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The Safe Energy Journal doesn't usually deal with the UK Government's proposed new reactor programme, although this issue includes an update. If the new reactor programme is your main interest you should watch out for our other newsletter here:

<http://www.no2nuclearpower.org.uk/nuclear-news/>

1 New Nuclear Update

EDF Energy has submitted its application for a Development Consent Order to build two EPR reactors at Sizewell C in Suffolk to the National Infrastructure Planning Inspectorate, (1) despite appeals for a delay until the coronavirus pandemic is under control. (2)

The National Trust, Suffolk Wildlife Trust (SWT) and the RSPB are all worried about the proposals impact on a unique environment including a rare fen habitat, and Minsmere nature reserve. (3) Together Against Sizewell C (TASC), says it will *"irreparably alter that unique Suffolk character and nature of this tranquil and welcoming county."*

EDF hopes to fund the project using the RAB model which would allow the company to be paid, by a levy on all UK electricity consumers, during the construction phase, cutting the development risk and allowing it to secure cheaper financing. Proponents say this type of financing, previously used in Britain to finance infrastructure assets such as water and electricity networks, would ultimately lower the cost for consumers. However, critics say it will leave taxpayers liable for any cost over-runs. (4) According to the FT, nuclear industry leaders privately admit there are doubts over the regulated asset base model, given reactors are much riskier than other infrastructure that has been financed in this way. (5) What we could be witnessing is EDF's last ditch attempt to get Sizewell off the ground using money allocated for the post-pandemic recovery.

The planning process is likely to take around 18 months to complete allowing the Company to make a final investment decision around November 2021. (6)

EDF expects Sizewell C to be around 20% cheaper than Hinkley. Hinkley's cost recently increased by £2.9bn to around £21.5-£22.5 billion, which would make Sizewell around £17.2 - £18bn. (7)

Chinese Concerns

China is threatening to end its investments in new British nuclear plants, according to *The Times* in retaliation for dropping Huawei from the 5G network. China's ambassador to the UK, Liu Xiaoming,

has reportedly said that abandoning Huawei could undermine plans for Chinese companies to build nuclear power plants. (8)

A new China-sceptic organisation, the China Research Group, has been formed by Tory MPs led by Tom Tugendhat, chairman of the foreign affairs select committee. Former Conservative leader, Sir Iain Duncan Smith, has warned that Sizewell is *“the next Huawei ... another major manifestation of the problem we face having set out on the wrong path with China years ago.”* He is calling for energy policy and how the UK interacts with China to be reviewed. (9)

The Chinese State Company, CGN, has a 33.5% stake in Hinkley Point C, and was originally expected to take a 20% stake in Sizewell C. But under the Regulated Asset Base (RAB) model, EDF and its Chinese partner, CGN, would not own the plant (it would be owned by institutional investors), but would supply, build, operate and maintain the reactor under profitable cost-plus terms. All the risk would fall on consumers. CGN also wants to build two Chinese-designed HPR1000 reactors at Bradwell in Essex. CGN will be the two-thirds owner of Bradwell B, and EDF the junior partner. (10)

The Blackwater Against New Nuclear Group (BANNG) has voiced concerns about the potential security risks. These fears have been echoed by Dr. Robert Ford, the US State Department’s Assistant Secretary for Non-Proliferation and International Security, who has warned that CGN ‘is closely linked to the Communist regime’s military’ and urged Britain not to hand China control of its electricity (11). BANNG has written to Nadhim Zahawi, the Energy Minister, pointing to concerns about the Chinese threat to British industry, trade and security and urging him to consider whether having Chinese-designed and built reactors on a vulnerable site in Eastern England is in the national interest. (12)

One of the few other EPRs being built in the world is Flamanville in Normandy which was initially scheduled to open in 2012 at a cost of 3.5 billion euros. Following numerous difficulties, it is now valued at 12 billion euros, and will not start before 2023. (13)

The other EPR being built in Europe is Finland’s long-delayed Olkiluoto 3 (OL3) which has just been hit by another setback after the nation’s safety watchdog reported valve problems in a component involved in the cooling process. The reactor is still hoping to start producing electricity in November this year. It was originally due to be completed in 2009. (14)

Wylfa

According to the Secretary of State for Wales, Simon Hart, there is “real enthusiasm” for a new nuclear plant on Anglesey - Wylfa Newydd would “tick all the boxes”. He hopes the nuclear proposal could be revived if a new funding deal is struck. He described Wylfa Newydd as *“being intended to have a happy ending,”* while also conceding that project of its size was bound to be fraught with difficulty. *“That’s as far as I can go for now but there are very few people that think it’s a fundamentally bad idea, but that doesn’t mean that getting to the finish line isn’t fraught with difficulty with a project of this magnitude.”* Described as a kick-starter to resuming the project, in September the UK Government is expected to make a decision on vital planning permission, known as a Development Consent Order, to construct the power station. (15)



1. <https://infrastructure.planninginspectorate.gov.uk/projects/eastern/sizewell-c-new-nuclear-power-station/>
2. East Anglian Daily Times 27th May 2020 <https://www.eadt.co.uk/news/edf-delay-on-sizewell-c-consultation-1-6672349>
3. Ecologist 27th May 2020 <https://theecologist.org/2020/may/27/new-nuclear-power-station-plan-lodged> and Independent 27th May 2020 <https://www.independent.co.uk/environment/sizewell-c-nuclear-power-plant-wildlife-edf-energy-a9534631.html>
4. Reuters 27th May 2020 <https://uk.reuters.com/article/uk-britain-nuclearpower-edf/edf-seeks-building-consent-for-britains-sizewell-c-nuclear-plant-idUKKBN2323DA>
5. FT 2nd June 2020 <https://www.ft.com/content/4e3221ef-ac1e-43cc-8d68-e1397ca0637f>
6. Bloomberg 27th May 2020 <https://www.bnnbloomberg.ca/edf-moves-closer-to-second-new-nuclear-project-in-britain-1.1441466>
7. Business Green 27th May 2020 <https://www.businessgreen.com/news/4015650/edf-finally-submits-plans-2gw-sizewell-nuclear-plant-suffolk>
8. Times 7th June 2020 <https://www.thetimes.co.uk/edition/news/china-threatens-to-pull-plug-on-new-british-nuclear-plants-727zlvbzg>
9. Telegraph 27th May 2020 <https://www.telegraph.co.uk/politics/2020/05/27/chinese-involvement-sizewell-nuclear-plant-next-huawei-mps-warn/>
10. Times 24th May 2020 <https://www.thetimes.co.uk/edition/business/the-great-china-dilemma-6rdmhw3wl>
11. Daily Mail 16th May 2020 <https://www.dailymail.co.uk/news/article-8326813/White-House-official-tells-Britain-Dont-hand-China-control-electricity.html>
12. BANNG 26th May 2020 <https://www.banng.info/>
13. Le Monde 26th May 2020 https://www.lemonde.fr/economie/article/2020/05/26/nucleaire-nouvelle-procedure-contre-l-epr-de-flamanville_6040764_3234.html
14. Reuters 25th May 2020 <https://uk.reuters.com/article/uk-finland-nuclear-construction/finlands-new-nuclear-reactor-hit-by-valve-leak-idUKKBN2311TF>
15. Daily Post 29th May 2020 <https://www.dailypost.co.uk/news/north-wales-news/real-enthusiasm-new-nuclear-power-18327278>

2 Hunterston

The safety case for Hunterston B Reactor 3 has been submitted to the ONR for its assessment. To support time for this assessment EDF has revised its latest expectation for its return to service to 13 July 2020 – previously the return was expected on 1 June. Reactor 4 came offline in mid-December, following four-months of operation. EDF now aims to return the unit to service on 27 July 2020 – previously it was expected to return on 15 June. ONR says it does not currently have a timescale for making a decision on Reactor 3. (NB. ONR received the safety case for Reactor 4 on 29th May but is currently focussing its attention on the Reactor 3 case. The results of the core inspection of reactor 4 carried out in January 2020 are included in the safety case.)

EDF is to submit scoping requests to North Ayrshire Council ahead of planning applications for waste facilities to support future decommissioning activities. As part of the preparations for decommissioning, EDF is planning to build a new intermediate level waste (ILW) store and two waste processing facilities on the B site with applications for planning permission submitted by early 2021, following a period of consultation with a range of stakeholders.

A final decision has still to be taken on the best route for storage of ILW from Hunterston B and EDF is still looking at a range of options including the shared use of the Hunterston A ILW store. But to ensure the site can move into de-fuelling with no unnecessary downtime, applications are being lodged now to speed up the process should EDF decide to build a new store.

Discussions are underway between BEIS, EDF Energy and the NDA, to examine the future decommissioning of the AGR fleet when it is time for the reactors to come off line. As yet no decisions have been made, and those discussions continue.

There has been some speculation that the rush to plan for new ILW facilities could indicate that EDF now accepts that Hunterston B may need to close before 2023.

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1. EDF Energy 19th May 2020 <https://www.edfenergy.com/media-centre/news-releases/letter-hunterston-site-stakeholder-group-19-may-2020>

3 Torness

Following our report in April that the Office for Nuclear Regulation (ONR) had published its Project Assessment Report (PAR) (1) which allows Torness nuclear power station (and Heysham 2) to continue operating for the period 2020 – 2030, *the Ferret* website reported that cracks in the graphite core are now expected to start appearing six years sooner than previously thought (2)

ONR said that the cracking could cause debris to inhibit vital cooling of highly radioactive reactor fuel beginning as soon as 2022 rather than 2028. It said Torness will be able to keep operating until 2030 – but only if inspections to check for cracks are intensified. ONR promises to “robustly challenge” the plant’s operators, EDF Energy, to ensure that it “remains safe”.

Campaigners fear that Torness will become increasingly unsafe, and warn it may have to close down sooner than expected. EDF, however, insists that the station will keep generating electricity safely until 2030. NFLA has called on ONR to keep Torness under close scrutiny. *“These safety reservations surrounding the Torness periodic safety review need to be cleared up as soon as possible,”* said the group’s Scotland convenor, SNP Glasgow councillor, Feargal Dalton. *“Whilst EDF is having to spend large resources trying to persuade the regulator that it is safe to restart the Hunterston B reactors, this report emphasises that similar issues with ageing are likely to arise at Torness over coming years.”* Councils would press ONR *“to forensically scrutinise what look like significant weaknesses in the EDF safety case,”* Dalton added. *“In the meantime, the Scottish Government should start*

discussions about a 'just transition' for the workers at both Hunterston and Torness so that Scotland can move to a safe, sustainable and non-nuclear economy as quickly as possible."

ONR made nine recommendations to remedy major "safety shortfalls" at Torness and Heysham 2 and raised 41 minor matters with EDF. These include "weaknesses" in health reviews, as well as issues with "structural integrity", "corrosion management" and "cyber security".

Although no cracks have yet been detected, ONR inspectors pointed out there was a significant difference in the design of Torness and Heysham 2 compared to that of Hunterston. The newer stations have seal rings between the graphite bricks that make up the reactor core. ONR quoted EDF saying that there could be "*a systematic failure*" of the seal rings after cracking. "*This could lead to debris with the potential to challenge the ability to move or adequately cool fuel,*" said ONR. "***If keyway root cracking predictions are realised, then the safety case is unlikely to remain robust for the next ten years periodic safety review period,***" observed ONR inspectors.

It could, in fact, be cheaper to build new renewable capacity rather than continue to operate these ageing reactors. This could soon be the case with Torness, especially if it has to keep being turned on and off to inspect the graphite core. Scotland clearly needs to be prepared for the possibility that Torness might be forced to close not long after 2022.

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1. Periodic Safety Review: Assessment of the Heysham 2 and Torness third periodic safety review (PSR3) <http://www.onr.org.uk/pars/2020/heysham-2-torness-19-012.pdf>
 2. The Ferret 6th May 2020 <https://theferret.scot/torness-nuclear-reactors-cracking-2022/>

4 Dounreay

A new leak of radioactive material triggered a fresh nuclear safety concern at Dounreay. A mixture containing uranium radionuclides leaked from a transport drum storage area. Although the quantity didn't meet the criteria for informing government ministers the Office for Nuclear Regulation (ONR), will carry out an investigation

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1. Press and Journal 28th May 2020 <https://www.pressandjournal.co.uk/fp/news/2221691/revealed-radiation-leaked-from-storage-drum-at-dounreay-earlier-this-year/>

5 100% Renewables

A report, published by a new campaign group – 100% Renewables UK - investigates the extent to which the operation of nuclear power plants in Scotland can be blamed for the large amounts spent on compensating windfarms when they are asked by the National Grid to shut down production.

These shutdowns are done in order to stop the electricity network from being overloaded. These 'constraint payments' are an important issue because sums are large and are borne by electricity consumers.

The practice of paying windfarms to cut back their energy production exists for several reasons. These are principally because of the inability of nuclear facilities to operate flexibly, because the electricity network in Scotland is currently unable to support rapidly increasing amounts of wind power, and because enhancements of electricity interconnections with other countries have not kept pace with these developments or have broken down.

The report found that, in 2017, 94% of the wind energy that was turned off could have been generated had nuclear power plants not been operating. In 2019, 77% of windfarm output which was turned off (constrained) could have been generated had the nuclear power plants not been operating. These results indicate a direct relationship between nuclear power and the payments made to windfarms to turn off. Essentially, wind power receives the blame because it would cost a lot more to induce the nuclear power stations to reduce their generation. Dr David Toke, author of the report said: *"It is wrong for wind power to be 'blamed' by the media for these compensation payments. Inflexible operation of nuclear power plants is switching off wind turbines. Essentially, cheaper electricity production from windfarms is being turned off in order to protect production from nuclear power plants whose production is much more expensive to manage. These nuclear plants either cannot or will not help to balance the grid in these circumstances. This undermines renewable energy and increases the costs to the consumer of operating windfarms."* (1)

Meanwhile, as Scotland is about to hit its 100% renewable electricity target, FoE Scotland Director Richard Dixon, says it must go further. The target to generate 100% of electricity used in Scotland from renewable sources by the end of this year will be missed, but should be achieved soon after with several big schemes in development.

The UK has just experienced over a month when no coal was burned to make electricity, the first time since coal-fired power stations were built. When Longannet power station's turbines stopped spinning in 2016 that was the end of 115 years of coal burning for power in Scotland. The only major fossil-fuel power station left in Scotland, the gas-fired station at Peterhead, is running at much-reduced capacity and likely to close in the next few years.

We have two nuclear stations, but the two reactors at Hunterston have hardly run in the last two years because of cracking in their cores and are currently shut down, quite possibly never to start again. So, when we reach the 100% target we will have the capacity to make all the electricity we need but some days we will be making a thumping great excess and exporting it to England and Northern Ireland, and some days we will be importing power through those same connections. There are plans for a connection to Norway, to create an even more balanced system by linking to their huge hydro-power resources. We shouldn't stop when we reach the 100%, we should power straight through, and invest in both more renewables and more energy storage in a big way, so that on every day we are making all of our electricity from wind, wave, solar, tidal and hydro-power, and on most days we are making money by selling the surplus to the rest of the UK and beyond. FoE will be talking to the manifesto writers for the 2021 Scottish election to see who has a strong vision for the next step in Scotland's energy transition.

1. How nuclear power undermines renewable energy - The truth about wind power compensation payments, 8th June 2020 <https://100percentrenewableuk.org/how-nuclear-power-undermines-renewable-energy-the-truth-about-wind-power-compensation-payments>
2. Scotsman 25th May 2020 <https://www.scotsman.com/news/opinion/columnists/scotland-about-hit-its-100-renewable-electricity-target-it-must-go-further-richard-dixon-2864016>

6 Climate Change Plan

The Scottish Government's updated climate change action plan won't be published until the end of this year. It was due in April but it has been delayed by the coronavirus pandemic. Environment Secretary Roseanna Cunningham said there will need to be "*a bit of time to ensure the policies and proposals that we do put forward will reflect the new economic and social realities post-pandemic*". The new plan will need to be aligned with the post pandemic economic recovery strategy. (1)

Cunningham wrote to the Committee on Climate Change (CCC) to request its independent expert advice on the best way forward in these unprecedented circumstances and how the Climate Change update can contribute to a green recovery in Scotland. (2)

The CCC responded (to the Prime Minister and First Ministers in Scotland, Wales and Northern Ireland) by setting out six key principles to rebuild the nation following the pandemic whilst delivering a stronger, cleaner and more resilient economy. These are:

- **Use climate investments to support economic recovery and jobs.** The CCC has previously identified a detailed set of investments to reduce emissions and manage the social, environmental and economic impacts of climate change. Many are labour-intensive, spread across the UK and ready to roll out as part of a targeted and timely stimulus package.
- **Lead a shift towards positive, long-term behaviours.** The Government can lead the way to new social norms that benefit wellbeing, improve productivity and reduce emissions. This includes actions to support home-working, remote medical consultations and improve safety for cyclists.
- **Tackle the wider 'resilience deficit' on climate change.** Strong policies are needed to reduce the UK's vulnerability to the destructive risks of climate change and to avoid a disorderly transition to Net Zero. They must be implemented alongside the response to COVID-19 and will bring benefits to health, well-being and national security.
- **Embed fairness as a core principle.** The benefits of acting on climate change must be shared widely, and the costs must not burden those who are least able to pay, or whose livelihoods are most at risk as the economy changes. Lost or threatened jobs of today should be replaced by those created by the new, resilient economy.
- **Ensure the recovery does not lock-in greenhouse gas emissions or increased risk.** As it kick-starts the economy, the Government should avoid locking-in higher

emissions or increased vulnerability to climate change in the longer-term. Support for carbon-intensive sectors should be contingent on them taking real and lasting action on climate change, and all new investments need to be resilient to future climate risks.

- **Strengthen incentives to reduce emissions when considering tax changes.** Revenue could be raised by setting or raising carbon prices for sectors of the economy which do not bear the full costs of emitting greenhouse gases. Low global oil prices provide an opportunity to increase carbon taxes without hurting consumers.

Reducing greenhouse gas emissions and adapting to climate change are integral to the UK's recovery package, the Committee says. Immediate steps are needed to support reskilling, retraining and research; to build a climate-resilient economy; to scale up housing retrofits and build new homes that are fit for the future; to invest in low-carbon, resilient infrastructure such as improved broadband instead of new roads; to make it easy for people to work remotely, walk and cycle and to expand tree planting, peatland restoration, green spaces and green infrastructure. (3)

Chris Stark, CEO of the CCC told a recent Green Alliance Webinar that we are seeing the impacts of a disorderly transition to lower carbon emissions play out, but what we need is an orderly transition. (4) As reported in the NFLA's Covid-19 Briefing (5) the climate website Carbon Brief (6) suggests the coronavirus pandemic could cause emissions cuts globally this year in the region of around 4% of the global total in 2019. But this would not come close to the 7.6% fall we need to achieve every year in order to limit warming to less than 1.5C above pre-industrial temperatures. (7) To put it another way, atmospheric carbon levels are still expected to increase this year, and rising CO2 concentrations will only stabilise once annual emissions reach net-zero.

Chris Stark believes the UK Government is in a "better position" than most other countries because it has been preparing for an infrastructure overhaul as part of the National Infrastructure Strategy (NIS) which was delayed before the Covid-19 outbreak. The 30-year strategy outlines how £100bn will be spent over this parliament. Investments will be used to "level up" regions and outline spending projections for transport and digital infrastructure. Electric vehicles (EVs) and renewables infrastructure are mooted to be big aspects of the NIS. Stark believes some aspects of the NIS may have to be "tailored" to account for improved resiliency and adaptation to respond to future disruptions, many of which could be caused by climate change. He also noted that the £28bn set aside for new road developments could be revisited if people continue to reduce travel and work remotely after the lockdown and spending on digital infrastructure and connectivity may be of better use. (8)

The CCC has said it will refocus its annual Progress Report to the Westminster Parliament in June to include advice on supporting a resilient recovery following the pandemic. Advice to the UK Government on the level of the Sixth Carbon Budget (2033-2037) will be published in December 2020, instead of in September. This provides additional time to complete the analysis and reflect on the impacts of the crisis. (9)

- Dr Richard Dixon. Director of FoE Scotland reminds us that the National Planning Framework will shape Scotland for next decade, and we should all have our say on what's in it. A decade

ago, a planning application was submitted for a large coal-fired power station at Hunterston. At the public inquiry opponents could not express their concern about the power station because it was already deemed to be acceptable in the NPF. (10)

- COP26, which it was thought would be reconvened within the first three months of 2021, after having been postponed from Nov 2020, has been moved again to Nov 2021. (11)

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1. The National 29th April 2020 <https://www.thenational.scot/news/18414491.climate-change-action-plan-delayed-due-cornavirus-pandemic/>
 2. Scottish Government 1st April 2020 <https://www.gov.scot/news/climate-change-plan-update/>
 3. CCC 6th May 2020 <https://www.theccc.org.uk/2020/05/06/take-urgent-action-on-six-key-principles-for-a-resilient-recovery/>
 4. Green Alliance 21st April 2020 https://www.green-alliance.org.uk/webinar_copvid19_cop26.php
 5. Covid-19, the climate emergency and the need for a 'green' stimulus in its aftermath, NFLA 5th May 2020 https://www.nuclearpolicy.info/wp/wp-content/uploads/2020/05/A313_NB200_Covid_19_and_aftermath.pdf
 6. Carbon Brief 9th April 2020 <https://www.carbonbrief.org/analysis-coronavirus-set-to-cause-largest-ever-annual-fall-in-co2-emissions>
 7. New Scientist 26th November 2019 <https://www.newscientist.com/article/2224539-un-report-reveals-how-hard-it-will-be-to-meet-climate-change-targets/>
 8. Edie 22nd April 2020 <https://www.edie.net/news/11/CCC-boss--Green-and-resilient-economic-recovery-can-push-UK-towards-net-zero-target/>
 9. Committee on Climate Change 14th April 2020 <https://www.theccc.org.uk/2020/04/14/ccc-to-amend-2020-work-programme/>
 10. Scotsman 4th May 2020 <https://www.scotsman.com/news/opinion/columnists/national-planning-framework-will-shape-scotland-next-decade-dont-miss-chance-have-your-say-dr-richard-dixon-2841994>
 11. Guardian 26th May 2020 <https://www.theguardian.com/environment/2020/may/26/cop26-climate-talks-in-glasgow-likely-to-be-delayed-again> and Independent 26th May 2020 <https://www.independent.co.uk/environment/un-cop26-united-nations-climate-talks-when-date-coronavirus-a9533821.html>

7 Scotland's Citizens Assembly on Climate Change

Last year, more than 2,500 people from across Scotland engaged in the Big Climate Conversation over six-months to discuss Scotland's response to tackling the global climate emergency. Conversations took place across the whole country in a variety of formats, with events held in over 80% of local authority areas. Participants had the chance to discuss with others the national and societal changes required to transition to a net-zero emissions society. This showed widespread

support for home energy efficiency improvements, increased use of public transport and transitioning to a more circular economy. (1) These findings will directly inform the update to the Scottish Government's current Climate Change Plan and the development of a new Public Engagement Strategy for climate change.

The Scottish Government has now committed to **establish a Climate Citizens' Assembly of Scotland later this year**. to build on the important insights generated through The Big Climate Conversation to better understand public views on how to respond to the global climate emergency. (2)

UK Climate Assembly

The UK National Climate Assembly - set up by a number of parliamentary Select Committees last year - held its last meeting over the week-end of 16th and 17th May. 110 randomly selected members of the public have been meeting over the last few months, firstly in person and more recently by video call, to discuss how Britain can meet its net zero target. Assembly members heard from a raft of climate policy experts, covering energy, transport and agriculture, as well as hard to decarbonise sectors such as heating, heavy industry, shipping, and aviation. (3)

In their "Reasons to be Cheerful" podcast, Ed Miliband and Geoff Lloyd talk to one of the participants and to Becky Willis – one of the experts advising the Assembly. Becky is also author of a book – "Too Hot to Handle" – about how democracy will have to change to implement the changes we need. They also spoke to Pete Bryant who has run over 35 citizens' juries over the last 15 years on a range of topics.

Ibrahim, who is a GP, was one of the participants, said the experience has changed the way he thinks and it has made him start talking to others about climate. He thinks citizens' assemblies are the way forward for democracy. The value is that people with different views can understand each other and overcome their differences.

Becky Willis worked to make sure the Assembly had balanced and impartial evidence. The most striking thing for her was the responsibility the participants felt and how seriously they took the process. It gave her a faith in people's ability to think things through and come up with solutions. It is very easy to come up with reasons why climate is really difficult for politics. You can have one of two responses either you think because it's difficult you will need to ignore and bypass democracy or you can decide we need to do democracy better.

At least implicitly there has been some bypassing of democracy going on. But if we agree that taking action is going to be improving people's lives then it is best that we hear from them how best to do that. We should be doing more and better democracy as part of the way we tackle the climate crisis.

There are local processes going on all over the country. Deliberation with the public should be part of the normal way of running democracy.

Peter Bryant facilitated the Leeds Climate Jury. 4,000 letters were sent out. 123 people replied and out of those 25 people were chosen to represent different sectors of the population across Leeds City Region. Eight Thursday evenings and 1 full day were spent deliberating, producing recommendations and a statement.

Bryant's experience of other juries is that people involved often go on to do other things afterwards. For instance, a Blackburn jury on obesity went on to set up a food co-op afterwards. The Leeds Assembly recommended:

1. Private cars should be a last resort and the bus company should be brought back under public control;
2. Retrofitting houses led by a local social enterprise should be a priority;
3. The Council should set up an investment fund to pay for these recommendations;
4. The Airport expansion should be stopped.

Ed Miliband commented that Covid-19 has created a space to think about a 'new normal'. We should be using citizens' juries across the country. People, if they are properly informed and have to come to a consensus, are really smart. It is a really exciting prospect for the future of democracy in this country. (4)

Writing in *The Guardian* Rebecca Willis talks about politicians who are oddly reluctant to talk about how we might actually meet climate targets and how politicians find it difficult to talk openly about the need to transition away from fossil fuels. There is very little honest debate about the major changes to our economy and society that will be needed. We're all in favour of climate action, but we haven't yet had an honest conversation about the power and the vested interests involved, or the choices that will have to be made if we are to achieve significant reductions in emissions. One anthropologist called this type of inaction in the face of overwhelming evidence "*socially organised denial*". Study after study shows that meeting climate goals means phasing out the extraction and use of oil, coal and gas – yet no mainstream political party has a coherent plan to do this. (5)

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1. Big Climate Conversation, Scottish Government 30th Jan 2020 <https://www.gov.scot/publications/report-findings-big-climate-conversation/>
 2. Scottish Government 28th Jan 2020 <https://www.gov.scot/news/climate-change-plan/>
 3. Business Green 15th May 2020 <https://www.businessgreen.com/news/4015240/climate-assembly-uk-consider-covid-19-impacts-final-net-zero-policy-discussions>
 4. Reasons to be Cheerful Podcast 17th May 2020 https://podcasts.google.com/feed/aHR0cHM6Ly9yc3MuYWNhc3QuY29tL3JlYXNvbnN0b2JlY2hIZXJmdWw/episode/ODE2OTA5ZjQtOTc5Mi00MTUxLWJhZDgtNTNjNTg5N2M2Y2Ew?ved=0CAcQ38oDahcKEwig-K7-rL_pAhUAAAAAHQAAAAQAQ
 5. Guardian 21st May 2020 <https://www.theguardian.com/environment/2020/may/21/i-dont-want-to-be-seen-as-a-zealot-what-mps-really-think-about-the-climate-crisis>

8 Green Recovery Notes

There appears to be growing public support for the idea of putting the environment at the heart of the post-Covid-19 economy recovery plans. YouGov polling found that that 62% of the UK

population are positive about seeing the economy at the heart of post-Covid economic recovery. And this includes 62% of Conservative voters, and there doesn't seem to be much difference across social classes either. (1)

Surveys of more than 200 of the world's most senior economists and economic officials, suggests that spending money on climate-friendly "green" policy initiatives could not only help shift the world closer to a net-zero emissions pathway, but could also offer the best economic returns for government spending. (2) Recovery packages that seek synergies between climate and economic goals have better prospects for increasing national wealth, according to a group of academic economists led by Oxford University's Cameron Hepburn (3) Global analyst firm McKinsey warns this is a "use or lose it moment" for the global economy and the battle against climate change. It is calling for low-carbon stimulus spending to spur economic recovery and job creation. (4)

The IPPR Environmental Justice Commission - a commission of cross-party MPs chaired by Green Caroline Lucas MP and former Conservative MP Laura Sandys – has published a detailed blueprint for a green recovery from Covid-19 recommends that £30bn should be spent on a climate-focused recovery with an initial down payment of £5bn paid into a national "just transition fund" that would support the regions likely to be worst affected by the shift away from fossil fuels. (5)

- Mayors from many of the world's leading cities have warned there can be no return to "business as usual" in the aftermath of the coronavirus crisis if humanity is to escape catastrophic climate breakdown. City leaders representing more than 750 million people have published a "statement of principles", which commits them to putting greater equality and climate resilience at the heart of their recovery plans. They agreed to coordinate efforts to map out plans to support a low-carbon, sustainable recovery from the crisis. (6)
- Former Bank of England Governor, Mark Carney says every financial decision should take climate into account; every company, every sector, every pension fund should have a net zero plan which it has disclosed. When countries are designing their recovery strategies, they would do well to use this new financial framework that is centred around the transition to net zero because that will amplify the effectiveness. (7)
- Andrew Wilson, the former RBS economist and SNP MP (Central Scotland until 2003), has called for the creation of 'an Intergenerational Renewal Fund'. He said the devolution settlement as it stands cannot cope with the economics of Covid-19 nor the hard Brexit that could be imminent. (8) The proposal to issue government bonds was backed by former chancellor Alistair Darling. He says that he could support the principle of changing the devolution settlement to unlock extra funding which could be used for projects including overhauling home heating. (9)
- A new report by the Trades Union Congress (TUC) highlights a green recovery plan which would take better advantage of Scotland's green energy revolution, which is increasingly being placed in the hands of overseas firms, and an upgrade to our existing housing stock to be become energy-efficient. The Scottish Government's low carbon strategy described the large-scale development of offshore wind as representing the "biggest opportunity for sustainable economic growth in Scotland for a generation" with Scotland having an estimated 25% of Europe's offshore wind potential. But in February, it emerged that it had in

fact created just six per cent of the 28,000 direct jobs predicted. Official estimates stated that there were just 1,700 full-time jobs in the offshore wind sector in Scotland. (10)

- SSE wants Boris Johnson to “green light” billions of pounds of private investment in low carbon infrastructure (11) including 75GW of offshore wind projects, carbon capture and storage and hydrogen. (12)
- More than 80 organisations – including groups working on children’s rights, health, housing, environment, international development and peace, trade unions and churches - have written to Nicola Sturgeon laying out five principles for a green recovery covering supporting essential public services, redistributing wealth to protect those on low incomes, investing in reducing climate change emissions and enhancing nature, strengthening democracy and human rights protections, and playing a strong role in international responses to Covid-19 and climate change. Some of the specific policies which get a mention include increasing public ownership of public services, creating zero-carbon social housing, providing adequate incomes for all including paying a minimum of the real living wage for public sector workers, putting fundamental human rights into Scots law and creating a just transition away from fossil fuels. The groups also call for the Scottish Government to use the UN climate talks in Glasgow next year to push for rapid reductions of climate emissions around the world, and support global calls to cancel the debts of poor countries. (13) Friends of the Earth Scotland is asking people to sign-up in support of the letter. (14)
- Common Weal – the “think and do tank” bringing together Scottish social, economic and environmental campaigners, has published an agenda for change called ‘Resilience Economics’. It is a green prospectus, in favour of a circular, recycling economy, with more sharing (think car clubs, for instance) requiring less acquisition. With natural resources in abundance, from wind power to timber, quality food and its education and skills base, *“there is probably no country in Europe better able to move swiftly to a resilient economy approach or deliver better outcomes for its citizens than Scotland”*. (15)

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14. <https://act.foe.scot/ask-nicola-sturgeon-help-us-build-back-better-coronavirus>
15. Resilience Economics 3rd June 2020 <https://commonweal.scot/sites/default/files/2020-06/Resilience%20Economics.pdf>

9 Hydrogen

JCB heir Jo Bamford, who is the new owner of Wright Bus, plans for the rollout of 3,000 hydrogen buses in the UK by 2024, all built in Ballymena. He has orders from London and Aberdeen. (1) Bamford is in “active stages of proposals” to build a hydrogen plant in Glasgow that it hopes could see fuel cell buses operating in the city in time for the rearranged COP26 climate change conference. He is also lobbying for hydrogen buses in Edinburgh. (2)

Meanwhile, Logan Energy, which recently opened the first public hydrogen refuelling station in Scotland’s central belt in Wallyford, has been selected to supply and maintain three trucks which carry compressed hydrogen supplying buses. The tube trailers will be used for the transportation of green hydrogen produced from an electrolyser located at a wind farm in County Antrim to Belfast’s main public transport depot. Logan Energy is also developing plans to produce green hydrogen through electrolysis powered by solar power at its East Lothian base. (3)

Jacob Young MP, chair of the Hydrogen All Party Parliamentary Group, has written to Transport Secretary Grant Shapps to complain about plans for an “electric bus town”, which has seen councils bidding for a £50 million grant to fund new battery electric buses. The group believes it is unfair “*that a British designed and built bus is not eligible to be bought by a local council under this Government scheme.*” (4)

- Meanwhile, in a first for Scotland, plans for hydrogen-powered homes on the outskirts of Aberdeen have been approved by councillors. The proposals by Cognito Oak – a partnership between Henry Boot Developments and Wraith Real Estate – have been recommended for approval by councillors in Aberdeen, subject to conditions. The project will incorporate

micro-CHP fuel cell technology into 30 homes as part of a pilot scheme, which will test the performance of the fuel cells in residential use. (5)

- Around 300 homes in Fife could soon have their heating and cooking powered by green hydrogen produced from renewable electricity under proposals for "the world's first green hydrogen-to-homes network" unveiled by SGN. The gas distribution network firm is seeking approval from energy regulator Ofgem to fit an initial 300 homes with hydrogen infrastructure in Levenmouth, Fife, with construction earmarked to begin in late 2020 or early 2021, before estimated completion "within two to three years". Dubbed H100 Fife, the project has passed the initial screening submission process for Ofgem's annual Network Innovation Competition, and SDG said was now preparing to submit its full bid for funding this summer. If the bid is successful, SGN - which manages the gas network for 5.9 million homes and businesses across Scotland and the South of England - said it would have the green light to build a 100 per cent zero carbon hydrogen network, with the H₂ gas produced via electrolysis powered by an offshore wind turbine. H100's proposed hydrogen production, storage and distribution network would run alongside the current fossil fuel gas grid system, which the firm said would demonstrate "every aspect of a hydrogen-to-homes, end-to-end system to support plans for large scale rollout in future". (6)
- Jo Bamford is chair of another green energy company – Ryse – which has submitted a planning application to build what it claims would be the "*the UK's biggest electrolyser*" at Herne Bay in Kent in order to supply hydrogen-powered buses in London. The proposed facility would be capable of producing up to 10 tonnes of hydrogen per day using excess electricity from wind farms in the English Channel, with Ryse also drawing up plans for at least four further electrolysers in Aberdeen, Northern Ireland, Runcorn and South Wales. (7)
- The UK Parliament Environmental Audit Committee is looking at hydrogen production and distribution. Hydrogen has potential to fuel some industrial processes, HGVs, ships, and to produce electricity and heating in peak periods. Significant development in Carbon Capture and Storage technology will be necessary, if methods such as steam methane reforming, are to be used to scale up hydrogen production. **Small Modular Reactors** are being investigated as another possible way to produce hydrogen. The potential for widespread installation of hydrogen boilers and gas distribution networks to be repurposed to hydrogen offer possible ways to contribute to net zero emissions. Related decisions over the balance between electrification and hydrogen in decarbonising heat require exploration to find the most cost-effective transition to a low-carbon economy. In 2018 around 95% of the global production of hydrogen was generated from fossil fuels. There remain significant hurdles to commercialising clean and sustainable means of producing, storing and using hydrogen and so a realistic assessment of the hydrogen option is necessary. One of the questions the Committee asks is "*What support does the sector require to keep pace with the most cutting-edge innovations, such as using Small Modular Reactors for hydrogen production?*" The committee is accepting evidence until Friday 19 June 2020. (8)

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3. Herald 5th May 2020 https://www.heraldscotland.com/business_hq/18425961.edinburgh-clean-energy-company-six-figure-hydrogen-fuel-delivery-deal/
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7. Business Green 18th May 2020 <https://www.businessgreen.com/news/4015331/world-sgn-launches-bid-300-green-hydrogen-homes-project-fife>
8. Environmental Audit Committee <https://committees.parliament.uk/work/295/technological-innovations-and-climate-change-hydrogen/> and Edie 7th May 2020 <https://www.edie.net/news/11/MPs-to-probe-role-of-hydrogen-in-net-zero-transition/>

10 Energy Storage Notes

- Gravitricity - an Edinburgh company - is planning to use old mine shafts as batteries to store renewable energy. Initially it plans to build a demonstration project showcasing the technology in Leith. Using large weights on cables attached to winches surplus electricity would be used to lift the weight to the top of the mine shaft. Then when demand is outstripping supply the weight can be lowered, with the movement of the winches producing power. The company estimates that the cost of its technology would be lower than large-scale lithium ion batteries. The company has secured more than £600,000 of funding from Innovate UK, a public agency, two years ago and has raised £750,000 through a crowdfunding drive. A £1 million demonstration would involve using a tower in Leith rather than a mineshaft. It has signed a land rental agreement with Forth Ports and work is scheduled to begin in October, which could mean that the equipment is operating by the end of the year. (1)
- Edinburgh-based flexible energy specialist Flexitricity has partnered with Gresham House Energy Storage Fund to optimise a 50MW / 75MWh battery storage site in Yorkshire. The lithium-ion battery storage site will be monitored from Flexitricity's 24/7 control room in Edinburgh and Flexitricity will dynamically move the asset between different markets. It will be traded in the wholesale markets and with National Grid ESO in the balancing mechanism – one of the most important tools National Grid ESO uses to balance electricity supply and demand in real-time. (2)
- A project is underway to use excess wind generation to heat Highlands homes. Scottish and Southern Electricity Networks, National Grid ESO, plus partners Delta-EE, Everoze and PassivSystems, think up to 380,000 households could benefit. The 4D Heat pilot will target

communities north of the Highlands that are off the gas grid. National Grid ESO spends tens of millions of pounds curtailing output from wind farms each year. It does this to keep the grid stable. With more wind coming on to the system, there will be more periods of excess generation. Using excess power to heat homes helps solve that challenge. If the heat infrastructure is also made smart, it can become an additional source of flexibility for local and national system operators. (3)

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 2. Energy Voice 15th May 2020 <https://www.energyvoice.com/otherenergy/240736/uks-largest-battery-to-help-keep-the-nations-lights-on/>
 3. The Energyst 29th May 2020 <https://theenergyst.com/national-grid-and-sse-to-harness-surplus-wind-to-heat-off-grid-homes/>

11 Renewables Notes

- A wastewater treatment facility between North Queensferry and Rosyth is the latest Scottish Water facility to be fitted with onsite solar technology, as the water company progresses towards its net-zero carbon target for 2040. The Wastewater Treatment Works has had a new 231kW solar PV system installed by Scottish Water's commercial subsidiary Scottish Water Horizons, which invested £300,000 in the 784-panel system. The system will account for 10% of the electricity required to power the facility, which serves 81,000 customers in Dunfermline, Inverkeithing, Dalgety Bay, Crossgates, Rosyth and Kingseat. The Scottish Government has set the water company a target to generate or host three times the energy it uses by 2030, as part of the 2040 net-zero ambition. As of last year, Scottish Water is generating double the amount of renewable energy compared to its electricity consumption. (1)
- Scottish Water has now launched a tender for solar projects up to 5 MW. The installations can be a combination of ground-mounted PV systems and rooftop arrays. "The contractor should be capable of providing installation of energy storage equipment in front of or behind the meter, either as a standalone project or as part of a combined onsite generation scheme with the aforementioned solar projects," the company said. The value of the contract to be awarded to the selected developer is £45 million. The tender also includes the development of wind and hydropower facilities. (2)
- The proposed SSE Viking Onshore wind farm in Shetland has received a significant shot in the arm after Ofgem said it is ready to rubber stamp proposals for a 600 megawatt (MW) subsea electricity transmission link grid connection with the mainland Scotland. But the regulator added that its sign off on the proposal is contingent on developer SSE Renewables providing assurances on the go-ahead of its 103-turbine wind farm, which lost out on a UK Government subsidy bid in September. Ofgem said it needs "sufficient evidence" on the likelihood of plans by the end of the year. (3)

- A gas-fired power station in Lerwick has been proposed as an “island-friendly” alternative to the Viking Energy wind farm and an interconnector. Denmark-based power station specialist BWSC and Scandinavian LNG (liquefied natural gas) company Gasnor, a Shell subsidiary, are behind the proposal. They have raised their proposal in response to Ofgem’s consultation on the proposed 600MW transmission link between Shetland and Caithness, which the energy regulator is minded to approve if Viking Energy goes ahead. They say that the “roughly 50MW” gas fired heat and power station in Lerwick – which would utilise LNG imported into the isles – would cost a “small fraction” of Viking and the proposed cable. (4)
- Scottish Power plans to “repower” Scotland’s oldest commercial windfarm at Hagshaw Hill near Lanark, as part of a £150m scheme to develop a clean energy cluster in central Scotland capable of supplying 100,000 homes with green electricity. The windfarm cluster is expected to create 600 jobs at its peak, and 280 long-term jobs, to help the UK emerge from the worst economic downturn in 300 years while taking steps to meet its climate goals. The company’s plan to develop 1,000MW of onshore wind power and battery storage. (5)
- The approval of a Western Isles power link could unlock around £2 billion in investment and create “hundreds” of jobs for the region, a local councillor has claimed. Comhairle’s lead on sustainable development, Councillor Donald Crichton, has called for the transmission link to be rubber stamped so that the Western Isles is able to contribute up to 500 megawatts (MW) of electricity to mainland Scotland. (6)

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 2. PV Magazine 5th June 2020 <https://www.pv-magazine.com/2020/06/05/scottish-water-launches-tender-for-solar-projects-up-to-5-mw/>
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12 Climate Emergency

Edinburgh Climate Commission was established in February 2020, bringing together key organisations and actors from across the city and from the private, public and third sectors. The Commission aims to accelerate action and impact on climate change in the city, and provides independent, expert and authoritative advice to enable and support the best choices being made for Edinburgh. The Commission will aim to catalyse action, challenge decision makers in the city and

convene stakeholders critical to the accelerated response we must see if we are to meet our 2030 target. It is co-sponsored by the Edinburgh Centre for Carbon Innovation at the University of Edinburgh and City of Edinburgh Council. In its first year, the Commission aims to address key challenges in the city. The Commission will also act as a forum where organisations can exchange ideas, research findings, information and best practice on carbon reduction and climate resilience. The Commission will feed into the democratic process through City of Edinburgh Council, producing reports and position papers on key issues in the city. (1)

The Commission has written an open letter to all who will play a part in shaping Edinburgh's recovery from Covid-19 and our response to the climate emergency. It said the decisions taken in the coming weeks and months will determine if we lock ourselves into a climate chaos pathway or instead build back to a fairer society that releases the multiple public benefits of a net zero economy. The Commission will publish a short paper by the end of June setting out key recommendations that if adopted will help not only accelerate our climate response but also create good jobs, improve public health, strengthen the resilience of our city and attract investment. In advance of publishing this report the Commission presents a set of principles that should guide our thinking. They are:

1. GO FASTER: Accelerate the transition to net zero; lock in carbon reductions & low carbon behaviours; lock out a rollback to business-as-usual;
2. DO BETTER: Measure what matters; judge success against more than economic indicators; include biodiversity, wellbeing and carbon reductions;
3. BUILD STRONGER: Unleash potential of local communities & producers; showcase innovation and positive adaptation; empower everyone to play their part in building a city resilient to future crises;
4. THINK BIGGER: Covid-19 has broken the belief that big change can't be done. The scale of our ambition, the breadth of our imagination; our commitment to collaborate and our willingness to embrace change must match the challenge of achieving net zero carbon emissions;
5. BE BOLDER: Use the voice as the capital of Scotland, to set the pace for climate action ahead of COP26; recognise the moral limits of markets and lead the debate on delivering a sustainable future. (2)

A plan which will position Aberdeen as a climate positive city while helping to lead the world on the rapid shift to a net-zero future and support the global energy transition by leveraging its unique assets and capabilities has been approved. Members of Aberdeen City Council's urgent business committee unanimously agreed the Net Zero City Vision paper which aims to deliver both environmental and economic benefits to the city. The plan positions Aberdeen as having to respond, as a city and place, to the environmental imperative and also considers its role as a world leader in the energy sector as an economic driver for the city, region, Scotland and the UK. (3)

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2. Edinburgh Climate Commission 21st May 2020 <https://www.edinburghclimate.org.uk/news/edinburgh-climate-commission-publishes-principles-green-recovery>
3. Scottish Construction Now 11th May 2020 <https://www.scottishconstructionnow.com/article/aberdeen-agrees-net-zero-vision>

13 Renewable Heat

The UK Government has outlined its intentions to replace the Renewable Heat Incentive (RHI), which will end in 2021, with a new Clean Heat Grant that will aim to help households and businesses decarbonise through technology and push the nation towards its net-zero target for 2050. A consultation had been launched to formalise the replacement scheme for the RHI. The Government is proposing a Clean Heat Grant that would commence in 2022, offering funding support of up to £4,000 for each household or business that integrates heating technologies such as heat pumps. An eligible list of technologies applicable for funding support will also be outlined. (1)

The lack of ambition is just staggering, says Dr Jan Rosenow at the Regulatory Assistance Project, an organisation dedicated to speeding up the clean energy transition. (2) At this rate it will take 800 years to do 10 million homes and 1500 years to hit the 2050 target. (3)

The Scottish Government has been promoting the uptake of the UK Government's Renewable Heat Incentive (RHI). As of August 2017, more than £203 million has been paid to Scottish accredited installations for both the domestic and non-domestic schemes, accounting for around 20% of renewable heat capacity generated under the UK-wide scheme, which is well above pro-rata. It is now analysing models for financing support for low-carbon heat once the RHI has ended. (4)

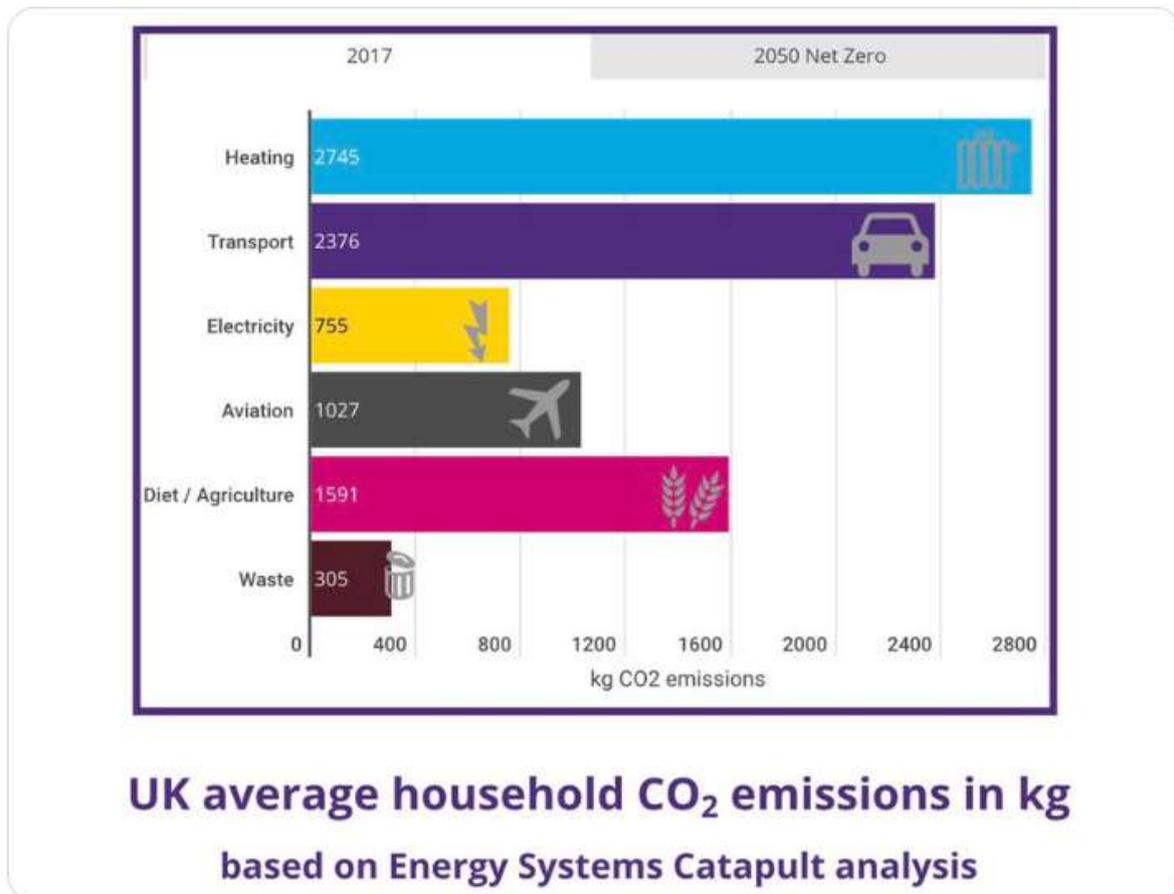
There has been a great deal of focus on the decarbonisation of the electricity system over the past decade. But heating in buildings is responsible for almost a third of total EU energy demand. When you add in process heat and cooling you see that almost half of energy use in the EU is required for heating and cooling. And most of that heat is met by burning fossil fuels. Without tackling heat you can't meet climate change objectives. Ask people what personal changes in their lifestyle might have the biggest impact on emissions and most will mention flying or eating meat. But, in fact, heating our homes creates the biggest emissions.

In order to decarbonise heating, notwithstanding the debate about hydrogen versus heat pumps, electrification is seen by many as a key strategy, at least in the next decade, so Dr. Jan Rosenow and Dr. Richard Lowes have come up with some pragmatic principles and policies for smart electrification. Their report is here: <https://www.raonline.org/knowledge-c>

There are only a few ways of generating low carbon heat. We are seeing some significant growth in solar thermal in certain northern European markets, in particular Denmark. This is often linked to inter-seasonal storage sites, and connected to district heating networks. Bio-energy is also a potential low carbon heating option, but has limited availability. Geothermal heat is another option, but again with limited availability. Hydrogen is also being promoted as an option, primarily by the

gas industry, but this is unlikely to deliver much over the next decade. So, electrification is an option which could deliver more or less immediately.

Heat pumps are an important technology as they can generate more useful heat than the energy that is inputted with electricity. Heat pumps can also be connected to heat networks, so are a versatile technology. Even basic electric heating – using resistive heating and immersion heaters – now has a similar emissions intensity (in terms of grams of CO₂ per kWh) compared to gas. However, if you use that electricity in heat pumps, you can cut carbon emissions per kWh by half or more.



There are 4 principles for the smart electrification of heat:

Put efficiency first. (UK houses lose heat more quickly than any other country in Western Europe);

Recognise the value of flexible heat (avoid using electricity for heat during peak hours – avoids unnecessary grid upgrades). District heating systems can offer the ability to store heat for several weeks. Flexible heat pumps can, for example, avoid the need to curtail wind turbines when wind electricity is higher than demand. The combination of wind power, system friendly or smart heat pump technology and thermal storage can almost completely mitigate the cost of the heat pump cost increases.

Understand the emission effects of changes in load. In future when we use electricity will be more important than how much we use.

Design tariffs to reward flexibility. (5)

Richard Lowes & Bridget Woodman point out that policy makers view heat decarbonisation as disruptive and uncertain with little upside for consumers – it is not viewed particularly positively. (6) There has been discussion about people being forced to rip out their gas boilers and replace them with more expensive electric heating. (7) This doesn't need to be the case. If heat decarbonisation can be done in a smart co-ordinated way, there can be significant consumer and system benefits in terms of carbon, comfort, cost and the overall transition. The lack of progress and uncertainty around heat decarbonisation is a key UK energy policy issue. The number of energy efficiency installations has significantly fallen since 2013 and there have been low levels of heat pump and heat network deployment with the majority of new homes still being connected to the gas grid.

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 2. Jan Rosenow 2nd May 2020 <https://twitter.com/janrosenow/status/1256540218263560194?s=09>
 3. New Scientist 11th May 2020 <https://www.newscientist.com/article/2242960-uk-plan-for-green-heating-will-take-1500-years-to-hit-2050-target/#ixzz6MCwO5IP5> more details about the proposals are here: <http://blogs.exeter.ac.uk/energy/2020/05/05/881/>
 4. See <https://www.gov.scot/policies/energy-efficiency/decarbonising-heat/>
 5. Leonardo Energy 7th May 2020 <https://www.youtube.com/watch?v=CWQMQLbafX4&feature=youtu.be>
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14 Transport

There has been huge coverage since the Coronavirus lockdown about the need to widen pavements, promote cycling and introduce pop-up cycle lanes in order to assist social distancing. The President of the AA, Edmund King, even told the BBC that anecdotal evidence suggests a permanent reduction in the demand for travel might be taking place because people have learned during the crisis to use home-working technology. The chancellor currently plans to spend £27bn to curb congestion on roads and £100bn on HS2 – but if demand falls, that may not be needed. Infrastructure funds might be better spent on broadband to support home working. (1) The Committee on Climate Change agrees that the economy would benefit if funds were re-directed from tarmac to fibre-optics. (2)

It's worth noting, however, that the Government published a document, entitled Decarbonising Transport, before the lockdown. It goes much further in facing up to the problem of emissions from air and vehicle traffic than most campaigners had dared to hope for. The transport secretary, Grant Shapps, declared that "*public transport and active travel will be the natural first choice*", adding "*we will use our cars less*". Transport was to be a centrepiece of the UK's preparations for the postponed

COP26 climate talks. Finally, it appeared we were on the way to grasping the nettle of our polluting driving and flying habits. (3)

Edinburgh will receive half of the original £10 million Places for Everyone Scottish funding total - trebled by the Transport secretary to £30 million - to carry out improvements like temporary pavement widening, segregated cycle lanes and pedestrianised streets. (4)

However, questions are being asked about how serious the Westminster Government really are. (Although this will relate to England, it sets the backdrop for what goes on in Scotland). It has announced £2bn in funding for cycling over five years – but this keeps cycle funding flat. With that sum, the government is only forecast to get a third of the way to its target of doubling the percentage of cycle trips people take – from 2% of all journeys in 2015 to 4% by 2025. According to the Walking and Cycling Alliance, a network of active travel bodies, £5-6bn is needed over the next five years to achieve the target. By contrast, the latest road building bonanza resulted in £27bn being allocated for 4,000 miles of roads. (5)

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1. BBC 3rd April 2020 <https://www.bbc.co.uk/news/science-environment-52137968>
 2. BBC 21st April 2020 <https://www.bbc.co.uk/news/science-environment-52371140>
 3. Guardian 9th May 2020 <https://www.theguardian.com/commentisfree/2020/may/09/imagine-cities-road-traffic-congestion-exhaust-fumes-britain-coronavirus>
 4. <https://www.edinburgh.gov.uk/news/article/12868/5m-funding-for-edinburgh-s-ambitious-active-travel-plans>
 5. Guardian 11th May 2020 <https://www.theguardian.com/environment/bike-blog/2020/may/11/this-could-be-the-time-to-usher-in-a-golden-age-for-cycling-in-britain>

15 Submarines

In January 2020 the National Audit Office published a report examining the building or replacing of three Ministry of Defence (MoD) nuclear-regulated sites – with a current value of £2.5bn. The report found that the three projects were £1.35bn over budget and between 1.7 and 6.3 years late. The report also expressed disappointment that the challenges affecting these projects were not unique, and have been experienced by the MoD for decades.

The Public Accounts Committee investigated what lessons have been learnt.

Each of the 3 projects suffered significant problems in its early stages and the Department said it immensely regretted the amount of taxpayers' money lost. It accepts that poor contracting had made it difficult to incentivise better performance from contractors, and that it had not engaged effectively with the nuclear regulatory bodies. It also describes its arrangements for the Nuclear Enterprise in the past as 'fragmented and balkanised', with insufficient recognition of the interdependencies between projects.

The MoD has eight sites critical to producing, installing, operating, maintaining and disposing of nuclear reactor cores and weapons. A number of major infrastructure projects are under way to modernise some of the sites. They include

MENSA at the Atomic Weapons Establishment site at Burghfield (forecast cost £1.8 billion, forecast completion 2023), where the Department is building a new nuclear warhead assembly and disassembly facility;

the Core Production Capability facilities at Raynesway (forecast cost £474 million, forecast completion 2026), where the Department is replacing facilities so it can produce the latest nuclear reactor core designs; and

the Primary Build Facility (forecast cost £240 million, forecast completion 2022) to allow a modular-build approach for the Dreadnought-class submarines.

The sites are subject to regulation by two regulators—the Office for Nuclear Regulation and the Defence Nuclear Safety Regulator, depending on who owns the sites—which assess whether the sites and the buildings on them are safe to operate. Where regulators are not content, they can prevent or stop construction until the concerns are dealt with.

Glenrothes and Central Fife SNP MP Peter Grant, who sits on parliament’s Public Accounts Committee, has described the situation as “unacceptable” following the release of the new report that suggests errors made by the MoD are being repeated more than 30 years after they were first highlighted by Britain’s public spending watchdog. (2)

Meanwhile, campaigners criticised the decision to transport nuclear warheads from the south of England to Scotland during the pandemic. A convoy carrying the weapons is understood to have left the Atomic Weapons Establishment site at Burghfield, Berkshire, in mid-May arriving at Coulport that evening. Nukewatch UK claim the convoy would have involved at least 50 personnel, including a crew change, and said it travelled along the M6 and on the M8 through Glasgow city centre.

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1. Public Accounts Committee 13th May 2020 <https://committees.parliament.uk/publications/1057/documents/8763/default/>
 2. Dundee Courier 16th May 2020 <https://www.thecourier.co.uk/fp/news/local/fife/1318748/staggering-1-35bn-wastage-on-nuclear-subs-contracts-unacceptable-says-fife-mp/>
 3. Reading Chronicle 15th May 2020 <https://www.readingchronicle.co.uk/news/18452947.campaigners-condemn-transport-nuclear-weapons-awe-week-lockdown/>