

VIEWPOINT

COP26 – the way ahead



Professor John Loughhead FREng, former BEIS Chief Scientific Advisor, explains what he would like to see from the COP26 meeting to be held in Glasgow later this year.

All 197 countries who are party to the UN Framework Convention on Climate Change (UNFCCC), established at the Rio Earth Summit in 1992, meet annually to review activities and agree new actions to tackle climate change. This year, COP26 – the 26th Conference of the Parties to the UNFCCC – will be hosted by the UK and Italy in Glasgow on 1–12 November, a year later than expected due to the COVID-19 pandemic.

The discussions are especially important this year as they will examine progress against the targets agreed at the Paris meeting in 2015. There, for the first time, each and every country agreed specific actions called Nationally Determined Contributions (NDCs), to reduce emissions, develop adaptation actions, and to address so-called ‘loss and damage’ mechanisms to compensate for climate-induced catastrophes. The latter are still under discussion. Importantly, all countries have been asked to revise their NDCs for COP26 to increase impacts by 2030, as current measures are predicted to result in average temperature rises of about 3.3°C even if they are all actually implemented.

Since 2015 work by the UNFCCC scientific group, the

Intergovernmental Panel on Climate Change (IPCC), published in 2018, has shown that if average temperature rises can be held to 1.5°C the effects, in terms of extreme weather events such as heatwaves and heavy rainfall, can be significantly reduced compared to a temperature rise of 2°C. Adopting measures to try and achieve this target also has the benefit of slowing the rate of average temperature increase, which allows more time to implement adaptations to the inevitable changes in the environment that will occur.

But to do this, global emissions will need to reduce 45% from 2010 levels by 2030 and achieve net zero by 2050. Such changes are significantly greater than the targets adopted at Paris will produce, so the case for more urgent and ambitious action has become clear in the last five years.

In some ways the delay to COP26 taking place may prove advantageous to the discussions. The world has changed markedly over the extra year. China, Japan, South Korea, South Africa and Canada have declared an ambition to achieve net zero emissions by 2050 or 2060, and the election of Joe Biden as President makes it very likely that the US will

dramatically change its position to a 2050 net zero target too. More than 110 countries have declared an intent to achieve this (although only six, including the UK, have specific legal commitments in place). The momentum has shifted, so for the remaining large emitters – notably India, Russia and Saudi Arabia – pressure will increase to demonstrate greater commitments than they have to date.

A real challenge for COP26 will be the extent to which this group is prepared to make a material contribution to the global emission reduction efforts. There are genuine issues they have to face, primarily the economic challenge, but the changed US stance could play a major influence on their position. It is reasonable to assume that the balance of views internationally has now moved to accepting that more ambitious action is required, as opposed to the position in Paris where there was debate about the need for the scale of response proposed by the climate leader countries.

Targets for success

The President of COP26, Alok Sharma, has indicated the meeting's focus will be the transition to clean energy, clean transport, nature-based solutions,

Celebrating the signing of the Paris Agreement at COP21 in 2015

Photo: UNclimatechange

adaptation and resilience and finance. What will be critical are the binding commitments countries are prepared to make to deliver them. Aspirations provide cheery announcements, but the success of COP26 will be measured by hard targets and the support of means to deliver them.

Assuming we see targets accepted, I believe there will have to be an emphasis on innovation to enable them. The International Energy Agency's (IEA) *Energy Technologies Perspectives* report last year claimed that 35% of required emissions reductions will come from technologies that are still at very early stages of exploration, and a further 40% from those not yet commercially deployed. This represents an enormous challenge that will require a response from both the public and private sectors.

Fortunately this has already started. For early-stage technologies the Mission Innovation initiative brings together 25 major countries working to accelerate innovation progress. Mission Innovation was launched at the Paris COP in 2015 with members pledging to double public resources for clean energy innovation by 2020. A few months ago they unanimously agreed to support a second phase, focused on delivering specific outputs needed to meet more ambitious emissions reduction targets.

In parallel, the Clean Energy Ministerial meetings have become a forum for countries to share information on transition policies, and form collaborations on demonstrations and developments in later stage, but non-commercial, technologies. Combined with the UNFCCC Race to Zero campaign, Oil & Gas Climate Initiative, Energy Transitions Commission, World Economic Forum Future of Energy and many others we have a plethora of campaigns. A valuable output from COP26 would be a means for these to work in a cohesive fashion rather than independently.

A substantial task

Assuming COP26 does secure commitments globally, the task of delivering will be substantial. The global economy is today underpinned by carbon-based energy and the implication of a change towards net zero emissions is its total transformation, something Rachel Kyte, Dean of the Fletcher School at Tufts University, has termed 'a handbrake turn for the world economy'.

Energy and industrial infrastructure are typically long-lived, so making the required changes at the pace demanded will not be easy, could demand early retirement of some assets, and will need sustained commitment at government level. An example is that changes to low carbon heating in UK dwellings will require upgrading the fabric and systems of around a million homes annually for each of the next 30 years. That demands the development of a suitably skilled workforce in the hundreds of thousands, and investment of at least £10bn each year. Who will pay the costs, and how they can be recovered or justified at personal or corporate level remains to be agreed. Similar efforts will be needed in all countries, some of whom may not have the financial means to deliver them, so finance mechanisms to be discussed at COP26 are of real import.

Clearly the downward pressure on carbon emissions will challenge the existing oil and gas business models, and we are now at or close to the point of peak oil production. Evidence can already be seen in the markets of caution over the future of the industry; the market capitalisation of Ørsted now roughly equals that of BP for instance. However, all is not bad news, as the importance of oil and gas will not disappear rapidly – although the nature of its use will probably change. The IEA's latest *World Energy Outlook* projects natural gas supply remaining roughly at current levels until 2040, and oil supply doing the same or seeing a reduction of up to a third over the same timescale, depending on policies pursued internationally.

The difference will come in how these fuels are used. After a couple of decades of tentative exploration it seems probable that carbon capture and storage (CCS) technologies will become a significant means for countries to meet their emissions reduction goals, particularly in the industrial sector and as a route to produce low carbon energy vectors such as blue hydrogen. Gas remains attractive as a transition fuel, especially for those places where coal is currently exploited. The opportunity for the incumbent oil and gas companies to find new roles is there, but they will need to become advocates for change in how their products are used and leaders of the transition. An important and often overlooked aspect will be helping their current customers through the



Professor John Loughhead FREng

changes they will need to make to stimulate demand for new means to provide energy.

A green recovery

The impact of COVID-19 on climate change mitigation efforts is still to be understood. Restrictions on travel and economic activity have caused an immediate reduction in emissions, but it is not clear to what extent this will rebound as vaccination is progressively implemented globally. Previous experience suggests travel will resume with time, so the main question is whether the economic cost of the pandemic will inhibit ability and willingness to change the system, or the need to stimulate economies will find energy transformation an attractive option.

Recent signals from the Biden team hint at decarbonisation of the electricity system, major deployment of electric vehicle (EV) chargers, and greening of buildings in the US by 2035, in addition to the \$1.9tn stimulus package for direct COVID support. Meanwhile, the EU and UK have both declared intents to establish a 'green recovery'.

In the UK, the announcement in November 2020 of a 10-point plan for a green industrial revolution with £12bn of public funding towards a total £50bn investment demonstrates intent, but details of exactly what will be done, and when, are still to be disclosed. Importantly, making the required changes means tackling the activities increasingly difficult to decarbonise, as most of the low-hanging fruit has been exploited. So, although a small contributor to global emissions, the UK's performance will be influential.

As host of COP26, where increased commitments are sought; as the first country to adopt legal climate targets; and the first to commit in law to achieving net zero, the UK's ability to demonstrate real progress against its increasingly challenging ambitions will be seen as proof of feasibility by many.

It is therefore significant that Alok Sharma is now committed full-time to his role as COP26 President, relinquishing his position as UK Business Secretary. As a major statement of its intent to deliver a successful COP26, this is the first step by the UK government. But securing agreement to what is needed, and then showing domestic delivery, will be no easy task. We should wish him well. ●