



Setting the scene for COP 26

In the first of a series of articles ahead of COP26, Kirsty Gogan, co-founder and global director of Energy for Humanity, writes for *Nuclear Future*

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In the build-up to COP26 it's worth reflecting on progress made, and not made, since the Paris Agreement five years ago. Weeks after the Paris Agreement was signed, we passed the 'red line' threshold of concentration of CO2 in the Earth's atmosphere, and then kept going. Two years later we hit a monthly average of 411 ppm, with a peak of 414 ppm in May 2019.

Even more worrying is a fact that David Wallace-Wells points out in his best-selling book, *Uninhabitable Earth*: more than half of the carbon emitted in the atmosphere today was emitted in the past 30 years.

In another 30 years – by 2050 – the world needs to have almost completely eliminated emissions to have a chance of keeping global mean temperature increase to 2°C. Already today, at 1°C of warming, we are starting to see the effects of climate chaos in the UK and throughout the world.

Even if every country met the Paris pledges it has made to date, average global temperatures would likely rise by between 3°C to 4°C by 2100 (depending on your level of optimism or pessimism) compared to as much as 6°C increase with no action.

So far, no country is on track to meet its commitments.

“For ten years, the Emissions Gap Report has been sounding the alarm – and for ten years, the world has only increased its emissions,” said UN secretary-general António Guterres. “There has never been a more important time to listen to the science. Failure to heed these warnings and take drastic action to reverse emissions means we will continue to witness deadly and catastrophic heatwaves, storms and pollution.”

At COP21 in 2015, new environmentalism was emerging, characterised by a willingness to include



‘taboo’ technologies like nuclear power, and a commitment to evidence-based decision-making. Organisations like *Nuclear 4 Climate*, *Generation Atomic* and *Ecomodernists* showed up to make the civil society case for nuclear energy as a climate mitigation tool. Energy for Humanity organised a series of events. These included a sold-out screening of *Pandora's Promise* and a major press conference for four of the world's most renowned climate scientists, Kenneth Caldeira, Kerry Emanuel, James E. Hansen and Tom Wigley. They argued that, given the scale and urgency of climate change, no clean energy option should be off the table.

SO WHY DID THESE EMINENT SCIENTISTS DECIDE TO COME TO PARIS IN 2015?

For nearly two decades nuclear power had been officially excluded from the multilateral UN climate negotiations process. Environmental groups successfully lobbied to keep nuclear out of the ‘clean development mechanism’ and other Kyoto mechanisms to garner carbon credits. Since then, nuclear had been off the table and green groups who have a

COP21 press conference

strong voice at the annual negotiations – together with big name backers like Al Gore and Bill McKibben – insisted that a 100% renewables pathway is the only acceptable carbon mitigation option. That had become the mantra repeated by everyone, even by the then UNFCCC executive secretary Christiana Figueres.

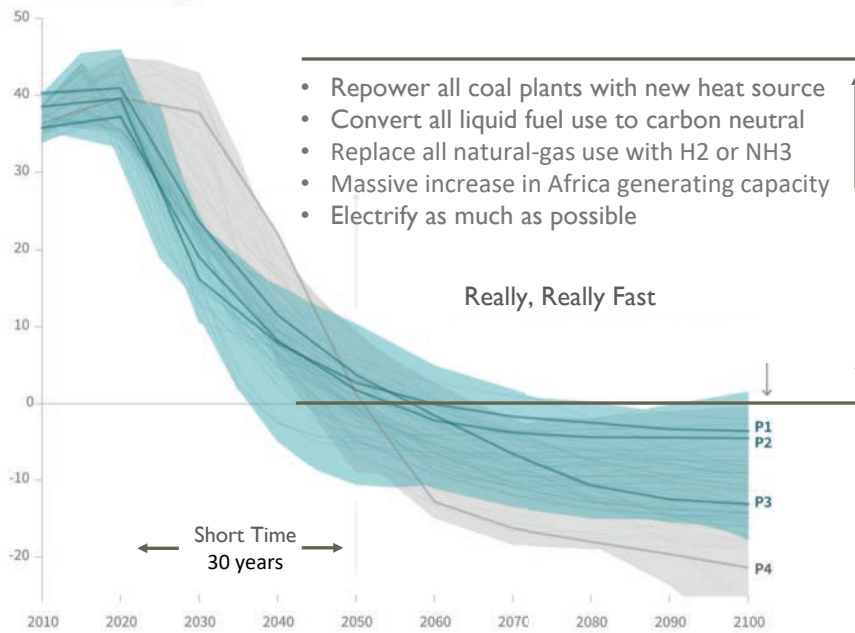
The problem is that this confuses the means with the end. 100% renewables is not really the goal. The goal is decarbonisation.

So, in light of the scale and urgency of climate change, this group of leading scientists argued that only a combined strategy employing all the major sustainable clean energy options – including renewables and nuclear – can prevent the worst effects of climate change.

The end result was that the Paris Agreement made a significant shift: away from a prescriptive framework driven by technology specific targets, and towards deep decarbonisation using all tools at our disposal. With just one mention of ‘renewables’ in the entire text, the Paris Agreement is broadly technology neutral. This represented a significant step forward.

Global total net CO₂ emissions

Billion tonnes of CO₂/yr



Source: IPCC Special Report on Global Warming of 1.5C 2018

What do we need to do if we are going to make something like this happen while growing energy access?

- Repower all coal plants with new heat source
- Convert all liquid fuel use to carbon neutral
- Replace all natural-gas use with H₂ or NH₃
- Massive increase in Africa generating capacity
- Electrify as much as possible

Lots to do!

clean energy options to include nuclear products that are cost competitive, easier to buy, easier to deliver, present lower risk to investors and can meet a broad range of market applications.” Energy for Humanity presented their Declaration to the UK and Canadian governments in March.

Signatories included world-renowned climate scientist James Hansen; president of African Women in Energy and Power, Ms. Bertha Dlamini; national Secretary of Prospect Union, Alan Leighton; chief engineer at the Institute of Mechanical Engineers, Jenifer Baxter; former chairman of the Energy and Climate Change Select Committee, Tim Yeo; and climate author Mark Lynas; among 32 civil society leaders from nine countries.

In addition to the supply of electricity, which is only one fifth of energy consumption, advanced reactors have the most potential to decarbonise the hardest sectors of shipping, aviation, industry and transport through production of low cost and scalable clean, synthetic fuels, as well as to desalinate seawater in regions suffering water scarcity; to support access to modern energy services in remote and developing communities; and to repower the existing global fleet of coal plants as part of a just energy transition.

ENERGY FOR HUMANITY

FAST FORWARD TO COP25 MADRID 2019

Despite some progress towards integrating the world’s second largest source of clean energy (after hydro) into the larger conversation, COP25 continued to be dominated by an emphasis on a narrow set of technology options. It was also largely focused on the power sector, which still represents just 20% of energy use. This needs to change. Deep decarbonisation within meaningful timescales requires a far broader technology-inclusive perspective, across the whole energy system. The old arguments that nuclear energy is too slow and expensive just don’t hold water when the evidence does not support that.

The time has come to move beyond narrow technology choices and engage in evidence-based, outcomes-focused action. COP25 left a bitter impression that our leaders are not taking seriously the lack of progress to date, nor the major challenges ahead in decarbonising fuels & heat, which together represent 80% of current energy demand. Most mainstream projections suggest fossil fuels will continue to supply 50%-60% of energy by 2050.

CIVIL SOCIETY DECLARATION 2020

To make a dent on the projected 60% fossil fuels by 2050, the nuclear industry must step up. So far, the conventional nuclear industry has frankly not come forward with a plan for how it will scale up and deliver the needed products that can decarbonise heat and fuels and power.

As the world’s second largest source of clean energy, and the only one that has historically scaled up fast enough to meet the challenge, and that can be built anywhere, the climate community should be demanding answers from the conventional industry about how it plans to step up and take centre stage alongside renewables at the upcoming COP26 meeting in Glasgow.

Meanwhile, the emerging, entrepreneurial, but severely under-resourced advanced reactor sector needs to be raised up with the same levels of policy support and access to finance that has helped to drive cost reduction and increased rates of deployment in the new renewables sector.

At a recent event in London civil society leaders declared: “In this critical decade we must expand the suite of

“What do we want?”

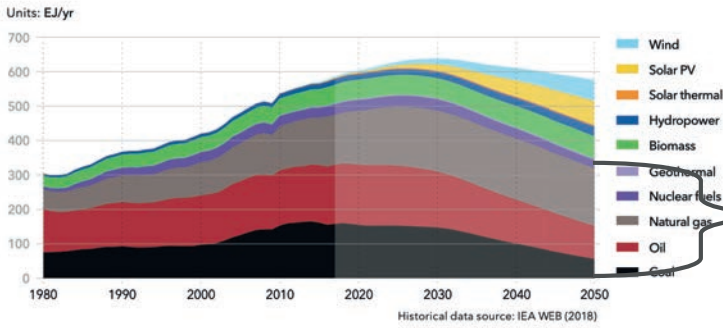
“Evidence-based decision making and whole system thinking!”

Our view is that to achieve this transition, within meaningful timescales, a new form of dialogue is needed. Instead of pitting technology against technology, we need a discussion that enables evidence-based decision-making focused on shared goals and priority outcomes. This dialogue should be rooted in values and metrics set by the sustainable development goals. The energy system should deliver benefits to humans and nature, e.g. be emissions-free, reliable, affordable and flexible. It should provide social, economic, and environmental benefits including tackling air pollution, protecting habitats and biodiversity on land and in the oceans, and improving life chances for women and children throughout the world, increased energy supply, both electricity and fuels, while decarbonising, and radically reducing the impact on nature.

The dialogue at COP26 should seek to frame the discussion in terms of whole



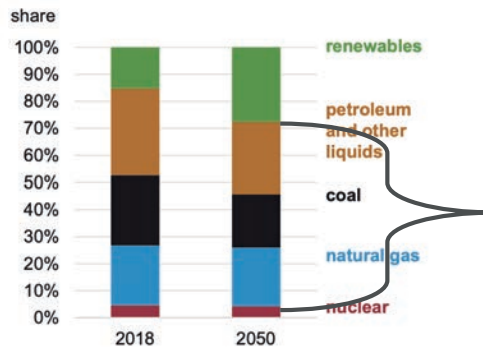
World primary energy supply by source



Even in projections of massive growth of renewables, a majority of primary energy is still fossil in 2050

60% Fossil in 2050

Source: DNV 2019



>60% Fossil



Source: EIA 2019



system thinking – across power, heat, industry and transport. How can we design the highest possible performing system (clean, reliable, affordable, flexible) with a diverse portfolio of technologies? We could achieve this by asking ourselves the following questions:

- Imagine if the energy transition was designed to achieve outcomes – clean air; resource efficient; climate friendly; abundant; scalable; low cost – in a genuinely technology-neutral way? What would change?
- Imagine committing as much resource and effort to increasing deployment rates and driving down costs for all low carbon technologies identified as necessary by the IPCC as we have done for wind and solar. What would the effect be?
- Imagine if we applied a whole systems perspective beyond the power sector to decarbonise the whole economy affordably and at scale. What would change?
- Imagine if we applied a standardised and consistent approach to best practice across all technologies in the following areas:

- ◆ Access to finance
 - ◆ Consistent independent regulation
 - ◆ Siting
 - ◆ Supply chain development and capability
 - ◆ Project management
- What could we achieve?
- What do we need to let go of in order to get together and really solve this problem? Each of us could ask ourselves that. Perhaps we each have our favourite technologies and we react negatively to the other technologies.
 - ◆ What would happen if we came from a position of ‘yes, and..?’
 - We have been focusing on 20% of energy use, and a small percentage of 20% of energy use.
 - ◆ What would happen if we expanded our perspective to the whole energy system?
- Could this evidence-based, whole system approach support the creation of a Grand Coalition at COP26, such as that proposed by IEA executive director, Fatih Birol?
- Could a determined focus on evidence-based, outcomes-focused decision-making deliver the progress we’ve so far failed to achieve?



Kirsty Gogan, co-founder and global director of Energy for Humanity

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