COP26

Stepping up to the ingenuity challenge

Much has already been written about last month's COP26 – see our news story on page 5 for one example. Here, freelance writer *Nick Cottam* concludes that the imagination and expertise of the energy industry will be vital to achieving the changes needed to meet the climate challenge.

As the dust settles on COP26 you could say that, amid all the haggling, the false starts, the political posturing and finally that watered down deal, it's a good time to be in energy. For those starting out on their careers – engineers certainly, but even geologists – you are part of an industry in transition, working as it is to develop an array of new power sources for deployment at scale. How's that for a challenge?

The Glasgow Climate Pact which eventually emerged at the 11th hour from that frenetic summit was a disappointment for many. But let's be optimistic for a moment. Behind the hard-nosed politics there are more signs of incremental change which call on the capacity for human ingenuity and an acceptance that, in this area at least, we could stand or fall together.

The opening plenary session of COP26 in Glasgow

All options are on the table

The ingenuity bit comes in all shapes and sizes, from harnessing the power of the tide, to smaller-scale nuclear; from solid-state batteries, to hydrogen buses. Most politicians at COP26 and their delegations understood that all viable zero carbon and low-carbon options have to be on the table if anything close to 1.5°C is to survive – and if a still joined-up global economy is to have any chance of living up to the latest set of non-legally-binding pledges.

While COP26 President Alok Sharma hailed the Glasgow Climate Pact as a 'historic achievement', his tears at the end of the conference indicated a sleep-deprived frustration at all the political shenanigans to water down the deal, not least those of India and China over coal. The two countries, he said, would have to 'explain themselves to developing countries' who would be most affected by the climate crisis.

For its part, China boasted about producing more coal than ever on a single day of the conference, the message being that whatever it does on the road to net zero will be at its own pace.

While China and India also came together – along with Russia, another big emitter – in refusing to sign the pledge to cut methane by 30% by 2030, there was some cause for hope that China will put its foot on the gas, so to speak, when it is good and ready. Who knows what will come out of China's pact with the US to boost climate cooperation over the next decade, but you can bet your international dollar that if there are trading advantages to be had, then China's decarbonisation plans will move up a few gears.

For the moment, China is pledged to net zero by 2060, with no more coal investment overseas and reducing domestic reliance on coal by 2026. China, like other countries can be cagey about decarbonisation plans because it wants to secure competitive advantage – when the time is right.

Cutting methane

The pledge to cut methane by 30% was undoubtedly a big early headline at COP26, a commitment which, according to Fatih Birol, Executive Director of the International Energy Agency (IEA), would have a similar impact on global warming as switching all the world's cars, trucks, ships and planes – the entire global transport sector – over to net zero emissions technologies.

An IEA report, released in October, showed that rapid steps to tackle methane emissions from oil, gas and coal operations would have immediate impacts because of the potent effect of methane on global warming and the large scope for cost-effective actions. The report set out practical measures that could achieve a 75% cut in methane emissions from global fossil fuel operations by 2030.

The IEA was praised at the conference for its work on methane over the last decade or so, not least its regulatory roadmap and toolkit for reducing methane leaks in the oil and gas sector. A shame then that the big three methane emitters didn't sign this aspect of the deal.

Keeping 1.5°C alive

The COP devil, as ever, is in the detail and while countries must republish climate action plans by the end of next year, there is growing concern that the 1.5°C temperature rise target is in jeopardy. As Sharma commented with as much optimism as he could muster: 'We can say with credibility that we have kept 1.5 degrees alive. But its pulse is weak.'

The latest pledges at the conference, the scientists tell us, can

get us down from 52.4 to 41.9 Gt of annual greenhouse gas emissions by 2030; but actually we need to be at 26.6 Gt. This of course is about keeping 1.5°C of warming within reach. But if we look at this another way there is some cause for optimism.

Before the Paris COP meeting in 2015 the world was on track for 6°C of warming. After Paris that came down to 4°C. The pledges submitted in the run up to Glasgow took that down to 2.7°C and over the fortnight of more summit pledges this fell again to 2.4°C. Some 90% of the world is now covered by net zero targets, representing 80% of global emissions.

While 2.4°C is still some way above 1.5°C it still represents significant progress. If all the net zero pledges made this year are enacted, we will be on track for 1.8°C. That probably means not 'phasing down' much of the world's coal production as in the agreement, but agreeing to phasing it out – and with a timescale, certainly among the big emitters. It means cutting back more aggressively on gas and it means making great strides in areas like battery storage and green hydrogen.

In other words there needs to be ingenuity with a full frontal attack on the *status quo* in rich countries, and lots of help with both mitigation and adaptation for some of the poorest (and most vulnerable) nations.

'We can say with credibility that we have kept 1.5 degrees alive; but its pulse is weak.'

Alok Sharma, COP26 President

Give us the money!

This brings us to the thorny issue of finance, which again on the surface looks to show progress but still leaves poor and vulnerable countries claiming that they are being misled and short-changed. The picture of Tuvalu's Foreign Minister Simon Kofe speaking from a lectern while knee deep in sea water was a good stunt, and it resonates against a backdrop of rising sea levels and drowning land mass.

While the conference closed with a deal to increase the money available to help poor countries adapt – from the $100bn originally pledged to $500bn by 2025 – there is still no cast iron guarantee that the full amount will be forthcoming and as yet there is no 'loss and damage fund' to compensate nations who have suffered loss as a result of climate change. It looks as if the insurance industry will have to have a hand in this one and it will want underwriting big time.

Former Bank of England Governor and UN Special Envoy Mark Carney was very much in evidence on Finance Day of the conference. He declared the $130tn pledge by 450 financial organisations as a watershed moment. Up until now, he said, there had not been enough money in the world to fund transition but this would plug the gap in backing clean technology and directing finance away from fossil fuels.

This may be part spin and part wishful thinking in the short term but, if Carney can galvanise finance colleagues into action, he will be doing more than most.

Energy innovation

Energy sector innovators and specialists might well see this as the moment to get excited. Small-scale nuclear, solid-state batteries, next generation wind turbines and green hydrogen will all help to concentrate clever, creative minds in pursuit of a raft of new zero carbon developments around the world – including those from China and from India, where state-of-the-art and now much more solidly financed solar is waiting in the wings behind coal.

Closer to home are the pioneering renewable energy projects going on in places such as the Orkney Islands, highlighted in a climate change TV documentary during the conference. Wind energy around this breezy, most northerly outpost of the UK, we were reminded, was producing enough green energy to power the world's first hybrid hydrogen ferry.

This writer remembers taking the world's shortest commercial flight a few years back from the tiny island of Papa Westray off Orkney to neighbouring Westray (under two minutes in duration) and we learnt in the film that the first hydrogen aircraft will be operating around Orkney as soon as it gets approval. On that basis, it is reasonable to wonder when we might expect the first long-haul commercial flight powered by hydrogen and how much renewable energy would be needed to generate enough green hydrogen for the journey?

Small-scale energy innovation examples such as those from Orkney help put some of the COP26 challenges in perspective. Renewable electricity can give you green hydrogen but how do you generate enough additional power to make a difference beyond the showcase projects? Similarly with wave and tidal energy. How do you scale up, how quickly, what cost and what are the likely rewards for early pace setters?

Hard choices towards transition

At best the COP26 deal should accelerate and incentivise transition, providing the right incentives are put in place and nation states back words with actions. With potential energy innovation covering everything from electric vehicles to hydrogen boilers, governments know they have to bite the bullet in persuading people to change lifestyles – certainly in rich countries.

Those net zero transport options alluded to by the IEA's Fatih Birol require people to change lifestyles and governments to support their efforts to do so. Travel less, turn the heating down and eat less meat were among the activist messages that resonated around COP26, and it was perhaps no surprise that temperatures around the Glasgow conference venue were cooled significantly during what were often fraught final negotiations.

Like the proverbial church wedding, COP26 – yes, the 26th meeting of this kind – produced a public commitment, albeit not out-and-out love and affection, among the parties. We have to believe the world will transition and decarbonise to survive and ingenuity, certainly in the energy sector, will play an important part in this process. ●

Photos: UNclimatechange

Energy Institute in Glasgow

The EI put the diverse workforce of the future centre-stage at COP26, promoting the POWERful Women initiative in the UK Presidency Pavilion in the Blue Zone with a discussion aimed at inspiring similar collaboration on gender diversity on the international stage. It also screened its new documentary, 'The challenge of our time', alongside the event. See p14 for more.