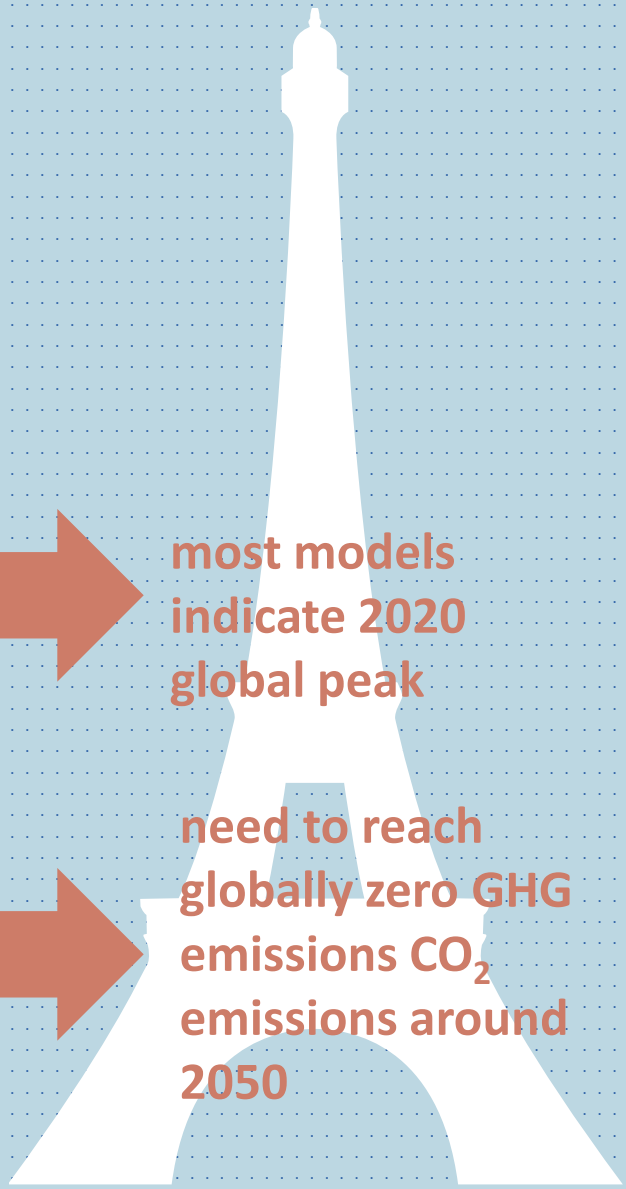
How are we tracking towards the 1.5° C limit in the Paris Agreement?

Bill Hare

Paris Agreement Goals and Scientific Assessment

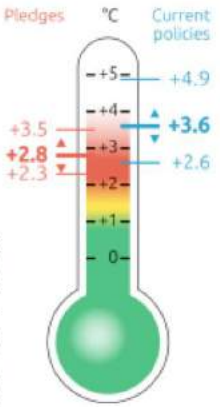
"Holding the increase in the global average temperature to **well below 2°C** above pre-industrial levels and **pursuing efforts to limit the temperature increase to 1.5°C** above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change" (Article 2.1.a)

"In order to achieve the long-term temperature goal set out in Article 2, Parties aim to **reach global peaking of greenhouse gas emissions as soon as possible**, recognizing that peaking will take longer for developing country Parties, and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a **balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century**, on the basis of equity, and in the context of sustainable development and efforts to eradicate poverty" (Article 4.1)



Home | About | (I)NDCs | Countries | Global | Data & Trends | Methodology | Publications | What's new?

CLIMATE ACTION TRACKER



Thermometer shows the global-mean temperature increase above pre-industrial by 2100, with an uncertainty range originating from carbon-cycle and climate modelling

188

The "Climate Action Tracker" is an independent science-based assessment, which tracks the emission commitments and actions of countries. The website provides an up-to-date assessment of individual national pledges, targets and INDCs and currently implemented policy to reduce their greenhouse gas emissions.

Major challenges ahead for Paris Agreement to meet its 1.5deg warming limit

10th November 2016

Full briefing here. Marrakech—10 November 2016 – The rapid entry into force of the Paris Agreement has created the legal… Read more...

Zero emission vehicles need to take over car market to reach 1.5°C limit: analysis

15th September 2016

Constructing the future: creating a Paris Agreement-proof building sector

2nd November 2016

The building sector accounts for around 20% of climate-changing emissions, and its energy demand is likely to double by mid-century… Read more...

Assessing the G20 transition to a low-carbon economy

2nd September 2016

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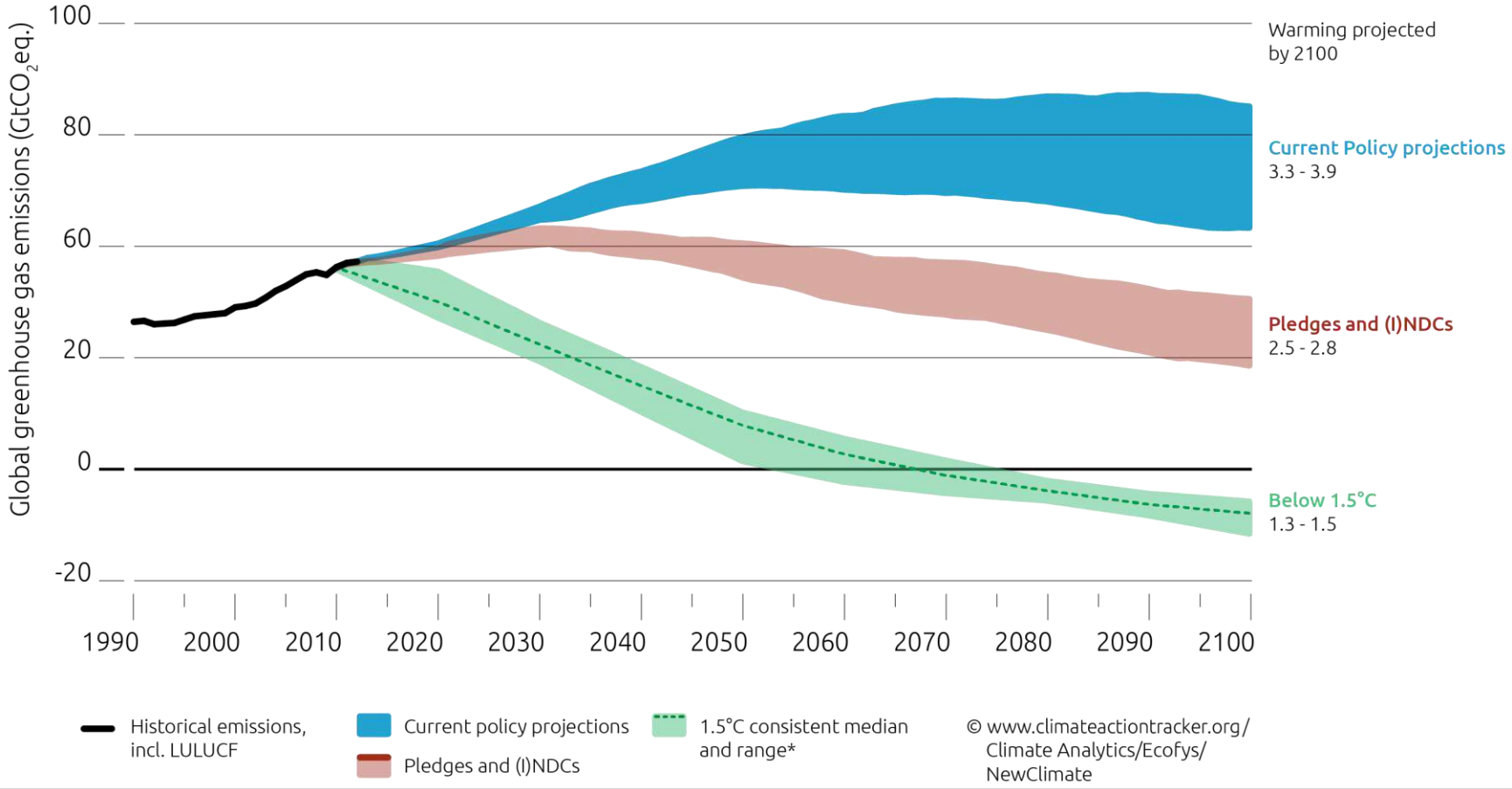
ECOFYS sustainable energy for everyone

NEW CLIMATE INSTITUTE

Where are we and where do we need to go?



* Greater than or equal to 50% chance of staying below 1.5°C in 2100. Median and 10th to 90th percentile range. Pathway range excludes delayed action scenarios and any that deviate more than 5% from historic emissions in 2010.

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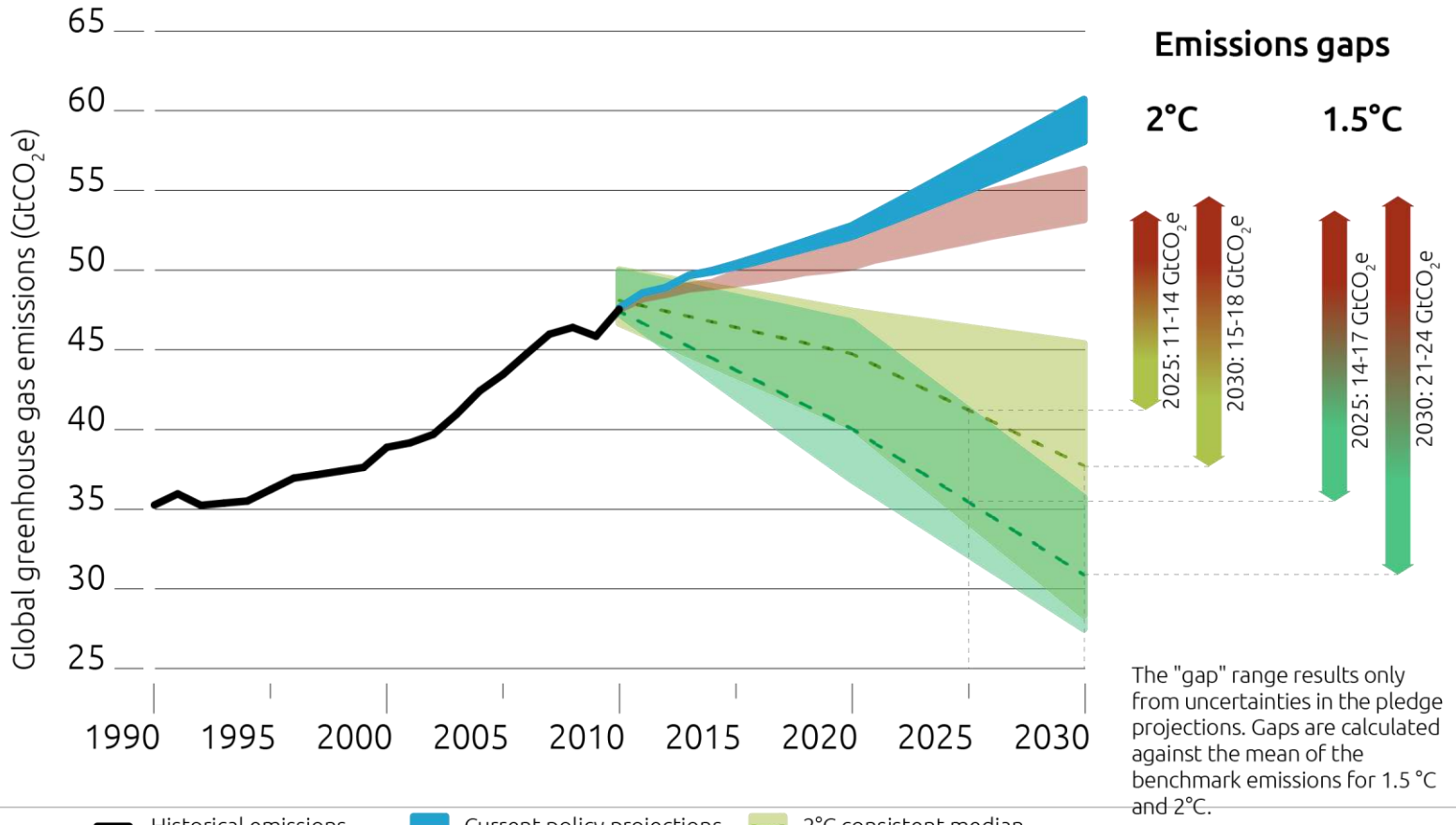
The current level of NDC ambition is not compatible with either 1.5°C or 2°C pathways…



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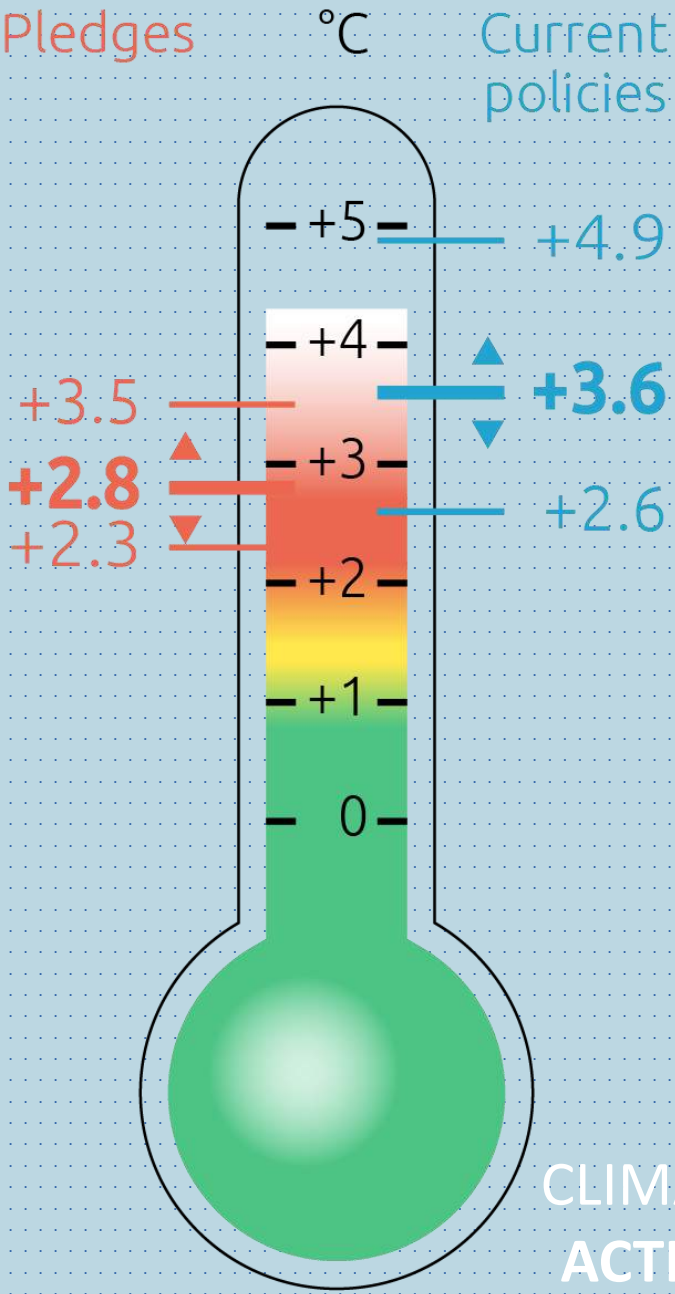
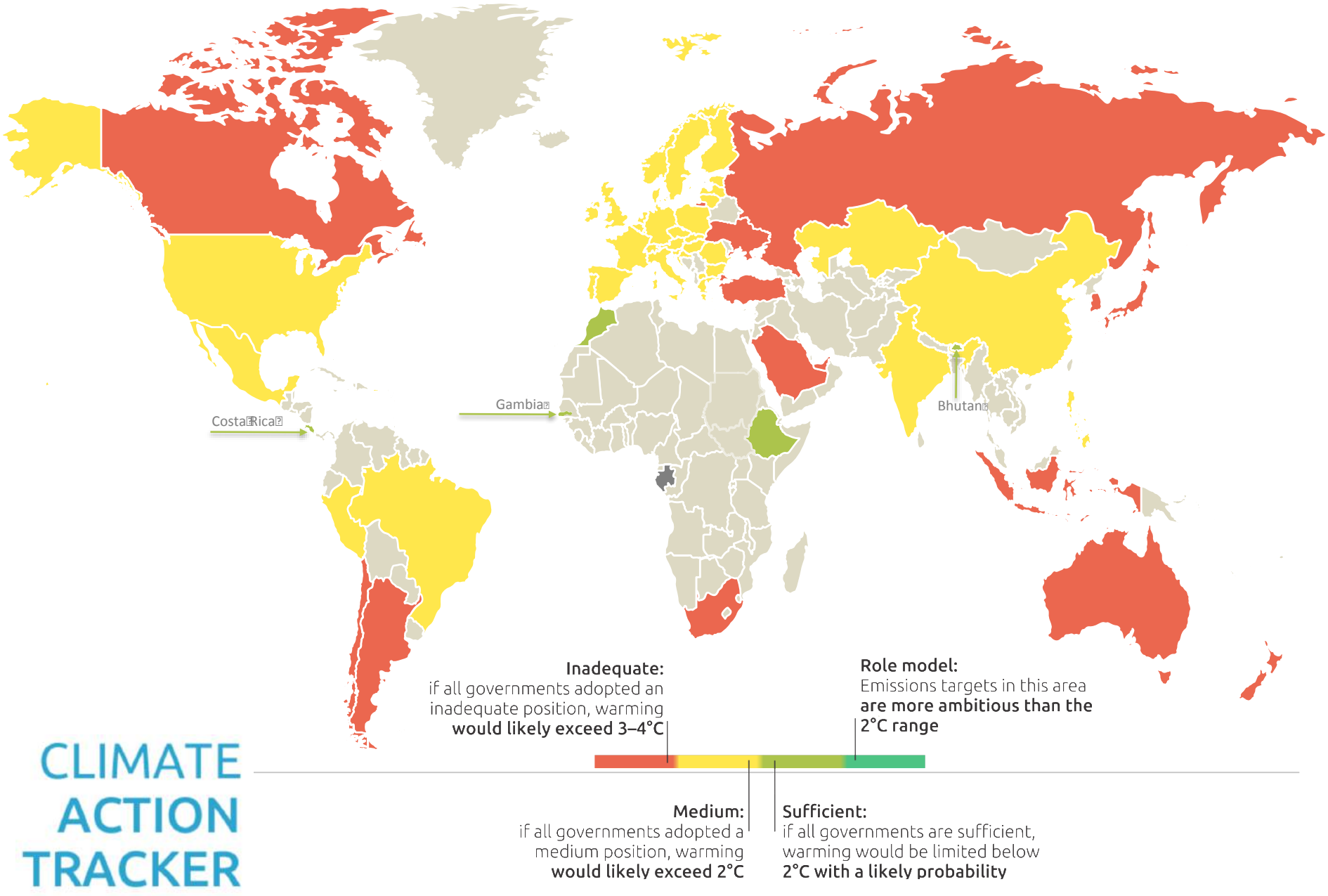
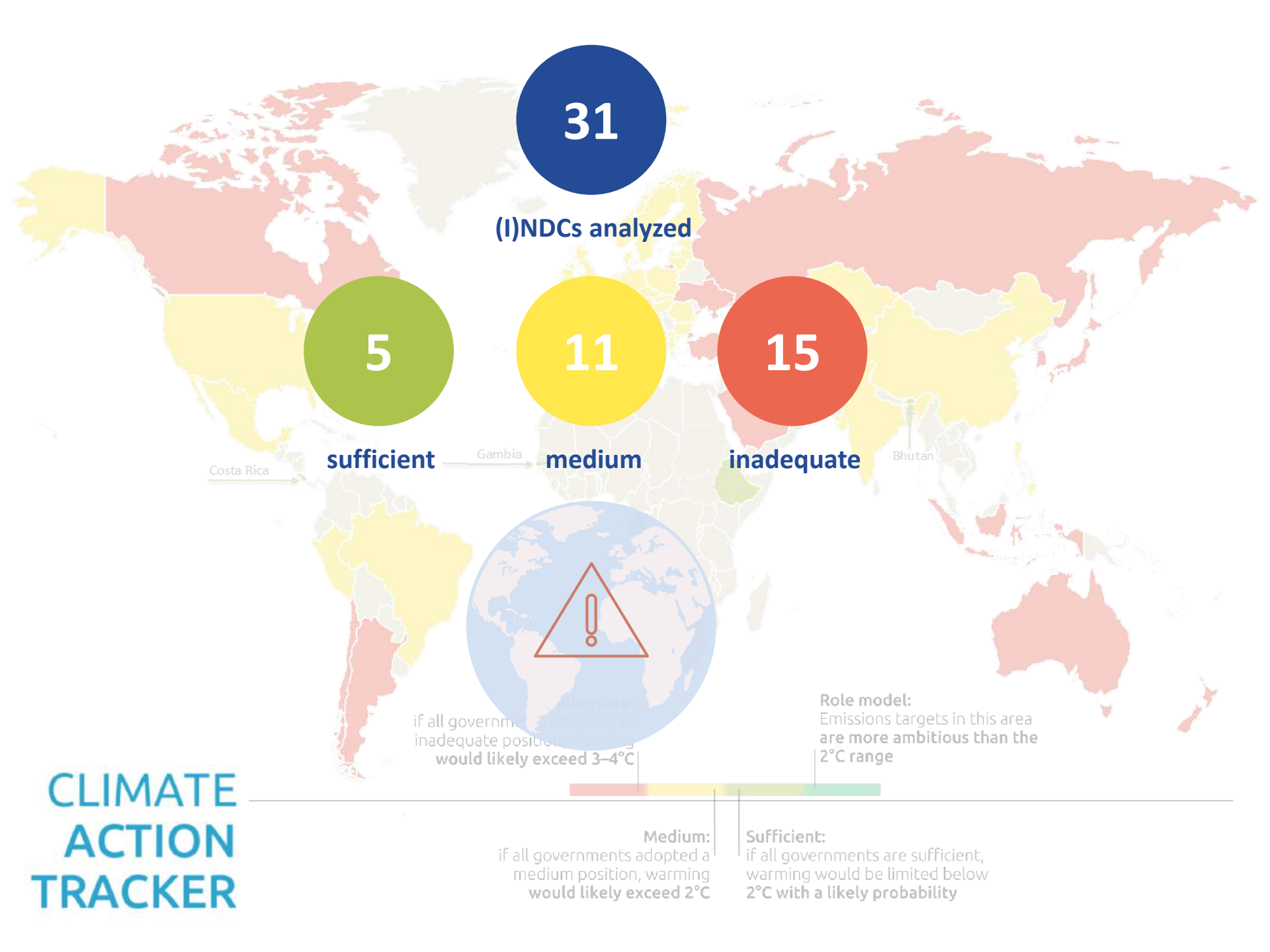
- **Paris Agreement in force, but NDCs and policies have not yet moved**
  - Projected to lead to a global warming of around 2.8ºC
  - About 0.1ºC higher than estimated in Paris due to changes in emissions history
- **Current policies still result in a 3.6ºC by 2100.**
- **Good that NDCs result in an improvement from current policies…**
- **BUT …vast majority of NDCs not in line with Paris Agreement long term temperature goal**



CLIMATE **ACTION TRACKER**



CLIMATE ACTION TRACKER


31
(I)NDCs analyzed
5
sufficient
11
medium
15
inadequate
Costa Rica
Gambia
Bhutan
would likely exceed 3–4°C
Role model:
Emissions targets in this area
are more ambitious than the
2°C range
Medium:
if all governments adopted a
medium position, warming
would likely exceed 2°C
Sufficient:
if all governments are sufficient,
warming would be limited below
2°C with a likely probability
CLIMATE
ACTION
TRACKER

Vast majority of NDCs not in line with 1.5°C limit yet

2030 target a **slight slowdown in rate of climate action compared to last 25 years. Acceleration is needed now** to reach zero by 2050

With currently implemented measures, Brazil is set to meet its 2025 target, but would **need to make more effort to reach the target emissions levels for 2030**.

Under its current policies, **Canada will miss both its 2020 pledge and its 2030 NDC targets by a wide margin**. In October 2016, the new Canadian Government announced a national mandatory carbon pricing plan that, if enacted, would represent a major step towards policies that could change this adverse outlook.

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Vast majority of NDCs not in line with 1.5°C limit yet

The United States needs to fully implement the Clean Power Plan and the Climate Action Plan to meet its 2025 NDC target 26–28% below 2005 levels.

China on track to peak its carbon dioxide emissions between 2025 and 2030, coal use is reducing. **More action is needed on other GHG** to ensure that total GHG emissions go down after 2030.

The rapid growth in renewable energy in India gives an indication of the **transformation that is beginning in India's** energy supply sector, though NDC target not in line with 1.5°C limit.

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What about turbulence from the USA? Can we achieve 1.5°C?

Yes we can!

- Strong tailwinds for climate action in many parts of the world:
  - Rapid growth of renewable technologies worldwide
  - Rapid acceleration of markets for electric vehicles and plummeting battery storage costs
  - Fundamental change the geopolitical forces working on climate policy

- **Provided political leaders globally maintain their commitment to action**, these tailwinds mean that riding through the turbulence that may come is possible.

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So how are we tracking towards the 1.5°C limit in the Paris Agreement?

The NDCs for the period up until 2025, 2030 must be substantially stronger than those currently on the table for holding warming well below 2°C and pursuing 1.5°C.

NDCs

All Parties' NDCs must continually increase in ambition; this was the process agreed in Paris.

Currently <u>not sufficient to meet the temperature goal</u> agreed in Paris of holding warming well below 2°C and pursuing 1.5°C.

(I)NDCs

2018

The place to do! Facilitative Dialogue and IPCC Report

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DIALOGUE – The Energy Transition: What does 1.5°C mean for key energy-intensive sectors?

Moderator: Ms. Libby Ferguson, *States & Regions Director, The Climate Group*

Hon. Lesley Griffiths, *Cabinet Secretary for Environment and Rural Affairs, Wales*

Sir David King, *Special Representative for Climate Change, UK*

Hon. Shannon Phillips, *Minister of Environment and Parks, Alberta*

Dr. Michiel Schaeffer, *Director of Science, Climate Analytics*

The Path to 1.5°C

Dr Michiel Schaeffer

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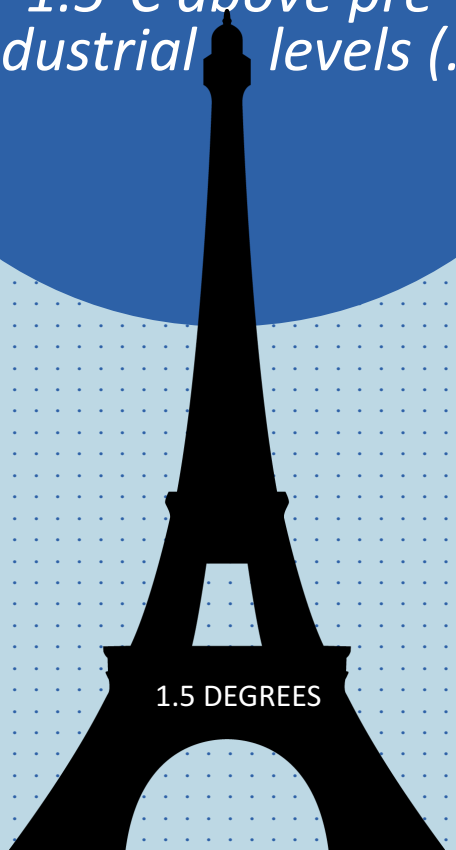
What are the required emissions reductions?

"Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels (..)"

What are the implications for policy makers?

What are the implications for different sectors?

How to get onto a 1.5°C pathway?



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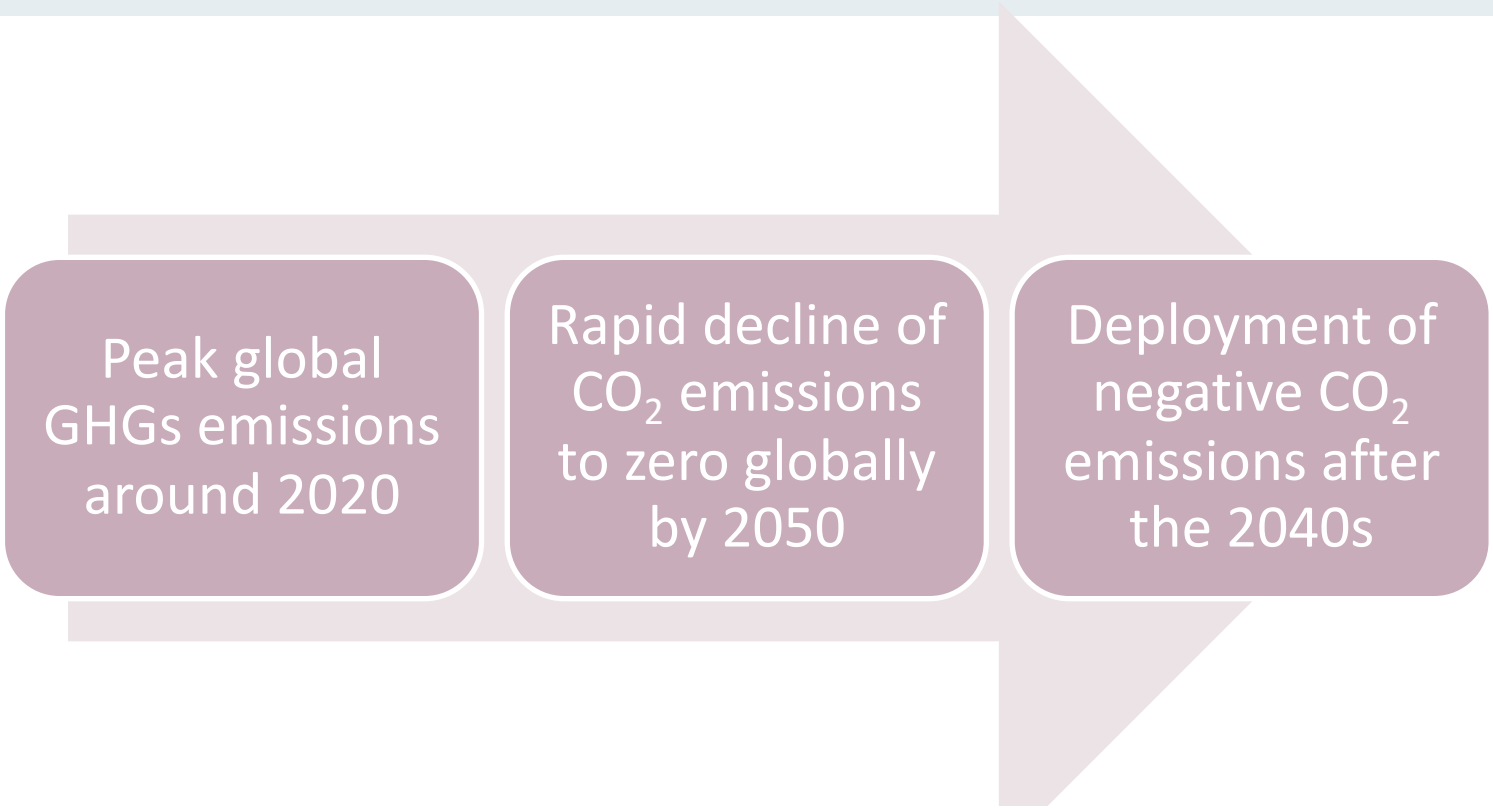
The three stages of the 1.5°C compatible pathway.

1.5°C



Presentation draws from our research into strategic areas for transformation that make or break 1.5°C compared to 2°C

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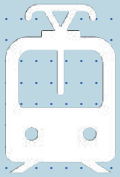
Stop building new coal power plants & reduce emissions from current coal plants by at least 30% by 2025

Sustain the recent 25-30% annual growth rates of wind and solar renewables, until 2025 and reach 100% renewables by 2050

Ensure all new installations in the emission-intensive sectors are low-carbon after 2020 and maximise material efficiency



Last fossil fuel car sold in 2035

Develop and get agreement on a 1.5°C compatible vision

Increase building renovation rates from <1% in 2015 to 5% by 2020

All new buildings fossil-free and near zero energy by 2020

Keep agriculture emissions at or below current levels through 2025 - disseminate regional 'top runner' approach

Reduce emissions from forestry and other land uses to 95% below 2010 by 2030 - stop net deforestation by the 2020s

Reality check for coal-based power generation capacity

1.5°C

WORLD potential CO_2 emissions from existing and planned coal capacity against least-cost pathways.

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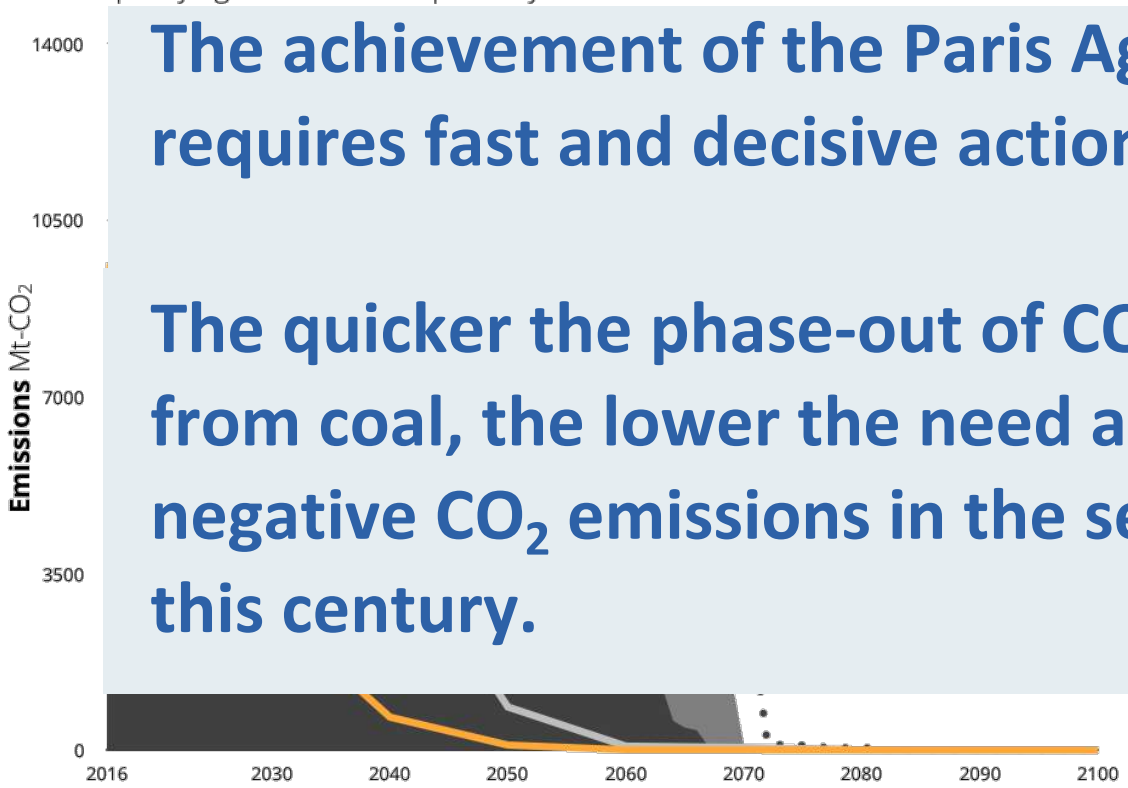
The achievement of the Paris Agreement goal requires fast and decisive action.

The quicker the phase-out of CO_2 emissions from coal, the lower the need and costs of negative CO_2 emissions in the second half of this century.



PARIS AGREEMENT Least Cost Pathway
Hold warming well below 2°C, 1.5°C

CANCUN AGREEMENTS Least Cost Pathway
Hold warming below 2°C

Source: IIASA/Joeri Rogelj, GCPT, own calculations

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The main cross-cutting areas of action needed

- Internalisation of the external costs and benefits of different products and processes
- Promotion of sustainable behaviour
- Policy learning and policy transfer
- Promoting innovation in low-carbon technologies

Three areas for transformative action

1.5°C

Coal phase-out

Elimination of 10 $GtCO_2$ of emissions annually would decrease pressure on the carbon budget

Relatively low cost further decreased by co-benefits and decreasing price of alternatives

Low-carbon modes of transport

Oil is second largest emissions source after coal

Transport sector notoriously hard to breaking upward trends

There are solutions - modal changes and E-mobility may offer the largest contributions, but require parallel decarbonisation of the power sector

Energy efficiency of the building stock

Availabel technology but not yet widely used e.g. net-zero emissions buildings

Long legacy of stock make transformation urgent

Energy demand is set to increase two to threee fold by 2050 without intervention

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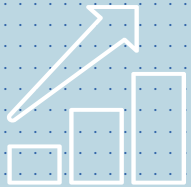
Two areas to keep on the radar

1.5°C

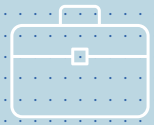
- **Land use, land-use change and forestry (LULUCF)**
  - Reductions of emissions need to happen simultaneously with decarbonisation of energy & industry sectors, not in place of action in these sectors
  - Limited potential that needs to be utilized carefully
- **Challenging sectors - steel, cement, aviation, agriculture**
  - Difficult to reduce GHGs emissions due to technological limits
  - Improved technologies and behavioral changes are necessary
  - Long-term impact possible if action (e.g. investment in R&D) is taken in the short term)

Benefits and Opportunities of the 1.5°C temperature limit



The economic benefits of keeping warming to a minimum are tremendous!

Climate Action will benefit public health, agriculture and save lives



Deploying and maintaining renewables creates jobs and improves employment circumstances

Low-emission development improves economic stability and energy independence for most economies

Renewables grew to 90% of new electricity generation in 2015, showing that declining renewable costs, and cooperation on technological transfer across different nations could significantly lower the cost of mitigation

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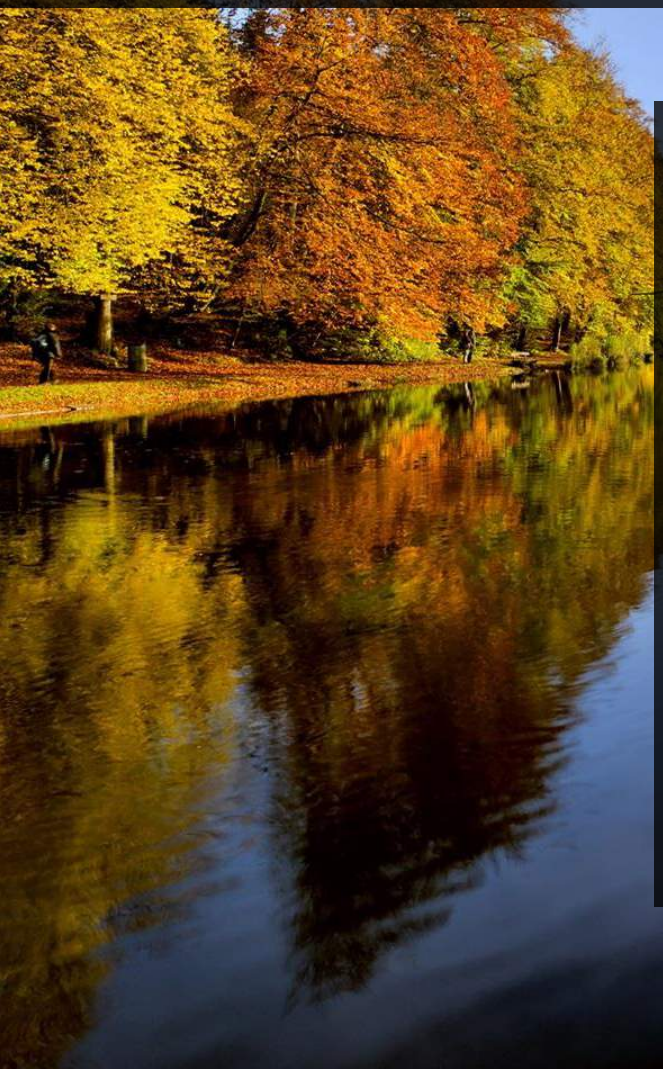

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Thank you

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