COOL COALITION
WEBINAR SERIES

KIGALI
COOLING EFFICIENCY PROGRAM

Cool Coalition

CARBON TRUST

Lily Riahi,
Coordinator, Cool Coalition

Dan Hamza-Goodacre,
Non-Executive Director, Kigali Cooling Efficiency Program

Niclas Svenningsen,
Manager, Global Climate Action, UNFCCC

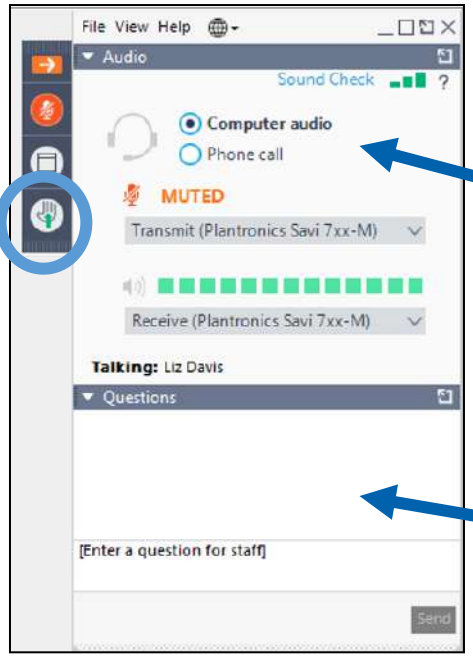
David Aitken,
Associate Director, Carbon Trust

Mark Radka,
Chief, Energy & Climate Branch, UN Environment Programme

Welcome to the webinar

Please find below some important instructions for your active engagement

1. All participants will be muted by the administrator. Please use the “raise hand” icon to notify us if you would like to speak during the Q&A. We will then enable your microphone.



2. If joining with a computer/mobile select “Computer Audio” If joining by dial-up please choose “Phone call”

3. Questions and comments for the Q&A should be written in this box

Connected via telephone

5. *4 – Hear a menu of keypad commands available to you.
*6 – Mute or unmute your audio.

Pathway to Zero Greenhouse Gas Emissions for Cooling

WELCOME REMARKS *(2.00 pm - 2.05 pm)*
Lily Riahi, Coordinator, Cool Coalition

OVERVIEW OF ZERO PATHWAY PROCESS *(2.05 pm - 2.20 pm)*
Dan Hamza-Goodacre, Non-Executive Director, K-CEP, COP26 Champions Team

COOLING AND THE MARRAKECH PARTNERSHIP FOR GLOBAL CLIMATE ACTION *(2.20 pm - 2.35 pm)*
Niclas Svenningsen, Manager, Global Climate Action, UNFCCC

PATHWAY RESEARCH AND WAY FORWARD *(2.35 pm - 3.00 pm)*
David Aitken, Associate Director, Carbon Trust

QUESTIONS AND ANSWERS WITH THE AUDIENCE *(3.00 pm - 3.25 pm)*

CLOSING REMARKS *(3.25 pm - 3.30 pm)*
Mark Radka, Chief, Energy & Climate Branch, UNEP

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WELCOME REMARKS

5 minutes

Lily Riahi,
Coordinator, Cool Coalition

OVERVIEW OF ZERO PATHWAY PROCESS

15 minutes

Dan Hamza-Goodacre,
Non-Executive Director, Kigali Cooling Efficiency Program

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- A global campaign led by the High-Level Climate Champions for the COP
- Securing non-state actor net-zero commitments
- To build momentum ahead of COP26
- Already collectively covers ~50% global GDP

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RACE TO ZERO

- How to join: non-state actors (such as regions, cities, businesses and investors) are invited to join an initiative or network, which is an official Race to Zero partner.
- By joining one of the partners they will be directly included in Race to Zero
- Partners include: SBTI, BCorps, C40, Under2Coalition..
- New partners are welcome!
- Pledge, Plan, Proceed, Publish
- https://unfccc.int/sites/default/files/resource/Minimum-criteria-for-participation-in-RTZ.pdf

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- Q. What does a Race to Zero (net zero) commitment look like for cooling?
- A. Develop a pathway
- Part of a suite of pathways for the COP26 High Level Champions work in collaboration with the UNFCCC Marrakesh Partnership (MP)
- Follows MP approach / method
- Cool Coalition to set up stakeholder working group
- Also assessing compatible cooling products (EIA) and quantifying cooling's contribution to energy & transport (EIU)
- Aim to launch in September
- Ambition campaign through COP26 (and beyond!)

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COOLING AND THE MARRAKECH PARTNERSHIP FOR GLOBAL CLIMATE ACTION

15 minutes

Niclas Svenningsen,
Manager, Global Climate Action,
UNFCCC

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Cooling and Global Climate Action

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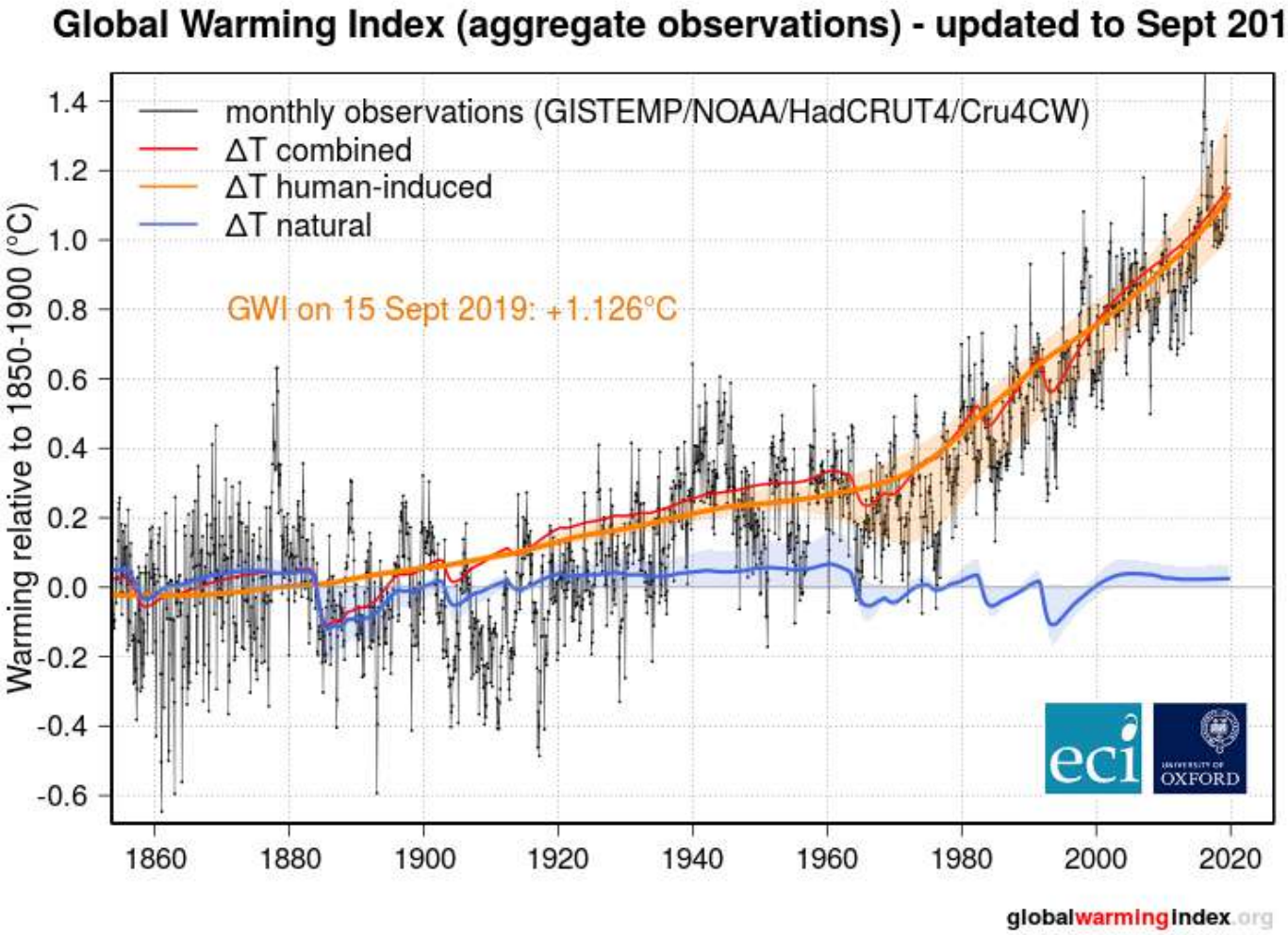
What you know



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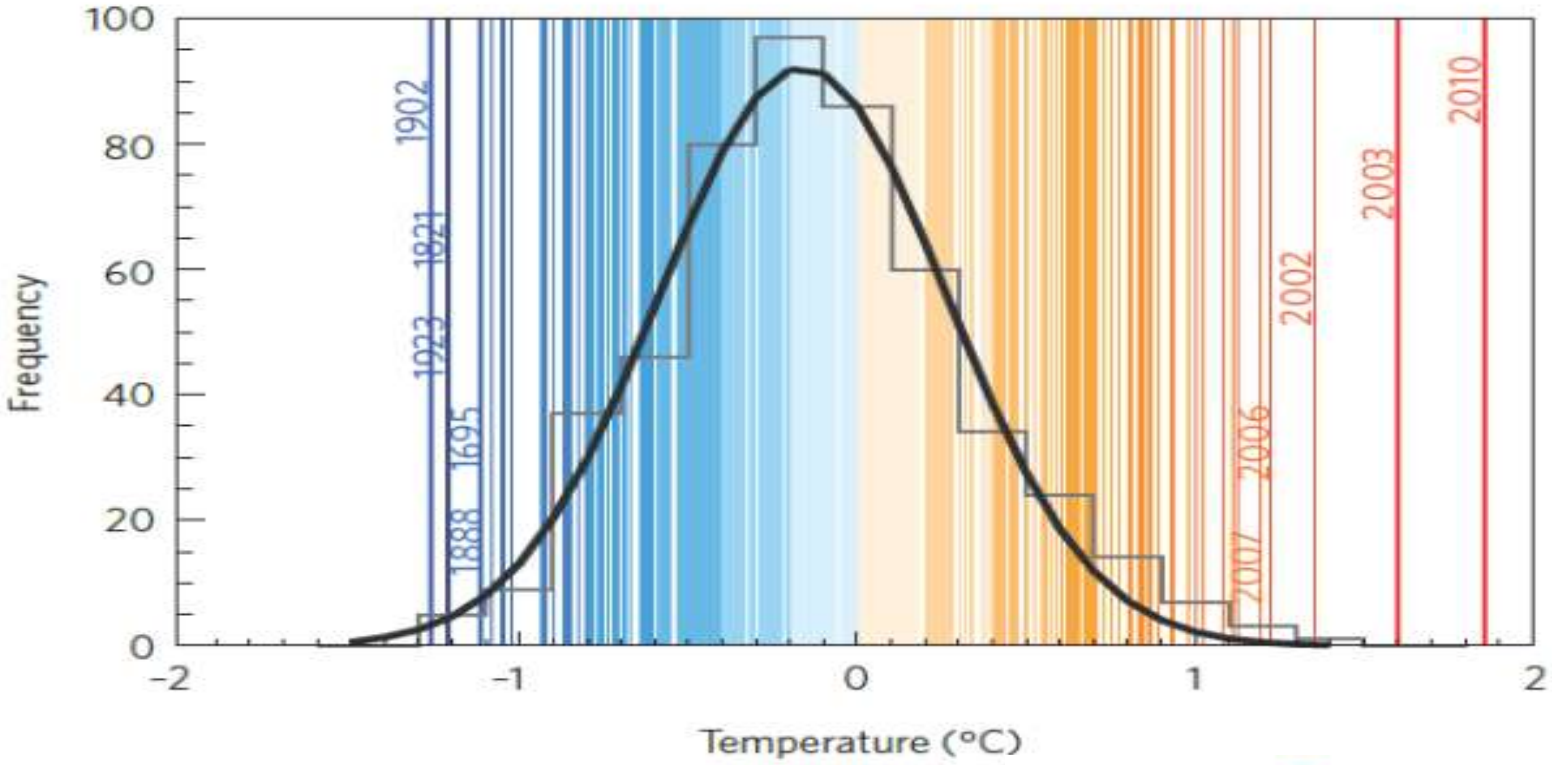
Translating to ”the weather”

European summer temperature averages from 1500 to 2010

Excl. record heat summers 2015, 2018, 2019



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UNFCCC

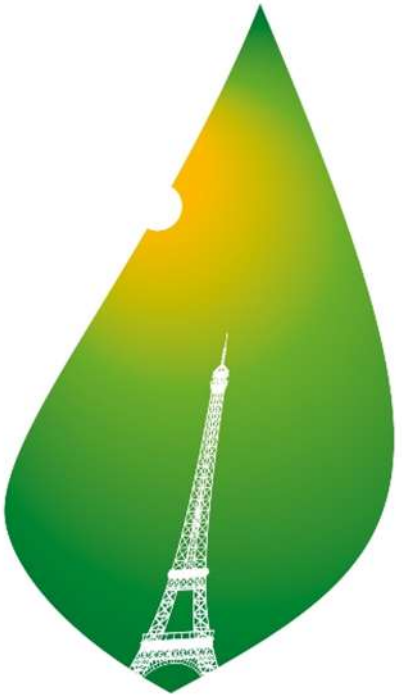
UN organization supporting the climate negotiations

- Annual Conference of the Parties (COP)
- ~30.000 participants, 1000+ meetings, 250+ agenda issues
- Purpose: Develop and implement an international agreement on climate change.

The Paris Agreement (2015)

The Global Blueprint

- Applies to ALL parties to UNFCCC
- Bottom-up: Action owned by governments.
- Nationally Determined Contributions (NDC)
- Requires “all hands-on deck” - Yours too!
- How is it going?



COP21 · CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE

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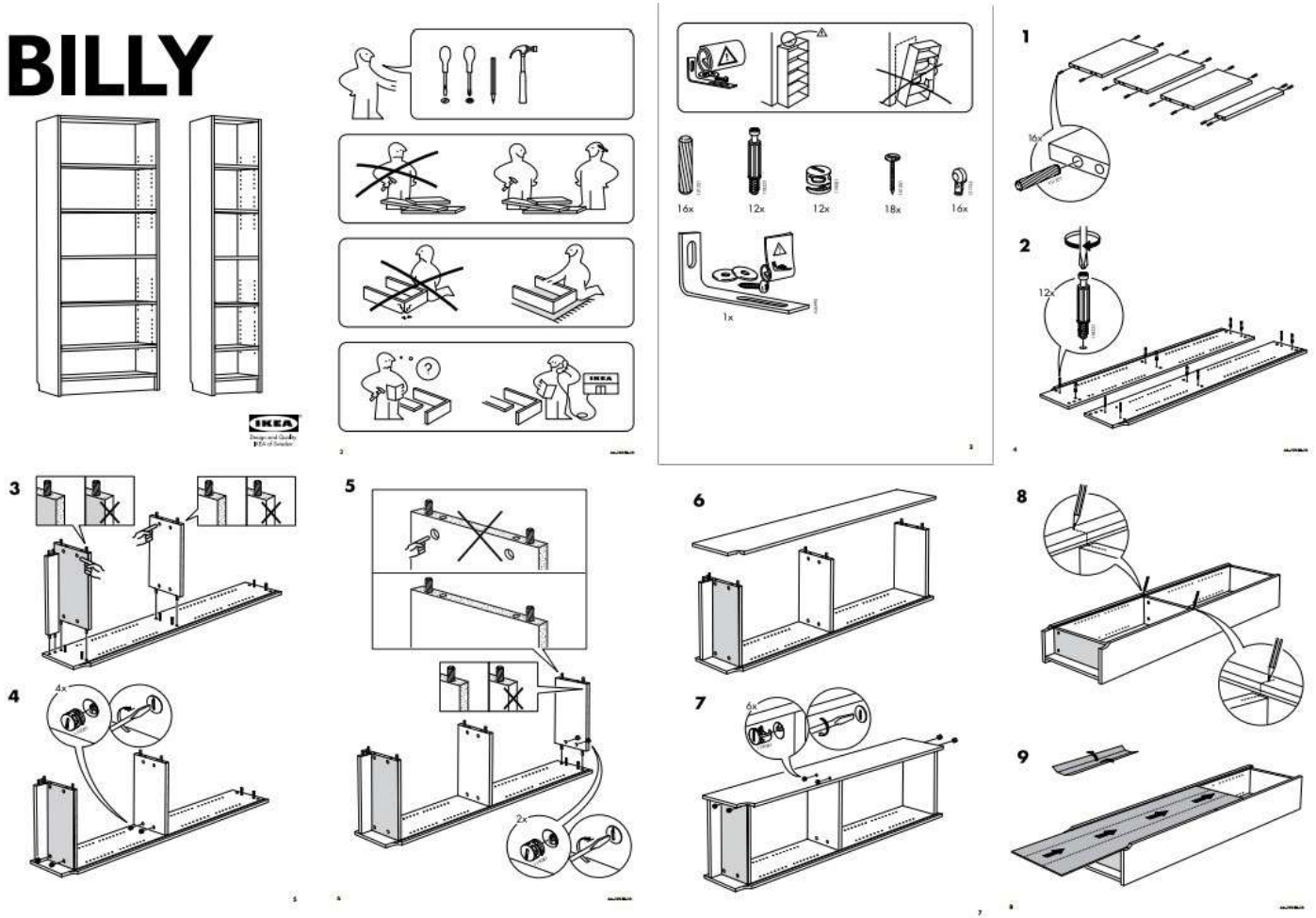
After Paris



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Global Climate Action

The Paris Agreement (and COP25) recognized the role of "Non Party Stakeholders" (NPS)

- Purpose: To catalyze and facilitate climate action among NPS in support of the work by parties to implement the Paris Agreement.
- Two high-level champions are guiding the engagement with the climate process.
- Wide range of UNFCCC engagement, incl. direct outreach, sectoral work (fashion, sports, food, travel), GCA awards, tracking & reporting…

The Marrakech Partnership for Global Climate Action (MPGCA) coordinates a broad collation of NPS across different thematic areas and connect with political process.

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Global Climate Action

Nigel Topping (UK) & Gonzalo Munez (Chile)

- Thematic areas: Energy, Transport, Industry, Human settlements, Land use, Water, Oceans (and more)
- Key tool is the Thematic Climate Action Pathways

- *The Pathways aim to inspire and help Parties and non-Party stakeholders identify actions relevant to their context, and initiatives and coalitions that could help them to achieve the goals outlined in their nationally determined contributions and long-term low greenhouse gas emission development strategies.*
- *…outlines the longer-term vision for a 1.5-degree climate-resilient world from the perspective of non-Party stakeholders and sets out actions needed to achieve that future.*

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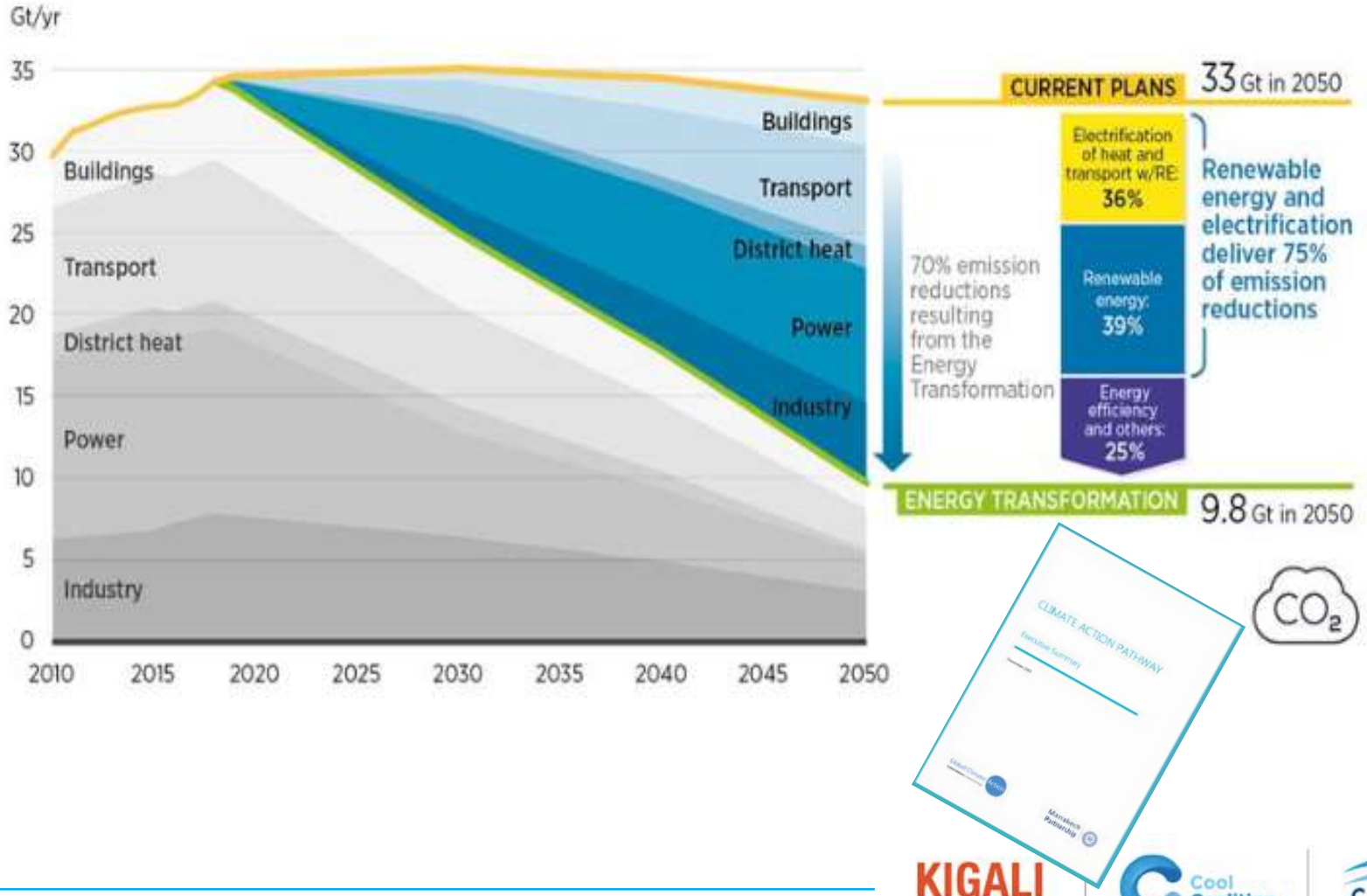
Climate Action Pathways

Figure 1.1: Annual energy-related CO_2 emissions and reductions, 2010–2050



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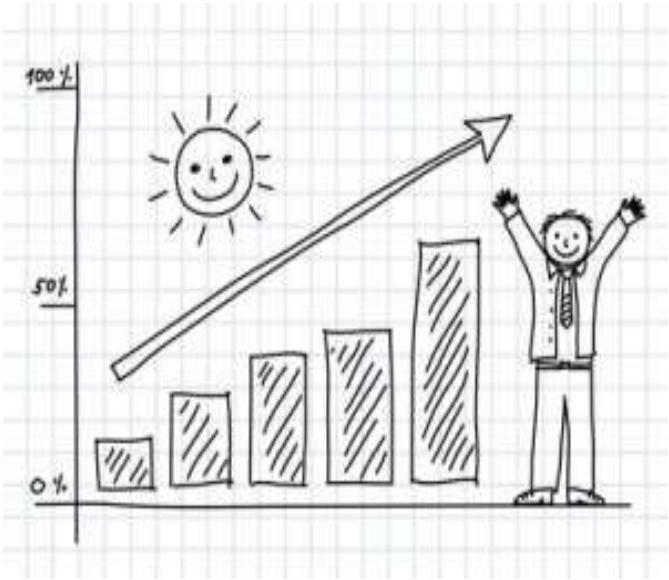
Climate Action Pathways

In 2020-2021 the Climate Action Pathways further evolved by:

- ✓ Enhancing the quality and consistency
- ✓ Increasing the usability and user-focus by providing actionable recommendations
- ✓ Taking a deeper-dive on sectors and synergies with other thematic areas
- ✓ Ensuring a balance with mitigation and adaptation/resilience
- ✓ Continuing to be guided by science
- ✓ Further elaborate pathways for specific sub-sectors



Cooling!

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Global Climate Action in UNFCCC

- 2020 is the year for parties to submit new/updated NDCs (and every 5 years)
- Covid-19 impact prompts rethinking, especially on Green Resilient Recovery.
- Pathways provide significant “shovel ready” action which can be reflected in recovery packages.
- Covid-19 stimuli already pledges exceeds 2008 financial crisis funding by more that x10.

Global Climate Action

United Nations Climate Change

- National Governments
  - ➢ Translating the Paris Agreement to law, establishing policies, enabling cooperation, Inform and educate
- Private sector
  - ➢ Lead action in their areas, minimize risks, enable a climate smart society by providing climate smart products and services, Communicate and promote
- Civil society
  - ➢ Engage, inform, research, facilitate, encourage action
- Individuals
  - ➢ Take decisions, use climate smart products & services

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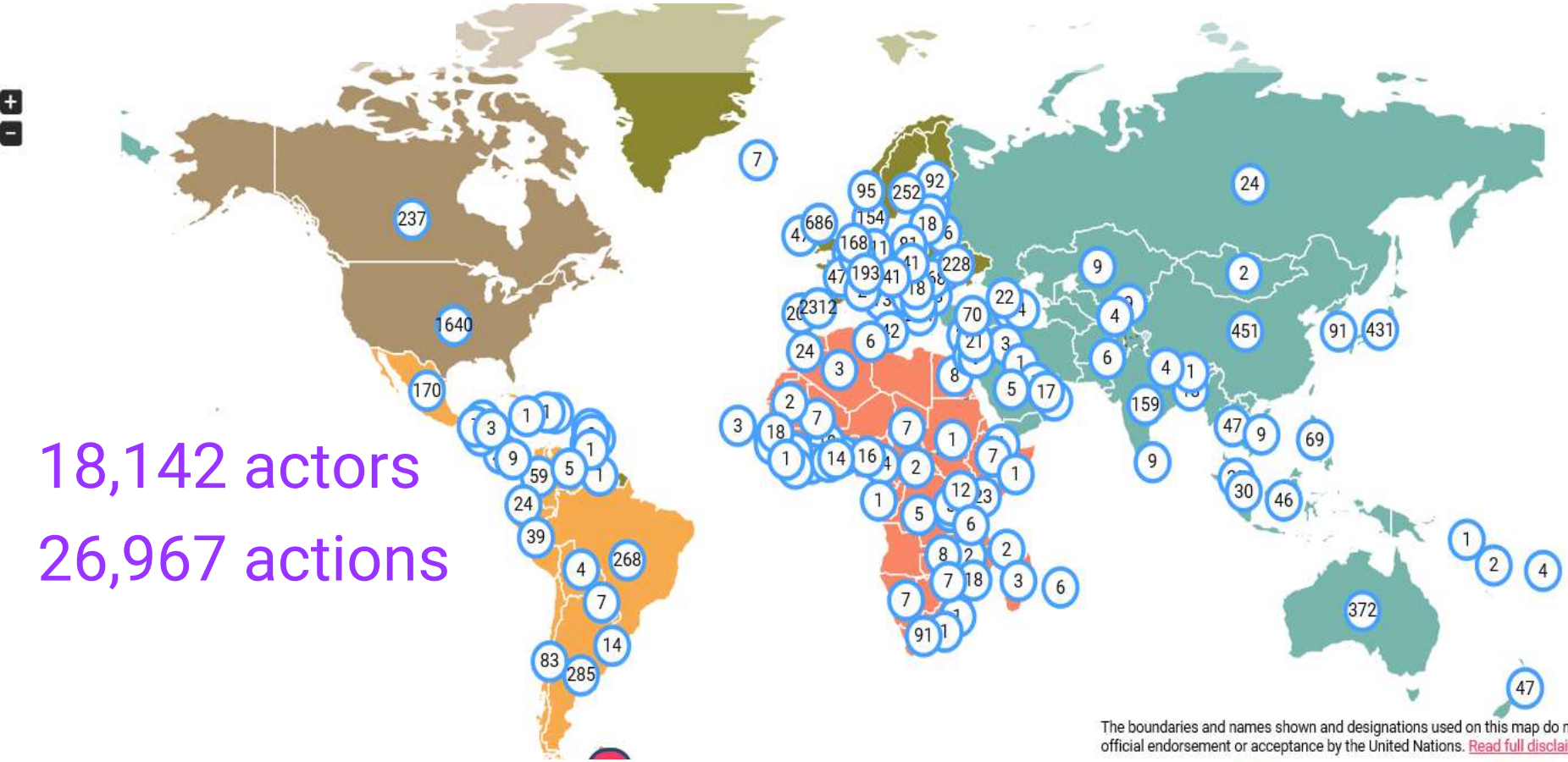
Global Climate Action Portal

Climate commitment by non-government organizations

(UNFCCC, GCA Portal: www.climateaction.unfccc.int)



18,142 actors

26,967 actions

The boundaries and names shown and designations used on this map do not imply official endorsement or acceptance by the United Nations. Read full disclaimer text

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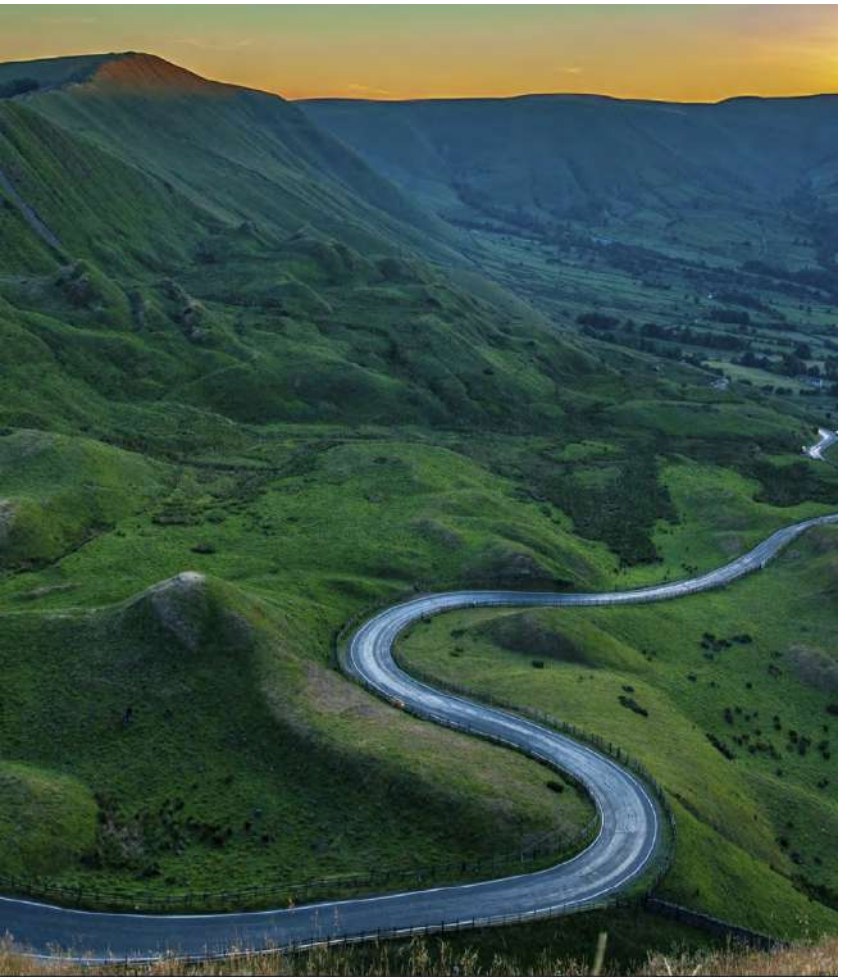
The cooling climate pathway



- ✓ Needs to allow translation upwards and downwards
- ✓ Relevant to all actors
- ✓ Important part of wider UN climate action framework
- ✓ Can/should help to design future NDCs
- ✓ Unique context: Covid-19 situation unprecedented
- ✓ Win-Win-Win

We need to act much faster, together

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What is next?

Enjoy the ride

United Nations Climate Change
Global Climate Action

PATHWAY RESEARCH AND WAY FORWARD

25 minutes

David Aitken,
Associate Director,
Carbon Trust

Pathway to Zero Greenhouse Gas Emissions from Cooling

Project overview for the Cool Coalition Webinar

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Overview of presentation structure

- Project background
- Building blocks for zero emissions cooling pathway
- Discussion
- Next steps

1

Project background

Background to the project

- Cooling is a key enabler of social and economic development and is one of the most rapidly growing sources of greenhouse gas (GHG) emissions
- To reach zero GHG emissions*, significant transformation of how cooling is generated, stored and used is required across energy and food systems, industry, transport and human settlements
- Cooling is also central to achieving the Sustainable Development Goals (SDGs) and enhancing resilience given the health, safety and productivity benefits that access to cooling provides
- Existing work highlights the benefits of efficient, climate-friendly cooling – this project builds on this work to show how the sector as a whole can get to zero GHG emissions by 2050, what the key gaps are, and who needs to do what
- This project supports the Marrakech Partnership of the UNFCCC (particularly feeding into relevant Climate Action Pathways refresh), COP26 High-Level Champions and UN Cool Coalition

* We refer throughout these slides to zero GHG emissions to provide clear and straightforward communication. We assume that an element of netting off through the delivery of negative GHG emissions in other sectors may be needed to reach zero GHG emissions for cooling. This will be reviewed and analysed as part of this project.

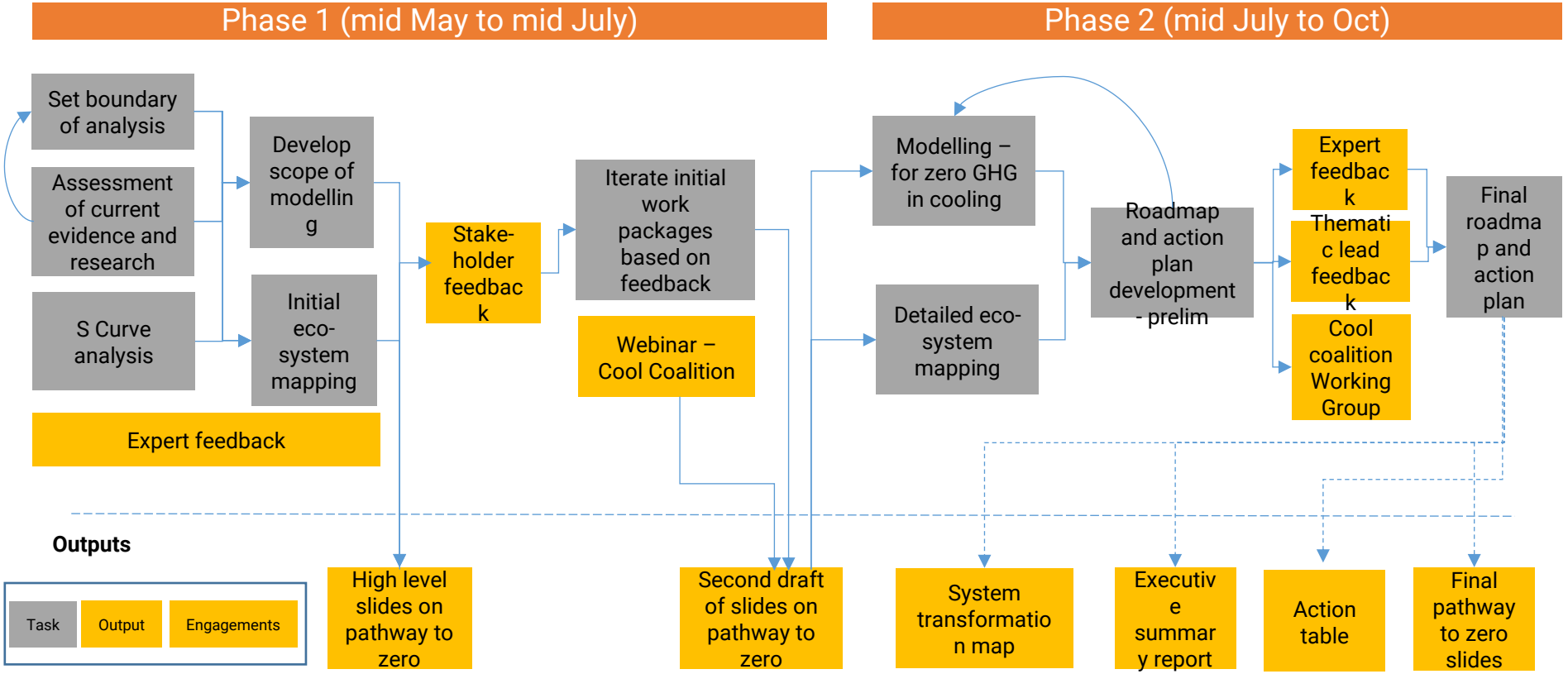
Project objectives

1. Outline how the cooling sector can get to zero GHG emissions (from electricity and refrigerant use) and identify key assumptions or uncertainties where further work is needed

2. Summarise key actions by stakeholder type and when these need to be delivered to enable a zero emissions pathway for cooling

3. Help organisations leading the development and updating of existing Climate Action Pathways (such as energy, transport and human settlements) to see how progress on cooling supports achieving these pathways

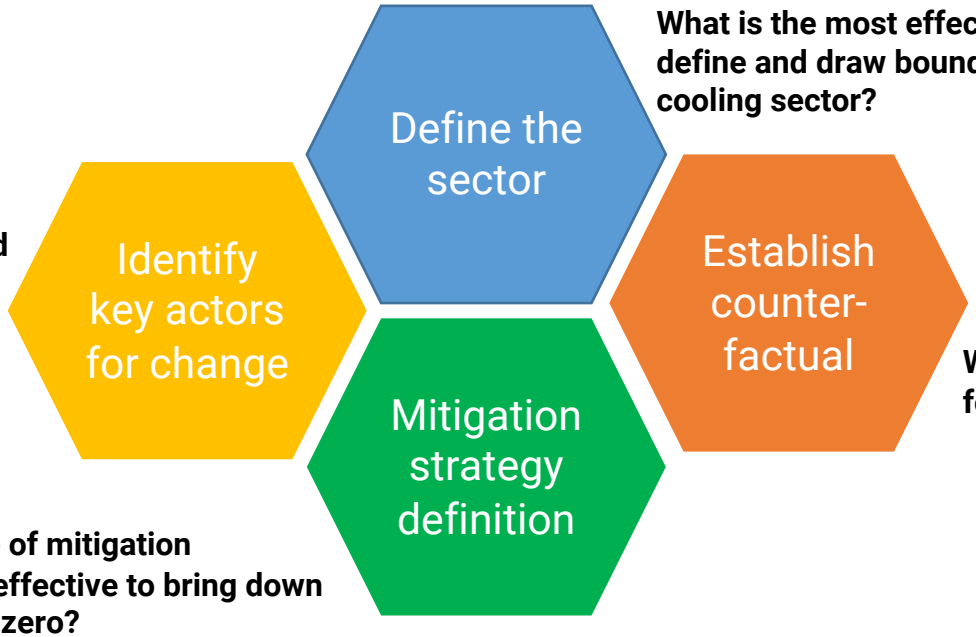
Overview of approach and timescales



2

Building blocks for developing a zero emissions pathway for the cooling sector

There are four key building blocks to outline a robust pathway to zero emissions for the cooling sector



What is the most effective way to define and draw boundaries for the cooling sector?

What drives the future outlook for cooling use globally?

What mixture of mitigation measures is effective to bring down emissions to zero?

Who needs to deliver this change, what do they need to do, and by when?

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We currently plan to use the cooling sector breakdown used in the Economist's 2019 report

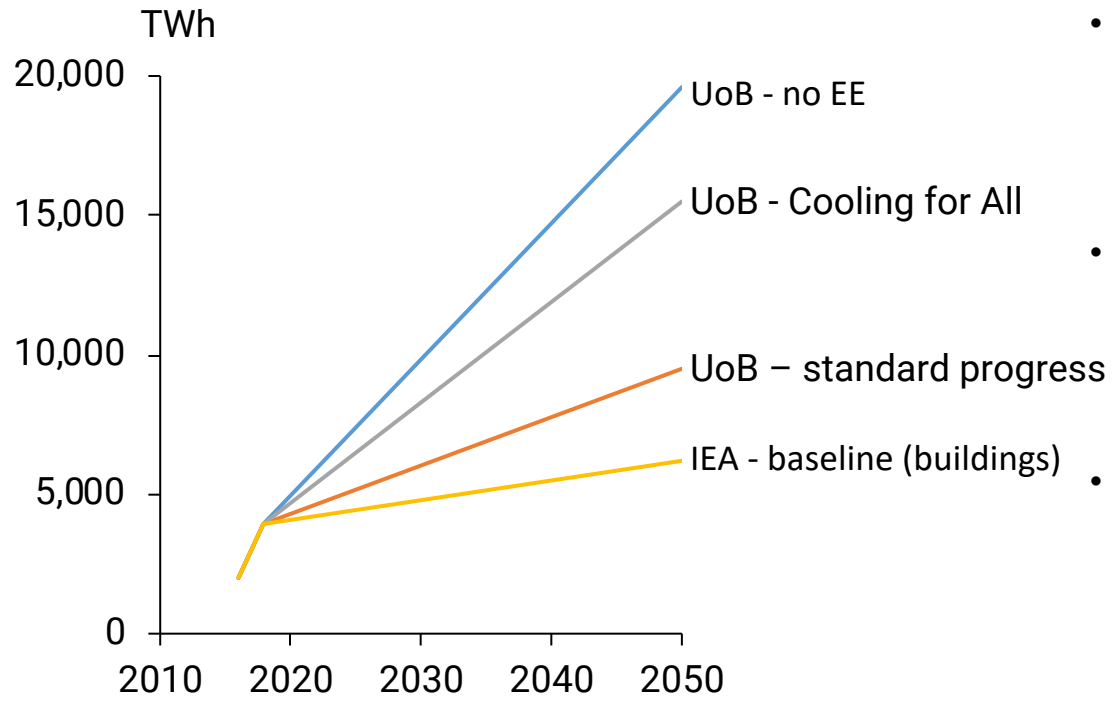
Defining the sector

Area	Type	Overview
Air conditioning	Domestic	AC in peoples' homes
	Commercial	AC in large commercial spaces, such as supermarkets, hypermarkets, offices and hotels
	Industrial	AC in manufacturing facilities, workshops, warehouses, and laboratories (including for both food and medicines)
	Mobile	AC in cars and buses
Refrigeration	Domestic	Home refrigerators and freezers
	Commercial	Refrigerators and freezers in supermarkets, stores and restaurants
	Industrial	Refrigeration for cold storage and for specific industrial processes, such as the environmental testing of products in manufacturing plants, and the processing of foods (e.g. cheese)
	Transport	Refrigeration to prevent spoilage of products en route to consumers, including fresh foods and pharmaceuticals

Source: Economist Intelligence Unit (2019) The Cooling Imperative: Forecasting the size and source of future cooling demand

Cooling sector growth forecasts vary with different modelling approaches and assumptions on how cooling is delivered

Establishing forecast



- Models differ in terms of forecasting total electricity used (TWh) for cooling globally depending on assumptions and approach
- They also differ in terms of the categories of cooling sectors modelled and how they are delivered (e.g. centralised vs. distributed)
- The types and levels of business-as-usual (BAU) technology improvement and policy assumptions also differ across the different forecasts

Sources: University of Birmingham, IEA

We are using the Cool Coalition cooling hierarchy approach to determine the mitigation options

Mitigation method focus

Measure	*Example actions*
Avoid	Improve building envelope to avoid the need for cooling and/or make them more efficient to cool
Shift	District cooling, renewably powered cold chains
Improve	More efficient vapour compression technology, going beyond vapour compression, low GWP refrigerants
Protect	Access to cooling e.g. community cooling hubs
Enablers	Thermal storage, electrification, renewable integration, EV deployment

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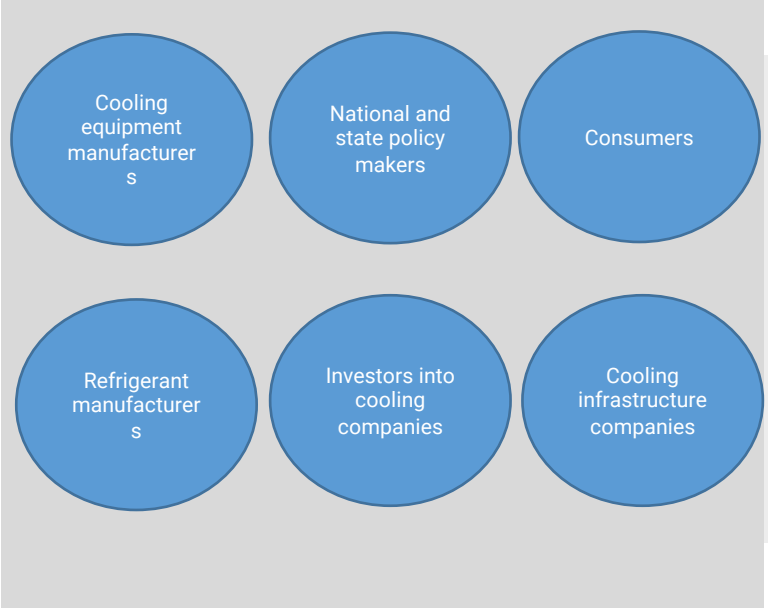
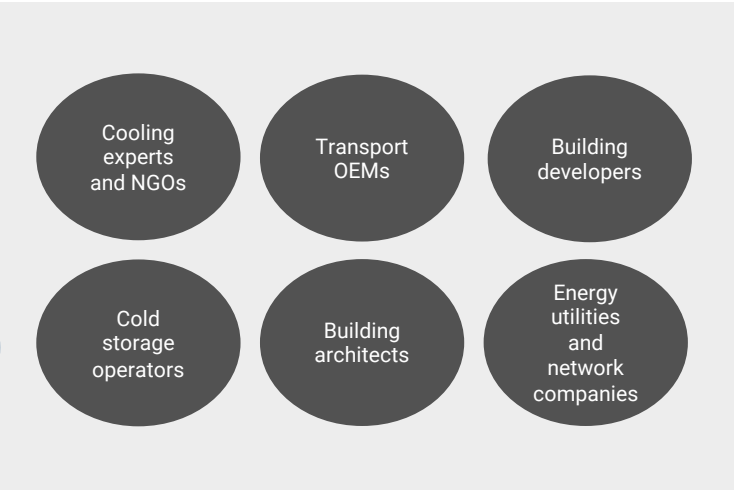
High level stakeholder mapping will determine key actors and actions required to get to zero emissions

Key actors for change



Cooling eco-system



Other key actors

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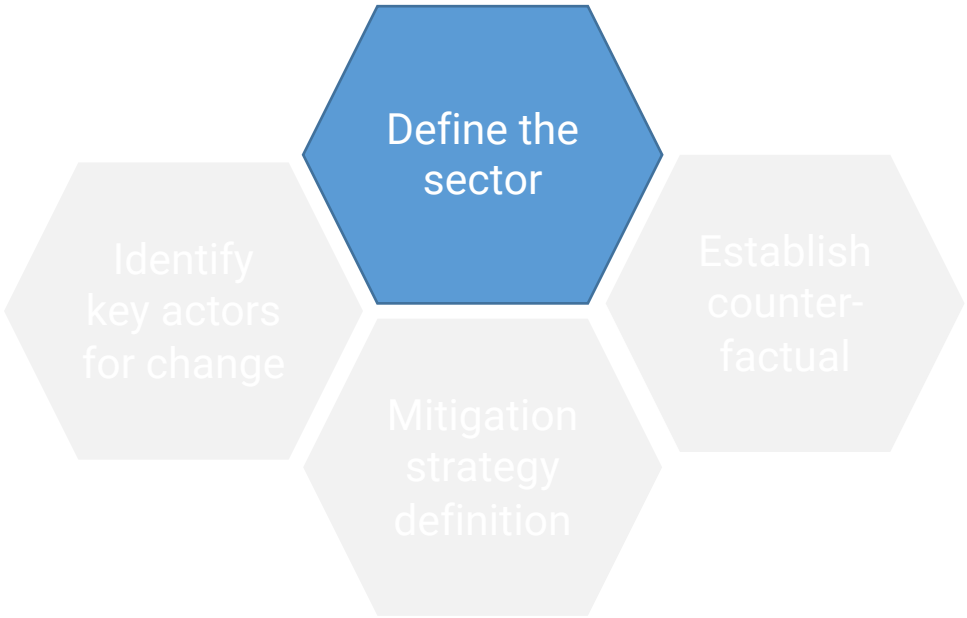
3

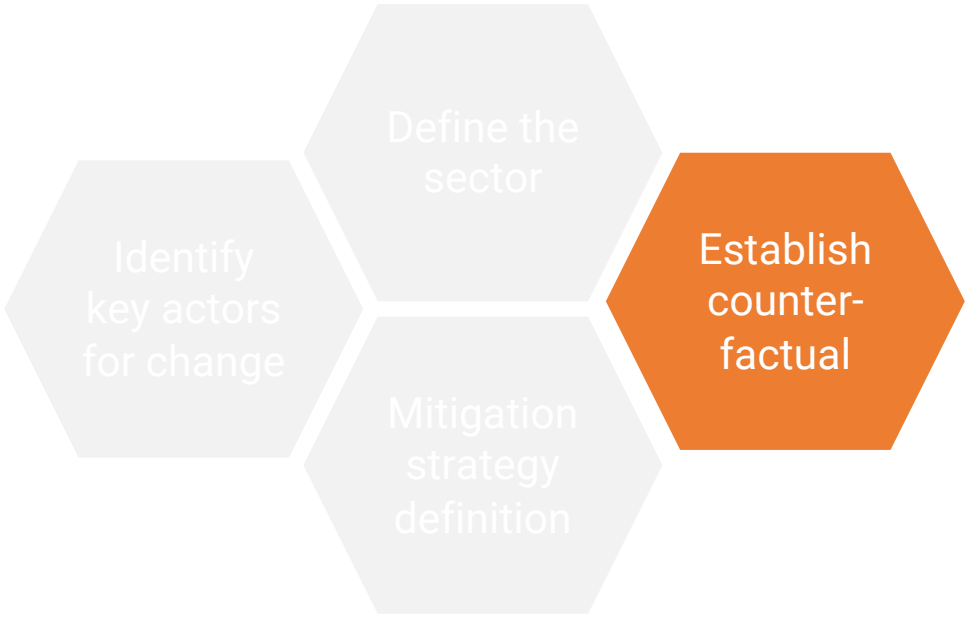
Discussion

Key discussion points – sector definition



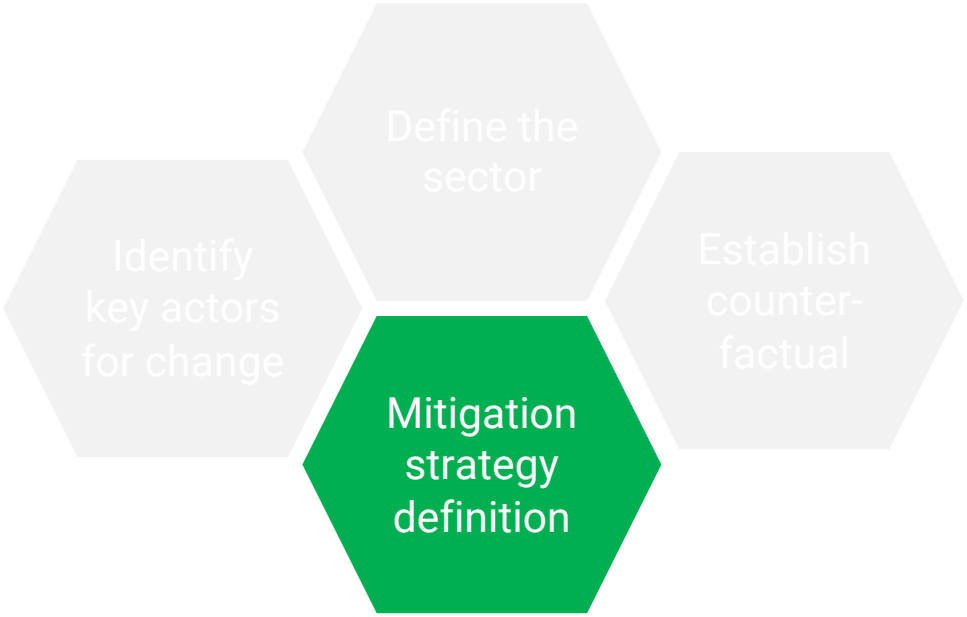
- Are there particular cooling demands that are not considered through following this structure?
- What are the key sources of information that consolidate the baseline of cooling energy use and GHG emissions across the sector?

Key discussion points - establishing counterfactual



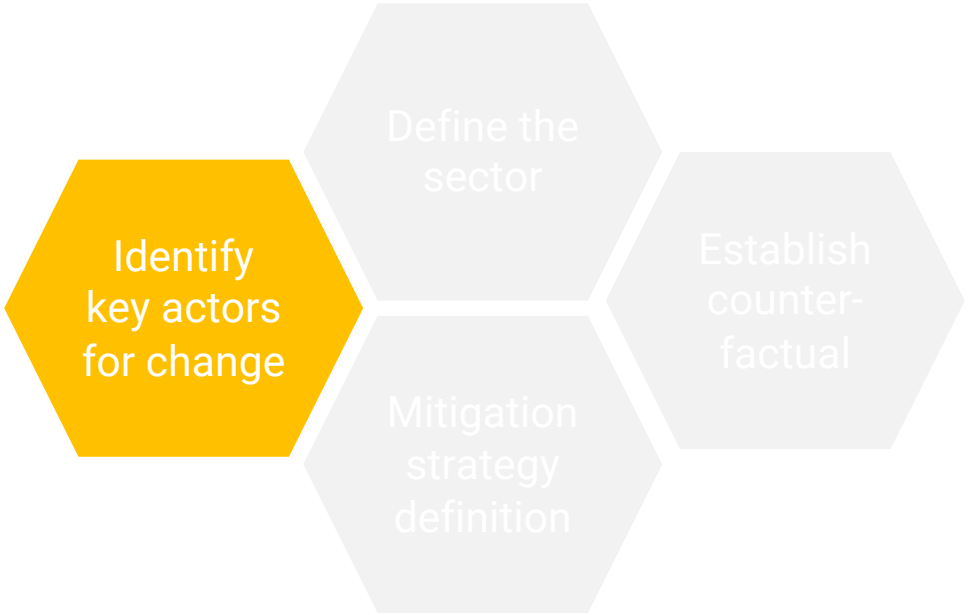
- We are considering a scenario of ‘cooling for all’ by 2050 - is this a reasonable assumption?
- What existing forecasts/models quantify the impact of a cooling for all scenario on energy use and emissions?
- Do forecasts assume that cooling will primarily be provided mechanically using vapour compression technology?

Key discussion points – mitigation strategy definition



- How strong is the evidence on avoid vs shift and improve measures?
- Can 'cooling for all' be sustainably achieved with a bigger focus on avoid in parallel to shift/improve?
- What are key sources on the impact of avoid measures? What are the key challenges to realising these avoid measures?
- How realistic is efficient non-vapour compression technology deployment at scale in the next 30 years?

Key discussion points – identify key actors for change



- What are the key agreements and regulations that can deliver decarbonisation of the cooling sector?
- What are the key agreements and regulations that deliver decarbonisation of parallel sectors? Automotive, buildings, energy system
- Who are the key actors? What action do they need to take? By when?

4

Next steps

We are keen to engage with the sector throughout this project to ensure robust outputs and provide a platform for future work

- We will circulate a survey link to help us input into the project during the current inception phase
- We will conduct a series of expert engagements to shape and refine the pathway analysis
- We will be engaging with the COP26 High-Level Champions team and the UNFCCC Climate Action Pathway thematic leads to ensure the outputs can effectively feed into the other areas given its cross-cutting nature
- Please reach out to David.Aitken@carbontrust.com if you would like more information and/or would like to feed into the project

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Q&A

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David Aitken,
Associate Director, Carbon Trust

Mark Radka,
Chief, Energy & Climate Branch, UN Environment Programme

25 minutes

CLOSING REMARKS

5 minutes

Mark Radka,
Chief, Energy & Climate Branch,
UN Environment Programme

SAVE THE DATE

THANK YOU

Cool Coalition