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Meeting minutes • 8 October 2024

All-Party Parliamentary Group on Climate Change: Climate Science 101 roundtable

Date: Tuesday 8 October 2024
Time: 3:30-4:45pm
Location: Room P, Portcullis House, Westminster

Attendees:

- APPG Secretariat: Alice Watson, Estelle Limon, Gwen Peters, Zoe Avison, Lucy Pegg.
- Parliamentarians: Luke Murphy MP, Deirdre Costigan MP, Baroness Vere, Alistair Strathern MP, Lord Cameron, Bill Esterson MP, Abtisam Mohamed staffer (Alfiaz), Claire Hughes MP, Andrew Lewin MP, Lord Lilley, Katie White MP, Earl Russell, Richard Foord MP, Charlotte Cane MP, Gideon Amos MP, Brian Matthew MP.

Introductions:

- Luke Murphy MP (Chair) welcomed attendees to the first meeting as part of the new Climate Leadership Programme.
- Delivering nature and climate policy this parliament is incredibly important and we need parliamentarians to collaborate and hold the government to account to be as ambitious as possible. This programme will provide the tools to ensure leadership on climate and nature, through workshops and events.
- Today's session focuses on climate science to discuss the scientific imperative to transition away from fossil fuels and what needs to be done to keep on track for climate targets.

Professor Jim Skea (Chair of the IPCC):

- The IPCC produces reports in 7 year cycles. They have witnessed unequivocal changes including global temperature fluctuation and clear evidence that temperatures are rising steadily over time. 2023 was the hottest year on record.

- The Paris Agreement has three key goals (limiting long-term temperature rises, increasing countries' ability to adapt and build climate resilience, and directing finance flows to enable mitigation), these goals all depend on each other to be achieved.
- With current policies in place, we are heading to 3 degrees warming by the end of the 21st century and the Paris Agreement 1.5 degree goal is slipping away.
- In terms of adaptation and resilience, there are hard and soft limits to adaptation that are already being exceeded. There is enough money in the world, but flows for adaptation (public/private) are insufficient and it is much more difficult to mobilise private finance for adaptation, compared with mitigation
- Mitigation is in a better position for getting back on track to the Paris Agreement.
- The New Collective Quantified Goal (NCQG) is very important symbolically because it is clear that we need trillions of dollars of finance, both public and private, to meet adaptation and mitigation challenges.
- We have the agency and there are success stories, for example with the growth of renewable energy generation. The challenge is to get these beyond the core markets and use financial mechanisms to spread to wider sectors.

Dr Fredi Otto (Senior Lecturer in Climate Science, Grantham Imperial):

- Temperature change affects the climate in two ways. It increases the amount of energy in the system, leading to hotter heatwaves and stronger storms. It also changes the way weather patterns move, so that floods and droughts are exacerbated.
- For example, Hurricane Helene in the US saw heavy rainfall and wind speeds and evidence shows that a 10% increase in rainfall led to a 50% increase in damages - the relationship is not linear.
- In Europe 2022, tens of thousands of people died from extreme heat and we often overlook the impacts heat can have.
- These changes hit hardest for those already struggling. We are witnessing more people affected by high food prices, and vulnerable people also take the longest to rebuild homes following extreme weather. In East Africa we have seen droughts followed by extreme floods leading to political

fragmentation and economic hardship, as well as migration within the continent and exacerbating conflict/insecurity.
- Climate change is leading to a violation of the most basic human rights and inequality and climate change are inextricably linked.

Prof Emily Shuckburgh (Director, Cambridge Zero):

- CO_2 levels are now over 420ppm (in comparison to 250ppm in 1890).e are seeing a very steady rise and annual emissions are at record levels. The challenge is now to reverse that trend.
- There is much interest in understanding which countries are contributing the most to emissions (currently China is the highest emitter, but per capita it is the US).
- In the UK, the CCC produces a report each year and emissions are now half what they were in 1990, so we are seeing great progress. But more than half of the change has come from the energy sector, which is the easiest sector to decarbonise. Going forward, more than three quarters of emissions reduction needs to come from wider sectors such as transport, buildings, agriculture, land and removing greenhouse gases. The most recent report found that only one third of the target required to meet 2030 goals is currently covered by credible plans.
- Speeding up the rollout of low carbon technologies, deployment of natural carbon sequestration, heat pumps and insulation is necessary. We have made progress in scaling up electric vehicles, but the CCC recommends we need to make efforts to electrify vans too.
- Nature-based solutions have good research opportunities at the moment and this is the area where there is the most excitement.

Q&A:

- Luke Murphy MP asked where carbon capture should be used and whether there is any country we should be looking to for serious strategies for non-energy sectors:
    - Jim said all modelled scenarios include carbon capture, there are lots of criticisms about the degree to which we should rely on the technology, particularly when coupled with bioenergy. Deployment will vary internationally and places like North America where lots of

land is available can be an opportunity for more affordable rollout. He recommended caution and said carbon capture is not a panacea.
    - Fredi said carbon capture should only be for the hardest to abate sectors. It attracts attention because it is high tech but a lot of things we need to do are more simple, like insulation at scale. Nordic countries have made a lot of progress on heat pumps. As well as electric vehicles, we need many fewer cars overall if we care about people's health and want cities that can adapt to floods.
- Bill Esterson MP asked how we can attract more finance and what are other technologies we should and shouldn't be pushing:
    - Jim said making more use of export guarantees and strengthening capacity in developing countries to absorb money, so the cost of capital can be lowered, and reforming multilateral banks.
- Richard Foord MP asked what the government could do better for the agricultural transition:
    - Emily said she's currently looking at tree landscapes to understand how land can be managed differently and taking into account the local impacts. She found working closely with farming communities has identified innovative solutions to how you can tweak farming practices to make major differences. She emphasised the importance of farmer-led practices.
- Earl Russell asked what the government should do to speed up adaptation:
    - In most countries there are early warning systems which can be improved through education campaigns. For example, in the 2010 Indian heatwaves, more than 2,000 people died and subsequent heat action plans were established so local authorities could tell people what to do.he death toll has gone down dramatically as a result. Increasing green spaces helps lower temperatures and renaturalising rivers helps to keep flooding away from infrastructure and homes.
    - Fredi said there is no metric for adaptation so it is hard to monitor.
    - Emily said we are significantly behind on targets for adaptation.
    - Jim said that, unlike mitigation, adaptation is systemic and needs to be embedded in spatial planning.
- Baroness Vere asked how we take this from a global negative message to make progress in other parts of the world towards raising funds:

    - Fredi said it is the government's role to show we can be successful and make people's lives better, which takes years but this is what the UK needs to do.
    - Emily said there is so much innovation sat in universities and she is seeing a gap in terms of moving from early stage ventures into the next stage. This is about funding and skills which would both benefit the UK economy and climate.
- Lord Lilley asked how we balance the message that tackling climate change costs a lot with the message that it will save money
    - Jim said that clean technology is capital intensive but delivers operational savings once installed. So the question about costs is really about when those costs fall - if we frontload spending, we can achieve savings later.
- Luke Murphy asked whether tipping points are adequately understood:
    - Emily said there are a number of tipping points we know about, for example the melting of the Greenland ice sheet or overturning circulation of the ocean, or the Amazon rainforest. The understanding of how likely we are to pass one of those tipping points still has scientific uncertainty, the forefront of research at the moment is looking at whether we can see early warning signals to see whether we are approaching tipping points.
    - Fredi said that although the Greenland ice sheet is pretty certain to flip, we don't need a tipping point to want to stay under 1.5 because the impacts from warming are disastrous already. It is not the case that we're fine if we don't pass tipping points, it can't be used as an excuse for inaction.

Closing remarks:

- **Jim:** In the past we have worried about the degree to which science is scaring people, we need to think carefully about the balance of what comes out of the IPCC report, the next report will be more about action.
- **Emily:** Highlighted the importance of looking at climate change through risk and opportunities, rather than cost-benefit analysis.
- **Fredi:** By doing what we need to do to mitigate, we help the poorest people and we don't talk enough about this, we need to reframe this to what people could gain, for example a safer healthier planet.

- Earl Russel noted that hope is really important and often a missing element.