Energy Transitions Commission

Frequently Asked Questions – Degree of Urgency Briefing Paper

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Section 1: About the ETC

What is the Energy Transitions Commission and what is its mission?

The Energy Transitions Commission (ETC) is a global coalition of leaders from across the energy landscape committed to achieving net-zero emissions by mid-century in order to limit global warming to well below 2°C and as close as possible to 1.5°C.

Our Commissioners come from a range of organisations – energy producers, energy-intensive industries, technology providers, finance players and environmental NGOs – which operate across developed and developing countries and play different roles in the energy transition. This diversity of viewpoints informs our work: our analyses are developed with a systems perspective through extensive exchanges with experts and practitioners. Our ambition is to inform the decisions of public and private decision-makers and support the leaders at the forefront of climate action to speed up the deployment of low and zero carbon solutions.

A list of our commissioners can be found here: http://www.energy-transitions.org/who/
Our ambition is set out here: https://www.energy-transitions.org/ambition/

Who funds the ETC?

The ETC is primarily funded by the organisations with which our Commissioners are affiliated. Membership fee levels depend on the size and nature (for-profit or not-for profit) of the organisation. Commissioners all have equal voice and representation on the Commission regardless of whether their affiliate organisation finances the ETC or not. In addition, some of the ETC's work programmes, in particular ETC China and ETC India, are funded by philanthropic organisations.

The funding we receive finances the ETC's secretariat, analytical programmes, stakeholder outreach and communications.

Who are the Commissioners and how were they selected?

As of July 2022, the Commission's membership includes over 50 leaders coming from energy companies, energy-intensive industries, technology providers, financial institutions, environmental NGOs and academia. They operate across developed and developing countries and play different roles in the energy transition. Commissioners are selected based on their commitment to working towards a net-zero-emissions economy by mid-century.

We endeavour to diversify the Commission's membership in terms of sector, nationality and gender. The Commission is chaired by Lord Adair Turner who works alongside the ETC's senior leadership team. A list of Commissioners and ETC team members can be found on our website at: http://www.energy-transitions.org/who/

Are the organizations with which your members are affiliated backing this report?

This report constitutes a collective view of the Energy Transitions Commission. Members of the ETC endorse the general thrust of the arguments made in this report but should not be taken as agreeing with every finding or recommendation. The institutions with which the Commissioners are affiliated have not been asked to formally endorse the report.

Why is [a given Commissioner] not available for questions?

Some of our Commissioners are unfortunately unavailable for questions due to prior commitments, but several focal reports have now been developed by the Commissioners who not only agree on the importance of reaching net-zero carbon emissions from the energy and industrial systems by mid-century, but also share a broad vision of how the transition can be achieved.

Why have not all ETC Commissioners endorsed the report?

Nearly all our Commissioners have endorsed the briefing paper. A few were unable to formally endorse the report before publication due to procedural formalities within their organisation or have only very recently joined the Commission and therefore were not able to participate in the development of the report.

How does the ETC balance achieving impact with the demands of fossil fuel members?

Commissioners all have equal voice and representation on the Commission. We believe it is critical that the ETC brings together voices from across all sectors, including energy intensive industries, in order to design realistic yet ambitious pathways to net-zero emissions and mobilise all key stakeholders towards this goal. All members of the ETC have agreed to work together to pursue a global net-zero emissions target by mid-century. Our reports are anchored in robust quantitative and qualitative analyses, which are stress-tested and refined with a large panel of experts coming from both our members' organisations and a broader network. The ETC creates a unique space for open dialogue, creating the right conditions for change and advancing the climate agenda.

Does the ETC speak to the challenges of both developed and developing countries?

The ETC develops global roadmaps, while highlighting differences between regional pathways, especially between developed and developing countries. We work with local partners – in China, India, Europe, U.S., Canada and Australia – who have deep country knowledge and play a key role in strengthening and stress-testing our global analyses in light of regional specificities.

The ETC believes that all rich developed economies should and can reach net-zero emissions by 2050 and all developing countries by 2060 at the latest, but that developing countries will require development finance to de-risk and crowd-in private investment. However, some developing countries may be able to achieve full decarbonisation by 2050 or earlier, for example, because they are blessed with significant potential solar and wind resources, dramatically reducing decarbonisation costs.

ETC reports examine scenarios for developed and developing markets. Overall, achieving massive electrification and early power sector decarbonisation, ahead of economy-wide decarbonisation, must be at the heart of all countries' paths to net zero. The ETC calls for developed and developing countries to adopt strategies to achieve grid emissions intensity below 30gCO_2/kWh by the mid-2030s and mid-2040s, respectively.

Section 2: About the paper and its impact

Who is the paper aimed at? Who is your target audience?

The ETC's new report *Degree of Urgency: Accelerating Action to Keep 1.5°C on the Table* highlights three priority areas for accelerated progress from government, corporates and finance. These actions are:

1. **Closing the 'ambition gap'** via more ambitious country targets, with strengthened NDCs (Nationally Determined Contributions) which reflect both country specific actions and the potential impact of sectoral commitments agreed at Glasgow and subsequently.

2. **Closing the 'implementation gap'** via targeted policies and company actions to drive further real-world progress across six critical sectors (methane, deforestation, power, road transport, heavy industry, and energy efficiency).

3. **Closing the 'financing gap'** in particular to support middle and low-income countries to peak and then reduce emissions as soon as possible; in total at least $300 billion per annum could be required to support early coal phase-out, and end deforestation, and carbon dioxide removals in a scenario where sufficient action from policy and industry isn't taken. This funding should come from corporates in voluntary carbon markets, philanthropic capital, hybrid payment and investment instruments, and intergovernmental transfers of climate-related funding from developed to developing countries.

How much of the report is constituted of new analyses vs. integration of previous publications?

The report builds on existing ETC analyses and other external analysis such as Climate Action Tracker and BloombergNEF to produce a perspective on the requirements of a 1.5°C trajectory, the level of decarbonisation that can be feasible by 2030 and the actions required to deliver it.

Who has carried out the underlying analysis?

The ETC secretariat, provided by SYSTEMIQ. The analysis has been tested with relevant experts across member organisations and external stakeholders and with guidance from the UK COP26 Strategy Unit. The ETC report builds on analysis from Climate Action Tracker (CAT) to assess the size of the 2030 emissions gap.

Is it feasible to Keep 1.5°C on the table?

Some voices are challenging whether a 1.5°C trajectory is still feasible. However, each 0.1°C rise above 1.5°C will have hugely significant climate change impacts. The world must continue to aim for this target, and to ensure that any overshoot of it is as low as possible. Both full implementation of COP26 commitments and further progress at COP27 are therefore essential if the world is to have a chance of limiting global warming to 1.5°C.

Are the conclusions of this report valid for emerging economies as well as developed economies? How did you address this challenge?

This report highlights opportunities for reducing emissions across the globe, but also break downs opportunities for emissions reduction into specific countries, or groups of countries. Where the

report highlights that some emissions reductions in emerging economies that are likely to come at additional costs, the report highlights the need for climate finance to flow from developed economies in order to achieve these (e.g., for ending deforestation, or closing existing coal plants).

What impact will the current economic and political situation have on the success of COP27?

The economic and political situation ahead of COP27 is highly challenging. In addition to lingering pressures resulting from the Covid-19 pandemic and supply chain disruptions, the world now faces record energy and high food prices in many regions resulting from the war in Ukraine. Together these are leading to high inflation, lower growth and risks of recession in many countries.

There is a danger that energy security and short-term economic pressures, together with geopolitical tensions, will divert national and international attention from climate change related issues. But many of the actions needed to build greater energy security could also drive a faster transition to a low-carbon economy, as described in the ETC's paper *Energy Security Through Accelerated Transition*. Despite the global geopolitical and macroeconomic headwinds, there is some evidence of progress on climate commitments as outlined in the ETC's *Degree of Urgency: Accelerating Action to Keep 1.5°C on the Table* report.

How do you expect this paper to influence conversations in the lead up to and during COP26?

This report highlights that despite positive progress at COP26, current country pledges and commitments, even if fully implemented, still do not put the world on trajectory to limit global warming to 1.5°C. If the world is to have even a 50% chance of meeting that objective, COP27 must act as a catalyst to turn broad national commitments into specific actions and pave the way to more forceful measures to phase out coal and end deforestation.

We hope this report will be used to encourage actions in key areas and to promote and overall increase in climate ambition

Section 3: Net-zero targets and negative emissions

The term "Net Zero" is used a great deal – but what is "Net Zero" and why should we set "Net Zero" targets?

The concept of "net-zero emissions" is based on the climate science and what we must do to limit global warming. The IPCC's illustrative pathways for limiting global warming to 1.5˚C indicate that CO_2 emissions need to be reduced to net-zero globally by around 2050. In this expression, the "net" reflects the fact that there may still be a small amount of residual emissions by 2050 – the ETC estimates that 2-4 Gt of CO_2 might still be emitted by the energy system – and those should be compensated by negative emissions, obtained via carbon removals (for instance from afforestation or DACCS).

We must therefore aim to decarbonise the economy by mid-century, reducing CO_2 emissions from energy, industry, transport and buildings to as close to zero as possible. Net-zero goals and targets are powerful, because they give us this galvanising clarity of action for government, business, and civil society, focusing the minds on a tangible objective associated with a clear timeline. They are a vital step in accelerating progress and urgency as we must act now to deliver them.

But achieving net-zero in these sectors alone will be insufficient to limit global warming to 1.5°C for three reasons;

- First, as CO_2 accumulates in the atmosphere, it is the total cumulative amount of emissions between now and 2050, and therefore the pace of emissions reduction, that will matter for global warming; this carbon budget is currently estimated at 500 Gt from 2020 by the IPCC, 420 Gt from the beginning of 2022. Cutting emissions fast in the next decade will be necessary to avoid an "overshoot" of the carbon budget - given potential feedback loops and tipping points within the climate system, it is unacceptably risky to rely on large scale negative emissions later in the century. IPCC pathways which avoid such reliance show that CO_2 emissions need to be cut from today's 40 $GtCO_2$ to below 25 $GtCO_2$ by 2030.
- Second, beyond the energy, industry, transport and buildings sectors, emissions from waste, agriculture, food and land-use should also be taken into account
- Finally, non-CO_2 emissions, in particular nitrogen oxide and methane emissions, also contribute to global warming effects and need to be cut.

What role does the ETC envision for negative emissions?

In its report, *Mind the Gap: How Carbon Dioxide Removals Must Complement Deep Decarbonisation to Keep 1.5°C Alive*, the Energy Transitions Commission (ETC), describes how carbon dioxide removals (CDR) alongside rapid and deep global decarbonisation can give the world a 50/50 chance of limiting global warming to 1.5°C**.**

The report confirms that all sectors of the economy can and must decarbonise by mid-century with big emission reductions in the 2020s. Cutting coal use by half and ending 70% of deforestation by 2030 are particularly important priorities. But even given the fastest feasible path of emissions reductions, the world will need at least 70 to 225 Gt of carbon removals between now and 2050 to limit cumulative net emissions to a level compatible with globally agreed climate objectives.

These removals could be achieved via a combination of Natural Climate Solutions (such as reforestation and improved soil management**),** Engineered solutions (for instance using direct air capture of CO_2) and hybrid solutions (such as Biomass with Carbon Removal and Storage (BiCRS)). NCS solutions will dominate in the early years but carry measurement and permanent risks which must be carefully managed; Engineered solutions are currently far more expensive, but costs can and must be reduced over time.

A feasible scenario suggests that from close to zero today, removals could deliver around 165 Gt of cumulative sequestration over the next 30 years.

Section 4 – What is the role of CCUS in the energy transition?

The ETC recognises the complementary role of carbon capture, utilisation and storage (CCUS) has alongside zero-carbon electricity, clean hydrogen and sustainable low-carbon bioresources in delivering a net-zero economy by mid-century.

Massive clean electrification is the backbone of global decarbonisation. However, electrification, hydrogen and sustainable low-carbon bioenergy combined cannot reduce gross emissions completely to zero. In addition, it is almost certain that cumulative CO_2 emissions between now and 2050 will exceed the "carbon budget" consistent with a 1.5°C climate objective. So, to limit temperature rises to 1.5°C, carbon removals will be required alongside deep and rapid cuts in emissions.

Section 5 – What is the role of clean electrification in the energy transition?

Clean electrification will be at the heart of the energy transition, enabled by the rapidly falling costs of renewable energy, with a complementary role for clean hydrogen technology in sectors that are difficult or impossible to electrify.

The ETC report ***Making Clean Electrification Possible: 30 years to electrify the global economy*** set out why it is essential but also feasible and affordable to multiply the size of the global power system by 5, while shifting to renewable-based electricity provision. The parallel report ***Making the Hydrogen Economy Possible: Accelerating clean hydrogen in an electrified economy*** set out the complementary role for clean hydrogen and how a combination of private-sector collaboration and policy support can drive the initial ramp up of clean hydrogen production and use to reach 50 million tonnes by 2030.