

SAFE ENERGY E-JOURNAL No.90

June 2021

The content of this e-journal was for the most part originally prepared for Nuclear Free Local Authorities. It is reproduced, as adapted, with their permission but without liability for its contents.

The Safe Energy Journal doesn't usually deal with the UK Government's proposed new reactor programme. 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 Hunterston

In April the Office for Nuclear Regulation (ONR) gave EDF permission for reactors 3 and 4 at Hunterston to return to service for a limited period of operation after scrutiny of EDF's safety case. Operation is permitted for up to a total of 16.7 terawatt days for reactor 3 and 16.52 terawatt days for reactor 4 – approximately six month's operation for each. This will be the final period of operation before the reactors are shut-down and the spent fuel removed. (1) Reactor 3 was re-started in April but Reactor 4 didn't come back on-line until 6th June.

Meanwhile, on 17th March Hinkley Point B's two reactors were granted permission by ONR to restart after inspections of their graphite cores, but EDF has announced that neither will operate beyond July 2022. (2) EDF has also decided to close Dungeness B immediately – 7 years earlier than expected. Both reactors have been shut since 2018 with corrosion problems. EDF Energy said it has spent more than £100 million on the plant during its current outage. (3)

Sizewell B, which went offline for planned refuelling and maintenance work on April 16 is going to be offline for 3 months longer than expected because some steel components are wearing out more quickly than expected, forcing EDF to carry out lengthy unscheduled repairs. (4)

In February it was reported that Centrica, which owns a 20% interest in the UK's 8.25 GW of operational nuclear power stations had suspended the sale of its nuclear business. It has been looking for a buyer since 2018. The pause was mainly because of the graphite cracking issue at Hunterston and Hinkley and pipe corrosion at Dungeness. (5)

-
1. Nuclear Engineering International 15th April 2021 <https://www.neimagazine.com/news/newsuk-onr-gives-permission-for-limited-operation-of-hunterston-b-8673036>
 2. Burnham & Highbridge Weekly News 19th March 2021 <https://www.burnhamandhighbridgeweeklynnews.co.uk/news/19170578.hinkley-point-b-near-bridgwater-given-green-light-restart-producing-energy/> and World Nuclear News 17th March 2021 <https://www.world-nuclear-news.org/Articles/UKs-Hinkley-Point-B-approved-for-restart>

3. EDF Energy 7th June 2021 <https://www.edfenergy.com/media-centre/news-releases/edf-decides-move-dungeness-b-defuelling-phase>
4. Times 17th May 2021 <https://www.thetimes.co.uk/article/sizewell-b-nuclear-plant-forced-to-stay-shut-over-safety-concerns-0d9l2mkkq>
5. S&P Global 25th Feb 2021 <https://www.spglobal.com/platts/en/market-insights/latest-news/electric-power/022521-centrica-suspends-uk-nuclear-sale-books-gbp525-million-power-asset-impairment>

2 Dounreay

The Dounreay Fast Reactor (DFR) will be dismantled in 2025, according to the Nuclear Decommissioning Authority's (NDA) latest business plan, with the iconic golf ball dome expected to disappear the following year. The business plan includes a 20-year overview, as well as key planned activities for the next three years.

Decommissioning and clean-up at Dounreay is expected to cost £3.2 billion, but it won't be until the year 2333 that the 148-acre site will be safe for reuse. All reactor breeder and other fuels from the DFR will be taken to Sellafield over the next two years.

DFR was built in the 1950s with a plutonium fuel core surrounded by a blanket of natural uranium which converted to plutonium as the reactor operated. After the reactor closed in 1977 most of the core fuel was removed. But work to remove elements from the uranium blanket zone came to a halt when some were found to be swollen and jammed. Almost 1,000 – around two-thirds of the total – were left in place. In March 2020 it was announced that more than half of the last remaining radioactive fuel elements jammed for decades inside the DFR have been removed.

Decommissioning the 60 plus-year-old reactor is one of the most technically challenging projects in the NDA estate and removing the breeder elements has been a top priority.

Two years after the DFR is dismantled, the Prototype Fast Reactor (PFR) should reach the same stage. A target date has also been set for the clean-up of the highly contaminated Shaft and Silo. Waste from the Shaft and Silo is expected to be encapsulated by 2028. (1) US engineering giant Jacobs, which employs more than 1,000 people in Scotland has won a contract to co-ordinate the program to clear and treat radioactive waste in a shaft and silo. The contract is worth £8m over six and a half years. (2)

The UK-based Nuclear Decommissioning Ltd (NDL) consortium has won a design contract related to the PFR decommissioning project. The joint venture group NDL brings together four nuclear decommissioning businesses – James Fisher Nuclear (JFN), Shepley Engineers, React Engineering and Tetra Tech. The consortium will be working collaboratively with Dounreay Site Restoration Ltd (DSRL) to provide all scheme designs for plant, equipment and systems. (3)

-
1. Herald 29th March 2021 <https://www.heraldscotland.com/news/19194038.date-set-removal-dounreays-fast-reactor/>

2. Herald 5th March 2021 https://www.heraldscotland.com/business_hq/19137210.caithness-nuclear-plant-contract-win-engineering-giant/
3. Nuclear Engineering International 3rd June 2021 <https://www.neimagazine.com/news/newsndl-consortium-wins-two-decommissioning-projects-at-dounreay-8788483>

3 Torness

In the latest capacity market auction for the period 2024/5, Torness Reactor 2 secured a one-year agreement for the period October 2024 to September 2025, but Reactor 1 did not. (1) This may imply an expectation or risk that Torness Unit 1 may not be operating in 2024/5.

Edinburgh Green councillor, Gavin Corbett asked about this at the annual Local Liaison Committee on 24th March. He was told Reactor 1 would be entered into the auction next year.

On 22nd January, Reactor One started a 10-week statutory outage - this involved around 500 additional contractors descending on East Lothian to carry out essential maintenance. The outage had been planned for summer 2020 but was postponed with the agreement of the ONR because of Covid. (2) On 28th April, EDF announced that the reactor had returned to service following a £25m investment programme during which more than 14,000 separate pieces of work were carried out (making the outage almost 13 weeks long). (3)

1. EDF Energy 10th March 2021 <https://www.edfenergy.com/media-centre/news-releases/edf-statement-capacity-market-auction-t-4-202425>
2. East Lothian Courier 20th Jan 2021 <https://www.eastlothiancourier.com/news/19013892.statutory-outagetorness-power-station-strict-coronavirus-rules-place/>
3. EDF Energy 28th April 2021 <https://www.edfenergy.com/media-centre/news-releases/torness-reactor-back-online-following-25m-outage> East Lothian Courier 11th May 2021 <https://www.eastlothiancourier.com/news/19289921.torness-power-station-outage-complete-14-000-pieces-work-finished/>

4 Chapelcross

The Chapelcross Site's Interim Storage Facility (ISF) has taken its first active waste package – a Ductile Cast Iron Container with waste from the site's former cooling pond. The ISF can hold over 700 waste packages and will be filled over the next five years as part of decommissioning work. Standing at 57 metres long and 23 metres wide, it has been constructed to safely and securely store packages for 120 years. Construction of the Chapelcross ISF began in 2014 and the building includes mechanical handling systems.

-
1. World Nuclear News 14th May 2021 <https://www.world-nuclear-news.org/Articles/Chapelcross-ISF-receives-first-container-of-waste>

5 Fusion

STEP (Spherical Tokamak for Energy Production) is described as *“an ambitious programme to design and build a prototype fusion power plant”*. It is a UK Atomic Energy Authority (UKAEA) programme, currently with £222 million funding from the UK Government to produce a concept design by 2024. The programme is promising ‘billions’ of pounds to accelerate progress towards commercially viable fusion power, through design and construction of a prototype fusion reactor by around 2040/50.

In Autumn 2020, the UKAEA called on communities across the UK to volunteer to host a prototype fusion reactor. UKAEA will now make a recommendation to the Secretary of State for BEIS on the most suitable locations for STEP following a rigorous process of assessment using a defined set of key criteria. Nominations to host STEP closed on 31 March 2021. (1)

Dounreay and Chapelcross were amongst the sites which have put themselves forward. (2)

Maree Todd, the newly-elected MSP for Caithness, Sutherland and Ross has been highlighting the role Dounreay could play in developing nuclear fusion which she believes could be an option for the future of the plant. She says it could produce *“green energy without the nuclear waste associated with nuclear fission”*. (3)

Scientists for Global Responsibility director, Dr Stuart Parkinson says *“Nuclear fusion will almost certainly make no contribution to reaching climate targets”*.

Proponents believe fusion reactors could solve the climate-change crisis by providing inexhaustible energy with zero emissions and no chance of a meltdown. But the challenge of creating fusion reactions is enormous: Scientists and engineers essentially have to create a small star. Hydrogen must be heated to about 100 million degrees Celsius — six times hotter than the sun’s core. At that temperature, hydrogen is no longer a gas but a plasma, a soupy mix of charged particles that is incredibly difficult to sustain. Scientists have been trying to contain the plasma using a tokamak, a doughnut-shaped structure with an extremely strong magnetic field, but thus far have been successful only for seconds.

The biggest project in the world is ITER, a tokamak the size of 60 soccer fields that is under construction in France and is expected to operate in 2035. ITER, which means “the way” in Latin and originally stood for International Thermonuclear Experimental Reactor, is a joint effort of the European Union, U.S., U.K., China, Russia, Japan, India, and South Korea. Preliminary experiments are being done at a mock-up facility in Britain. But several retired fusion physicists, including Ernesto Mazzucato and Daniel Jassby of Princeton's Plasma Physics Lab, have described ITER as a boondoggle run by bureaucrats that is likely to waste its potential cost of up to \$65 billion. (4)

The NFLA says its five key concerns with nuclear fusion are:

- Nuclear fusion, like nuclear fission, still produces significant quantities of radioactive waste.
- Radioactive tritium emissions would be released as part of the fusion process.
- A large water source for cooling would be required.

- It costs huge sums of money that the public exchequer cannot afford.
- Any delivery of it will come too late to seriously tackle the effects of climate change. (5)

The problems

The reality is that fusion reactors, if ever operated, would produce by-products that are far from harmless. In addition, most (around 80%) of the output energy would be in the form of high-energy neutrons which would lead to structural damage, large amounts of radioactive waste and the need for much biological shielding to protect operators and the public nearby.

Fusion plants can best be viewed as gigantic exercises in tritium recycling, and, if the plant were ever constructed, large amounts of radioactive tritium (~1018 Bq per year) would be released into the atmosphere and via the cooling water. This would contaminate all areas downwind and downstream. Some nuclear scientists think that tritium is a “weak” nuclide but the reality is the opposite: (see The Hazards of Tritium - Dr Ian Fairlie (6)). If an explosion and/or fire occurred (tritium and deuterium are both flammable), the amounts of radioactivity released would be even greater and would constitute a nuclear disaster.

Fusion reactors would also be subject to the major problems associated with fission reactors, including large-scale cooling demands, and high construction and operational costs. The structure, damaged by neutron bombardment, would need to be replaced periodically, resulting in large amounts of radioactive wastes for which there is no current solution in the UK.

Dr Daniel Jassby who worked for 25 years in areas of plasma physics and neutron production related to fusion energy research and development has written two informative articles on the myriad problems with nuclear fusion for the Bulletin of Atomic Scientists. He concludes “*When you consider we get solar and wind energy for free, to rely on fusion reaction would be foolish*”. (7)

In short, nuclear fusion would not provide cheap, clean, safe or healthy energy but it would have strong links with materials necessary for nuclear weapons.

-
1. UKAEA (accessed) 21st April 2021 https://step.ukaea.uk/wp-content/uploads/2020/12/STEP_Background-Document.pdf
 2. Ferret 11th March 2021 <https://theferret.scot/scottish-sites-nuclear-fusion-reactor/>
 3. John O’Groat Journal 23rd May 2021 <https://www.johnogroat-journal.co.uk/news/todd-says-north-has-massive-opportunities-in-renewable-ene-238981/>
 4. The Week 28th March 2021 <https://theweek.com/articles/973971/nuclear-fusion-answer>
 5. NFLA Briefing September 2020 https://www.nuclearpolicy.info/wp/wp-content/uploads/2020/09/NFLA_New_Nuclear_Monitor_No62_Nuclear_fusion_sites.pdf
 6. Dr Ian Fairlie 13th March 2020 <https://www.ianfairlie.org/news/the-hazards-of-tritium/>
 7. “Fusion reactors: Not what they’re cracked up to be” – by Daniel Jassby, April 19, 2017: <https://thebulletin.org/2017/04/fusion-reactors-not-what-theyre-cracked-up-to-be/> and “ITER is a

showcase ... for the drawbacks of fusion energy” – by Daniel Jassby, February 14, 2018:
<https://thebulletin.org/2018/02/iter-is-a-showcase-for-the-drawbacks-of-fusion-energy/>

6 Dalgety Bay

30 years after radioactive contamination was first identified, the clean-up at Dalgety Bay has finally begun. The area was once home to Donibristle military airfield, where a large number of planes were dismantled after the end of World War Two and the debris burned and buried. Part of the foreshore at Dalgety Bay has been off limits to the public since 2011 due to the health risks posed by radioactive debris. Radium was used to coat instrument panels so they could be seen in the dark, but it is radioactive and toxic to human health, with a half-life of 1,600 years.

David Barratt, Fife councillor for Inverkeithing and Dalgety Bay, has welcomed the work finally getting started. He said: *“It has taken over 30 years and significant pressure from the community to get to this point. I’m delighted that works are now under way and grateful to Sepa for all their effort in ensuring it will be done right, providing a permanent solution. It should send a clear message that it doesn’t matter how much time passes, the polluter should always pay. Time will tell if its smooth sailing from here and whether a 2022 completion date is possible. They have around 20,000 tonnes of material from the area to screen and the more contamination they find, the longer it will take, but at least now we know it will be safe, however long it takes.”* (1)

Back in March it was discovered that the Ministry of Defence and their contractor Balfour Beatty, tasked with the clean-up and remediation of the Dalgety Bay radium-contaminated site, have still not sought a licence from the Scottish Environmental Protection Agency, despite many previous assertions that they were actively doing so.

-
1. Scotsman 23rd May 2021 <https://www.scotsman.com/news/environment/30-years-on-scotlands-radioactive-beach-clean-up-begins-at-last-3246562>
 2. NFLA 9th March 2021 <https://www.nuclearpolicy.info/news/nfla-shocked-ministry-defence-contractors-not-sought-licence-radiation-remediation-dalgety-bay-fife/>

7 Scotland’s Climate Change Plan

The Scottish Government is expected to update its plans to tackle the climate emergency, after a debate in the Scottish Parliament. The Plan was published before the election before it could adopt the recommendations of Holyrood’s committees.

The Scottish Government has acknowledged it needs to review the Climate Change plan to include necessary changes to land use, transport, energy and housing policy, and that needs to be done as early in the parliamentary session as possible, so it can inform policy-making.

8 Scotland's Heat in Buildings Strategy

Summary: By the end of 2023 local Authorities in Scotland will have to produce a plan setting out how each part of their area will deliver low carbon heat. These Local Heat & Energy Efficiency Strategies (LHEES) will form a basis for local public consultations.

The Westminster Government's is expected to announce a policy in the next few weeks which could mean banning the sale of gas boilers from 2035. (Policy on gas is mostly reserved.) It's possible that householders would still be able to install a "hydrogen-ready" boiler, which would continue to use natural gas, at least for the time being. These boilers cost slightly more than a normal gas boiler and £250 to switch to hydrogen if and when it's available. But that could take years, and when it is available it's likely to cost around three times more than natural gas. (1)

On the other hand, heat pumps can cost up to £10,000 to install, but hopefully costs will halve within two years. At the moment it might cost slightly more to heat a well-insulated house with a heat pump, but in many cases it can actually work out cheaper than heating a house with gas.

A third option would be to install district heating networks which can use waste heat from things like industry, data centres and sewage works. The UK Government expects about a fifth of heat needed for buildings to come from district heat networks. Chris Stark from the government's advisory Climate Change Committee "It's really important to get district heating into the discussion. It's so appealing in population-dense cities. "And it's the best answer for conservation areas, because it offers a low-carbon solution for housing where it would be difficult or expensive to upgrade the fabric of the building itself." Plans are already being developed, for example, for networks in Granton and Fountainbridge in Edinburgh.

Scotland has around 2.5 million occupied dwellings accounting for 15% of total greenhouse gas emissions. The vast majority of these will still be occupied in 2045. About 80% (~2million) use mains gas and around 170,000 using high emission fuels such as heating oil, LPG or coal. Only around 11% (approx. 278,000) of households have a renewable or very low emissions heating system, such as a heat pump, biomass boiler or electric storage heating. An estimated 34,000 homes are connected to heat networks – mostly fuelled by gas.

Scotland's Draft Heat in Buildings Strategy, which updates both the Energy Efficient Scotland Route Map and the Heat Policy Statement, was published in February with responses expected by 30th April 2021. The main points of the Strategy included:

- Local Heat & Energy Efficiency Strategies (LHEES) setting out a plan, matched to local circumstances, to be put in place for all local authority areas by the end of 2023.
- Energy efficiency is critical across all pathways and technologies. Good progress has been made on energy efficiency, with 45% of homes now achieving EPC C or better, but efforts need to accelerate.
- By 2030 over 1 million homes and around 50,000 non-domestic buildings need to be converted to use heat pumps or heat networks in a way that protects those in or at risk of fuel poverty. SG wants deployment rates to rapidly scale up to at least 64,000 homes

installing renewable heating systems per year by 2025, rising to a peak of over 200,000 per year in the late-2020s.

- SG is working with the Heat Pump Sector to develop a new Heat Pump Sector Deal. An expert working group has been set up to make recommendations by Summer 2021 on how industry and Government can work together to set a clear pathway for accelerated deployment, and consider how innovation can improve the consumer experience of heat pump technology whilst maximising economic opportunities across Scotland. SG will respond to those recommendations in the final version of this Strategy.
- Heat networks will play an important role in the heat transition. The Heat Networks (Scotland) Act will build confidence among consumers and attract investment for development. A new regulatory regime for heat networks will be operational by the end of 2023. New heat networks will need to be powered using renewables or other low or zero emissions sources of heat. From 2023 SG will only consent renewable and low or zero emissions heat networks.
- Longer term, hydrogen may have an important role to play, but by 2030 SG wants to see at least 20% of the volume of the gas in the gas grid to be green gas.
- Over this new Parliament almost £1.6 billion will be available for heat and energy efficiency projects but the total investment required to transform our homes and buildings is likely to be in excess of £33 billion.
- A new Green Heat Finance Task Force will be established to identify innovative solutions to maximise private sector investment, and find new ways to help individuals and organisations spread the upfront cost of investing in making their properties warmer, greener and more efficient.
- There will be a consultation on a 2024 Zero Emissions Heat Standard for new buildings.
- We will see increased rates of installation of energy efficiency measures, potentially supporting 1,200 jobs for every £100 million invested and as many as 24,000 jobs overall.

A Guidance and Methodology on LHEES is being developed which takes account of learning from some pilot schemes. Glasgow City Council was one of the first local authorities to trial the LHEES approach.

Non-domestic buildings

- There are approximately 220,000 non-domestic buildings in Scotland, including around 23,000 buildings in public ownership. They account for 6% of Scotland's total greenhouse gas emission. They are hugely diverse and analysis of energy efficiency levels shows that almost three in four of all non-domestic premises have a current EPC of E or worse with only 5 percent EPC B or better. Over half are already heated by low emission sources. By 2030 an estimated 50,000 non-domestic properties will need to be converted to zero emissions sources of heat.

On Hydrogen the consultation says:

100% hydrogen may be particularly appropriate in certain locations, where there is local supply (for example from abundant renewable electricity) or where industrial demand creates economies of

scale. Increased availability of hydrogen for heat will have implications for the suitability of hybrid heat pump systems, which may be cost-effective solutions in conjunction with hydrogen, and we will keep this under review.

Other technologies such as deep geothermal are less well developed in Scotland but could have a role to play in particular communities and areas in Scotland. We will continue to explore the potential for such solutions. Solar thermal technologies tend to be most appropriate as a complement to a primary zero emissions heating technology such as a heat pump.

Secondary technologies, such as solar thermal and PV, can work in conjunction with a primary zero emissions heating system to increase operational effectiveness in certain scenarios as well as a variety of storage technologies such as electric and heat batteries, and thermal water stores.

SG will work with stakeholders, including Historic Environment Scotland, to develop more solutions to transition Scotland's historic buildings to zero emissions heating while respecting and preserving the special characteristics of our buildings and places.

Fuel Poverty

Today in Scotland, a quarter of households are in fuel poverty with around half of these living in extreme fuel poverty. The Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 requires that by 2040, as far as reasonably possible no household in Scotland is in fuel poverty. As we transform our homes and buildings over the next two decades it will be imperative that we do so in a way that continues to help eradicate fuel poverty and protect our most vulnerable citizens. In the final version of the Strategy, SG will publish a set of guiding principles to make sure no one is left behind, and there are no increases in fuel poverty. When a heat pump replaces a modern, efficient gas boiler, the greater efficiency of the heat pump may be insufficient to offset the higher price of electricity and the household's running costs may therefore increase. High standards of energy efficiency can help to reduce the overall demand for energy, and alongside energy saving behaviours can help to ensure running costs remain affordable.

Small-scale renewable generation and storage, including solar thermal and photovoltaic (PVs), thermal and battery storage could potentially provide a source of energy and flexibility for consumers, helping to reduce bills and tackle fuel poverty. SG has supported a number of projects which have set out to demonstrate the role of domestic scale renewable generation and storage in alleviating fuel poverty.

Heat Networks (Scotland) Act

The Heat Networks (Scotland) Act places a duty on local authorities to consider the designation of heat network zones. Should local authorities choose to designate heat network zones, SG proposes that LHEES should be the primary means by which these zones will be documented, ensuring LHEES is the principal vehicle for heat planning for all technologies on an area basis. The Act makes provisions for this duty to be exercised by Scottish Ministers on behalf of local authorities to ensure widespread identification of zones across Scotland.

SG currently estimates that heat networks have the potential to supply between 7 - 12% of Scotland's heat demand, but this may change with the publication in early 2021 of the National Comprehensive Assessment of the potential for combined heat and power and district heating and cooling in the UK (NCA).

In February, The Scottish Parliament passed the Heat Networks (Scotland) Act. (2)

- The Act: regulates the market through a licensing system so that homes and businesses are supplied by solvent, fit and proper operators, while requiring networks to be developed and maintained to high standards;
- creates a bespoke system of scrutiny for new networks, to ensure that they can contribute to climate change and fuel poverty objectives, before they are consented for development;
- requires heat networks to have a scheme in place to transfer operational rights to a third party to ensure sustained supply, if and when needed;
- requires the identification of optimal areas for heat network development across Scotland – Heat Network Zones – including by drawing on information obtained through a new requirement on the public sector to assess the suitability of its own estate to connect to heat networks;
- attracts new, and lower cost investment in the sector by awarding long-term Heat Network Permits to develop and operate in the most opportune areas. This will provide assurances over the customer base available, and enable borrowing to be repaid in line with the long-lived nature of the heat networks infrastructure, and grant new rights for heat network operators – such as wayleaves;
- compulsory purchase, road works and surveying rights – to reduce the costs and time involved in construction and maintenance.

The new regulatory regime should be operational by the end of 2023.

The Heat Networks (Scotland) Act, along with the proposed 2024 New Build Heat Standard, already includes many of the key ingredients to make heat networks an attractive proposition for investors. To help identify and build a pipeline of heat network projects SG will develop a Heat Network Investment Prospectus in 2021, which builds on the NCA, to identify key strategic opportunities for heat network development in the 2020s. This investment prospectus will help to guide our capital investment and will underpin the development of LHEES.

Electricity Networks

Although Scotland's electricity generation is already largely decarbonised, we need to understand the generation capacity necessary to meet future demand, as well as an indication of where in Scotland renewable generation will be located and how it will be delivered to consumers. An analysis of this will be carried out during the first half of 2021 with details set out in a refreshed Energy Strategy to be published later this year.

There will be places right across Scotland where network owners will need to reinforce cables and upgrade the substations that serve our neighbourhoods and buildings, and do so in a way that coordinates with plans for conversion to electric heating. An integrated approach to future systems

planning will be crucial. The cost of this investment could be significant, especially when coupled with the impact on electricity networks of increased electrification of transport. There will also be increasing value in energy storage. This includes large scale energy storage such as hydro systems and large-scale battery storage but also heat storage in heat networks, building-scale batteries and thermal storage. These tools could help balance the use of electricity for heat in buildings ensuring that networks are not overloaded and help to keep consumer bills affordable.

SG is setting up a new Heat Electrification Partnership with Distribution Network Operators (DNOs) to work together to understand the scale, pace and location of network investment needed, build the evidence for the right investment decisions for Scotland and ensure compatibility with delivery and deployment plans.

As Local Heat & Energy Efficiency Strategies (LHEES) are rolled out for all local authority areas in Scotland, they will provide a long-term platform for considering local circumstances in developing electricity network business plans, and support this necessary co-ordination of resources and development.

Gas Networks

Should demonstration and safety case trials prove successful, conversion of parts of the network to carry 100% hydrogen could play an important role in reducing emissions from buildings. Hydrogen may be particularly appropriate in certain locations, where there is local supply (for example from abundant renewable electricity) or where industrial demand creates economies of scale. SG is working with Scottish Gas Networks (SGN) and National Grid Gas Transmission on a project to understand the scope for accelerated gas decarbonisation in Scotland, and the timeline over which evidence will be available to resolve uncertainties. This work will be published later in 2021 and will inform the final version of the Heat in Buildings Strategy.

Regulation of the gas network is a matter for the UK Government. To unlock delivery at scale and meet climate targets, key strategic decisions on the gas network are required by 2025 to drive planning for delivery beyond 2030. It is essential that UK Government accelerate decisions on the future of the gas network.

Economic Opportunity

SG says transforming our buildings by making them more energy efficient and converting them to zero emissions has the potential to make a significant economic contribution and represent a sizeable opportunity for Scottish businesses over the next 24 years. The proposals and actions set out in the draft Strategy provide a clear set of signals to the market, helping to give clarity and confidence to companies to invest for the transition.

Relevant Documents:

Scottish Government's Draft Heat in Buildings Strategy, 5th Feb 2021

<https://www.gov.scot/publications/heat-buildings-strategy-achieving-net-zero-emissions-scotlands-buildings-consultation/>

Local Energy Policy Statement, SG 6th Jan 2021

<https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and->

[guidance/2021/01/local-energy-policy-statement/documents/local-energy-policy-statement/local-energy-policy-statement/govscot%3Adocument/local-energy-policy-statement.pdf](https://www.glasgow.gov.uk/guidance/2021/01/local-energy-policy-statement/documents/local-energy-policy-statement/local-energy-policy-statement/govscot%3Adocument/local-energy-policy-statement.pdf)

APSE Energy Briefing <https://www.apse.org.uk/apse/index.cfm/members-area/briefings/2021/21-17-scottish-government-consultation-on-heat-in-buildings-strategy-achieving-net-zero-emissions/>

- Dr Keith Baker of Glasgow Caledonian University says the potential for heating homes with hydrogen is very limited. If we are to have any chance of averting catastrophic climate change, we can forget everything but green hydrogen. And because it's far more efficient to take renewable electricity and dispatch it straight into the grid, the rate of growth in renewable electricity generation will have to significantly outstrip demand in order to justify investing in pumping or transporting hydrogen far from the points of production. (3)
- A Key question is whether district heating systems can be fed with renewably generated heat rather than by fossil fuels. The Nordic countries, which get 65% of their heat from district heating, have led the way on this. Sweden, blessed with plentiful hydropower, sources over 70% of its district heating from renewables. Iceland is close to 100%, thanks to its geothermal resources. A total of 70% of the district heating in windy Denmark is from renewables or waste heat. So far, Denmark is the only country with a significant amount of district heating coming from wind and solar installations rather than hydro, geothermal or biomass. The country accounts for a whopping three-quarters of the installed capacity of solar thermal energy in district heating worldwide. (4)
- The Port of Cromarty Firth and ScottishPower are among a consortium of businesses pushing for the development of green hydrogen hub in the Highlands, powered by offshore wind. The Scottish Hydrogen and Fuel Cell Association (SHFCA) revealed that several member firms have begun a feasibility study for the proposed project. The plans outline how up to 15 new offshore wind sites will be developed in the region in the coming years, making the Firth an ideal location for a substation feeding into an onshore electrolyser. The electrolyser would be co-located with tank storage. Backers include energy firms ScottishPower and Pale Blue Dot Energy, the Port of Cromarty Firth and Scotch whiskey distillers Diageo, Glenmorangie and Whyte and Mackay. It has been proposed that the distilleries would be among the first organisations to receive green hydrogen supply from the hub, given the sector's plans to reach net-zero and the Government's support for hydrogen uptake in this space. (5)
- ScottishPower has submitted a planning application to build the UK's largest electrolyser (20MW) close its onshore wind farm, Whitelee, just outside of Glasgow. It will be capable of producing 8 tonnes of green hydrogen a day. Together with the electrolyser, the planning application includes a proposal to build a combined solar and battery energy storage system with up to 40MW of solar, and up to 50MW of battery storage, to work with the wind farm to power the electrolyser. (6) The submission marks an important step for Green Hydrogen for Scotland, a partnership between ScottishPower, BOC and ITM Power, to create green hydrogen production facilities with clusters of refuelling stations across Scotland. The partnership's first project, 'Green Hydrogen for Glasgow', is designed to provide carbon-free transport and clean air for communities across Glasgow as well as helping support industrial hydrogen demand in the region. (7)

1. Business Green 25th May 2021 <https://www.businessgreen.com/news/4031830/reports-government-considering-2035-ban-home-gas-boilers> and Telegraph 26th May 2021 <https://www.telegraph.co.uk/environment/2021/05/26/loophole-may-allow-new-gas-boilers-ban-2035/>
2. The National 24th Feb 2021 <https://www.thenational.scot/news/19112819.crucial-heating-legislation-voted-msps-tackle-climate-emergency/>
3. Source News 15th March 2021 <https://sourcenews.scot/keith-baker-why-using-hydrogen-to-heat-homes-is-more-hot-air/>
4. Energy Monitor 22nd Feb 2021 <https://energymonitor.ai/sector/heating-cooling/what-role-can-district-heating-play-in-the-energy-transition>
5. Edie 8th March 2021 <https://www.edie.net/news/10/Plans-unveiled-for-green-hydrogen-hub-in-the-Scottish-Highlands/>
6. Current 12th April 2021 <https://www.current-news.co.uk/news/scottishpowers-green-hydrogen-project-looks-to-build-uks-largest-electrolyser>
7. Herald 13th April 2021 <https://www.heraldscotland.com/news/19228622.planning-application-deliver-uks-largest-electrolyser-submitted-scottishpower/>

9 Scotland's Climate Assembly

On 24th March Scotland's Climate Assembly laid its interim report before the Scottish Parliament. Scotland's Climate Assembly is over 100 citizens from all walks of life tasked with examining expert evidence and agreeing recommendations for tackling the climate emergency in a fair and effective way. The report sets out 16 goals agreed by an overwhelming consensus of members. These goals cover a broad range of issues including domestic heating, emissions, land use, taxation and the economy. The full report with detailed recommendations will be published in May following the election of a new Scottish Parliament.

The interim report is available here: <https://www.climateassembly.scot/sites/default/files/inline-files/SCA%20APS%20Interim%20Report.pdf>

The report calls for action to tackle the climate emergency in an effective and fair way. Scotland has the opportunity to be pioneers, by taking immediate action to empower our next generations to lead sustainable lives by setting up the framework now. The Assembly says there is a fundamental need to focus the country's collective mindset on the climate emergency and the requirement for immediate action. Climate change affects every one of us, and no one should evade responsibility. The entire population of Scotland has the right to accurate, up-to-date and accessible information to develop a clear understanding of the reality of the climate emergency. Things need to be done to empower people to take action themselves and drive collective and systemic action across Scottish society. Scotland needs to invest in the development of sustainable, future-proofed infrastructure across the country – including integrated private and public transport systems, high-speed broadband and the electricity network – if we are to achieve our decarbonisation goals. (1)

The final report is due to be presented to Parliament in June.

- The BBC followed members of the UK's Citizens Assembly. With 108 ordinary Brits tasked with deciding what we should do to meet our climate change goals it is a fascinating watch. Organised by Parliament, this historic event sees members of the public grapple with big questions about our future. As the Assembly members learn the science of climate change from experts and hear Sir David Attenborough thank them for giving up their time to this task, they begin to realise the huge significance of the decisions they must make. The film follows seven Assembly members from all over the UK, who each bring their own perspective to the climate change debate. (2)

-
1. Scotsman 23rd March 2021 <https://www.scotsman.com/news/opinion/columnists/climate-change-scotland-must-make-the-eradication-of-fossil-fuel-use-a-priority-in-radical-plan-to-tackle-this-emergency-scotlands-climate-assembly-3174350>
 2. BBC 13th May 2021 <https://www.bbc.co.uk/iplayer/episode/p097sbzc/the-people-vs-climate-change>

10 Just Transition Commission

The Just Transition Commission's final report was published at the end of March. Subtitled '*A National Mission for a fairer, greener Scotland*' it is a ground-breaking report and well worth a read.

(1) Dr Richard Dixon, Director of Friends of the Earth Scotland says despite the inclusion on the Commission of members from the oil industry and carbon-capture, there is much to welcome in the report, especially the top recommendation that "*pursuing an orderly, managed transition to net-zero that creates benefits and opportunities for people across Scotland*" should become a "national mission" for Scotland. (2)

The Just Transition Commission started work in early 2019, with a remit to provide practical and affordable recommendations to Scottish Ministers. The report sets out their view of the key opportunities and challenges for Scotland and recommends practical steps to achieving a just transition.

Chair of the Commission, Professor Jim Skea says: "*One of the main messages emerging from our work has been that fairness and climate ambition must go hand in hand. We are in no doubt that climate action can bring multiple benefits, including quality green jobs and improved social inclusion. But past experience leaves us in no doubt that for these benefits to be realised, we must plan and be prepared to take decisive action.*"

The Commission says a just transition means policies designed in a way that ensures the benefits of climate change action are shared widely, while the costs do not unfairly burden those least able to pay, or whose livelihoods are directly or indirectly at risk as the economy shifts and changes. Delivering a just transition for Scotland is not just about managing the impact on workers in carbon-intensive sectors. It's also about recognising the transition as an opportunity to advance a range of social justice issues, including the need for improved housing, the health and wellbeing of people, and creating and sustaining jobs across the economy.

As has been stressed by various climate assemblies and juries the Commission agrees that progress towards net-zero will not be achieved without broad-based support and buy-in of workers and communities. Building social justice into climate action should not be seen as a burden, or an optional element of the transition: *“A successful transition will need to be underpinned by a strengthening of social partnership working in Scotland, with Government, business, trade unions and communities coming together to work towards a shared goal.”*

The Commission has 4 key messages:

1. Pursue an orderly, managed transition to net-zero that creates benefits and opportunities for people across Scotland. Delivery of this must be a national mission. Just transition roadmaps will give direction and confidence, driving investment that brings jobs, skills and value.
2. Equip people with the skills and education they need to benefit from the transition.
3. A just transition is shaped by Scotland’s citizens, not imposed on them - empowers and invigorates communities and strengthens local economies.
4. Share benefits widely and ensure burdens are distributed on the basis of ability to pay. A just transition refocuses on wellbeing; it uses the power of government intervention and public finance (such as the Scottish National Investment Bank and public pension funds) to drive action; it explores new funding methods for local projects; it fully explores the distributional impact of taxes; it ensures new technologies and services are delivered in a way that works for people, and improves the lives of the most vulnerable in our society.

The Commission is particularly keen that the Government learns from the failure to maximise domestic economic opportunities from the creation of a strong local manufacturing supply chain for the offshore wind industry. This is particularly significant because the operation of offshore wind will support far less labour than oil and gas production – a situation which threatens to undermine trust in efforts to pursue a just transition amongst Scottish workers and their communities. The reasons for failing to create a thriving manufacturing base include a lack of investment in fabrication and construction alongside lack of progress towards improving ports and harbour infrastructure identified over a decade ago. The Commission heard concerns about an uneven playing-field, with Scottish based companies competing against overseas manufacturers who are often state-subsidised. The Contracts for Difference price stabilisation mechanism, which while incredibly successful in driving cost down, neglects domestic capital content and employment standards. The UK Government has consulted on changes to the CfD mechanism. This offers some hope, but direct government support would still be needed to make Scottish business competitive. The current ScotWind leasing round offers another possible lever to help nurture the domestic supply chain, though its resolution is uncertain following the recent announcement to delay the process. (The UK Government has now conformed that offshore wind developers will be stripped of subsidy contracts if they fail to deliver on their promises to use British manufacturers. (3))

The deployment of offshore floating wind turbines and tidal technology, whilst slightly further into the future, offers promise given the many crossovers with oil and gas. From experience, we can’t simply assume this promise will materialise. Scotland currently hosts two demonstrator projects for floating wind but the supply chain content tells the same story as for offshore wind – overseas

content in manufacturing and construction, with domestic content restricted to operations and maintenance. The situation is similar for other emerging technologies.

The Commission highlights the potential for new and exciting innovation in the consumer market for energy. New and emerging ways of buying and selling electricity (such as time of use tariffs and peer to peer trading) have the potential to offer savings for consumers. Such innovation will be vital for delivering a net-zero electricity system that is affordable. But these changes must be fair. If left to the market, such innovation comes with potential for new injustice, and possibly even higher costs for some.

Transport

The Scottish Government's ambition is to reduce car miles travelled 20% by 2030. But car journeys are continuing to rise and the number of motor vehicles registered in Scotland is at an all-time high of around 3 million. An electric vehicle-centred transition could have an adverse effect on economically disadvantaged communities, further embedding existing inequalities. Any money invested in expanding and improving public transport will disproportionately benefit these groups, and therefore actively address existing inequalities. The Commission recommends a pilot project for free public transport. (4)

Empower and invigorate our communities

Interestingly, the Commission calls for the speedy conclusion of the Local Governance Review, taking bold action to agree concrete steps that will support participation and local democracy, and a recognition of the role of Community Councils as a key part of our social infrastructure, and investigate the potential for increased powers and resources to be directed at community level to ensure any new arrangements support for wider participation.

“Without finding ways to give greater power to communities over decisions that affect them, opportunities to find the most effective solutions for local circumstances will be missed ...Any efforts to increase participation in climate policy are likely to need strong, empowered, local democracy across the country ...”

The Commission also wants the Scottish Government to learn from the experience of deliberative forums such as Scotland's Climate Assembly, and apply the lessons widely across the development of policies for tackling climate change. In particular, Scottish Government should use the final report of the Climate Assembly as a tool for understanding the essential principles that need to underpin fair and just climate action. Once developed these should be embedded across the policy development process to help drive a just transition, particularly leading up the next full statutory Climate Change Plan, due for publication in 2023. This will be the first Plan that, by law, must contain an assessment of the impact of emission reduction policies on workers and communities, and set out actions to manage these impacts.

Local Government

The Commission recommends that the Scottish Government should empower and resource local authorities to deliver a just and green recovery in recognition of the need to rebuild and strengthen local economies.

It should establish the delayed Publicly-Owned Energy Company with a capacity to provide technical assistance to local authorities and social enterprises looking to invest in energy projects. There is a window of opportunity with the passage of the recent Heat Networks Bill for this to have genuine social impact.

Recognising that finance is often a barrier to driving forward local action, a number of actions should be taken to help finance flow to community level projects. The Government should explore financial vehicles that could facilitate investment in small-scale local climate action as part of community wealth building approach, including working with credit union bodies, social investor organisations, and Development Trust Association Scotland. The Commission looked at councils and social enterprises taking the lead and combining climate action with social impact including Aberdeen Heat and Power, North Ayrshire's approach to a green recovery based firmly on Community Wealth Building principles, and East Ayrshire's National Energy Research and Demonstrator. Growing this "social economy" should be a fundamental part of delivering a just transition in Scotland.

The Commission says the Scottish Government should work with local authorities to explore the potential for new innovative funding models, such as Community Municipal Bonds, that allow people to contribute towards climate action in their area and explore the scope to coordinate the aggregation of climate change projects across local authorities so as to offer suitable scale to investors.

- More than half of offshore workers could be involved in low carbon energy activities by the end of the decade, according to new research from Robert Gordon University (RGU) Researchers found that, depending on levels of ambition, the UK offshore energy sector could support around 200,000 jobs, either directly or indirectly, by 2030, up from 160,000 today. (5) The report predicts a fall in direct and indirect employment for 70,000 workers in offshore oil and gas as daily production drops by 37% by the end of the decade. That figure is expected to be offset by 90,000 new jobs in offshore wind and 40,000 vacancies in other offshore green industries such as hydrogen and carbon capture. (6)
- The International Energy Agency (IEA) has published a landmark report that sets out for the first time its scenario for the global energy system to reach net-zero annual emissions of carbon dioxide by 2050. Significantly, the scenario would mean no new supplies of fossil fuels, with profound implications for the coal, oil and natural gas industries. The report, Net Zero by 2050: A Roadmap for the Global Energy Sector, acknowledges that countries that have committed to achieving net-zero emissions of carbon dioxide are currently responsible for about 70% of emissions. The UK is among this number and continues to support an offshore oil and gas industry. By 2040, the IEA sees all coal- and oil-fired power plants phased out unless their emissions are abated by some form of carbon capture. Between 2020 and 2050, oil demand falls 75%, to 24 million barrels per day, gas demand falls 55%,

and remaining oil production becomes “increasingly concentrated in a small number of low-cost producers.” (7)

-
1. Scottish Government 23rd March 2021 <https://www.gov.scot/publications/transition-commission-national-mission-fairer-greener-scotland/>
 2. Scotsman 25th March 2021 <https://www.scotsman.com/news/opinion/columnists/north-sea-oil-industry-must-get-a-just-transition-away-from-fossil-fuels-to-avoid-fate-of-central-belts-ex-mining-communities-dr-richard-dixon-3177662>
 3. Times 8th May 2021 <https://www.thetimes.co.uk/article/offshore-wind-farm-developers-told-to-use-uk-manufacturers-3qgk00jv5>
 4. Herald 24th Feb 2021 <https://www.heraldscotland.com/news/19114461.warning-scotlands-car-traffic-surges-amid-pledge-20-per-cent-cut/>
 5. Energy Voice 25th May 2021 <https://www.energyvoice.com/renewables-energy-transition/324883/rgu-offshore-workers/>
 6. Morning Star 25th May 2021 <https://morningstaronline.co.uk/article/b/union-calls-for-just-transition-to-renewable-energy>
 7. Climate News Network 21st May 2021 <https://climatenewsnetwork.net/net-zero-by-2050-what-it-will-take-to-get-there/>

11 Offshore Wind Jobs

Around 290 jobs are expected to be created thanks to a new contract involving the new owners of the former BiFab yard in Methil. Neart na Gaoithe (NnG) Offshore Wind Limited, its tier one service provider, Saipem, and InfraStrata, owner of Harland & Wolff, have announced that a contract has been signed for Harland & Wolff to carry out the fabrication and load-out of eight of the project’s wind turbine generator (WTG) foundation jackets. With work starting from July 1, 2021, Harland & Wolff will use its newly acquired Methil facilities for the fabrication work, creating around 290 direct and indirect Scottish jobs. Additional support may be provided as required by the company’s other facilities in Arnish, Appledore and Belfast with Saipem’s consent and should the need arise. (1)

Meanwhile, Leith could soon be transformed into one of the largest renewable energy hubs. The plan, which has been unveiled by the operator Forth Ports, will see £40 million spent on the construction of a marine berth capable of accommodating the world’s largest offshore wind installation vessels. A 140-acre cargo handling site will also be upgraded to accommodate lay down, assembly, supply chain and manufacturing processes. The new energy hub, which is expected to occupy a total area equivalent to around 100 football pitches, is forecast to create 3,000 jobs. Cabinet Secretary for Net Zero, Energy and Transport, Michael Matheson, said: “*The Scottish Government has set ambitious targets to increase offshore wind capacity to 11GW of energy installed by 2030, enough to power more than eight million homes.*” (2)

Edinburgh Tory Council John McLellan says the UK and Scottish governments have set “ambitious” targets of 40GW and 11GW for offshore wind – up from the current 1.7GW and 0.89GW. It’s a tall order to say the least when the Scottish target alone requires a minimum of over 700 of the biggest turbines in nine years; with average offshore turbine capacity currently 7MW, the figure is likely to be closer to 1500. With around 5,000 turbines needed to hit the UK target, no wonder Forth Ports spies an opportunity. (3)

-
1. Fife Today 16th April 2021 <https://www.fifetoday.co.uk/business/almost-300-jobs-to-be-created-as-fife-yard-owners-sign-new-contract-3202864>
 2. Energy Live News 26th May 2021 <https://www.energylivenews.com/2021/05/26/port-of-leith-makes-a-splash-for-renewables/>
 3. Scotsman 27th May 2021 <https://www.scotsman.com/news/opinion/columnists/with-north-sea-oil-running-out-and-nuclear-power-stations-closing-scotlands-renewable-revolution-should-get-a-move-on-john-mclellan-3251172>

12 Scotland’s Renewable Target

Scotland narrowly missed its target to generate the equivalent of 100% of its electricity demand from renewables in 2020. New figures reveal it reached 97.4% from renewable sources. The target was set in 2011, when renewable technologies generated just 37% of national demand. Industry body Scottish Renewables said output had tripled in the last 10 years, with enough power for the equivalent of seven million households. Chief executive Claire Mack, said: “Scotland’s climate change targets have been a tremendous motivator to the industry to increase deployment of renewable energy sources. (1)

Onshore wind is currently the biggest player, generating 70% of capacity, with hydro and offshore wind making up the remaining demand. The next step is for renewables to play a larger role across the board, with ministers hoping they will account for half of energy demand across heat, electricity and transport too. (2)

- Scotland’s green energy sector currently supports 22,660 jobs, according to new research. The University of Strathclyde’s Fraser of Allander Institute found that onshore wind is the biggest renewable employer in the country, with 8,780 full-time equivalent jobs, while offshore wind comes in second with 4,700 and hydropower takes third spot with 3,290. The energy industry also supports almost 3,000 jobs in construction and 2,200 jobs in manufacturing. (3)

-
1. BBC 25th March 2021 <https://www.bbc.co.uk/news/amp/uk-scotland-56530424>
 2. The National 26th March 2021 <https://www.thenational.scot/news/19189658.renewables-met-97-scotlands-2020-electricity-demand-new-figures-reveal/>

3. Current 3rd June 2021 <https://www.current-news.co.uk/news/green-energy-sector-supports-23-000-scottish-jobs-with-onshore-wind-the-largest-employer>

13 Energy Storage

Scottish start-up Gravitricity has begun construction of a £1 million (\$1.38 million) gravity energy storage system on an industrial site at Port of Leith. The 250 kW demonstration project, which is supported by a £640,000 grant from U.K. government funder Innovate UK. The project involves building a 15m high lattice tower, with two 25-ton weights suspended by steel cables, and two grid-connected generator units. A two-month test program will confirm modelling and give valuable data for a full scale, 4-8 MW project, which will commence later this year and operate underground. (1)

The Company now says it wants to add hydrogen and heat storage to its underground gravity energy system. It has submitted a patent for turning its purpose-built shafts into pressurised energy stores, which would be capable of accumulating significant quantities of gas. Gravitricity will use its shafts as very large, sealed pressure vessels, which it says are far more economic and safer than above-ground storage vessels.

It is planning to commence work scaling up to its first 4-8MW scheme later in 2021. While the majority of its early schemes are expected to be in existing mine shafts, the company's managing director Charlie Blair said it is already in discussions about purpose-built shafts. (2)

-
1. PV Magazine 10th March 2021 <https://www.pv-magazine.com/2021/03/10/uk-start-up-builds-gravity-based-storage-system-at-scottish-port/>
 2. Solar Power Portal 19th May 2021 https://www.solarpowerportal.co.uk/news/gravitricity_submits_global_patent_for_adding_hydrogen_and_heat_storage_to

14 Tidal power unlocking significant international opportunity

The House of Commons Environmental Audit Committee says government can do more to advance tidal energy projects to market, arguing 'the benefits outweigh the costs'. The Committee said the tidal sector can make *"a significant and distinct contribution"* to the UK's energy mix, and its potential benefits *"merit government support for the development of this sector"* to a stage where significant commercial investments can be attracted. Suggestions include funding detailed studies to take tidal range projects beyond concept stage, discussing an administrative price strike for tidal stream projects in upcoming contracts for difference auctions, and considering a power purchase agreement model to avoid costs being passed onto household bills. (1)

The Committee heard that current tidal stream projects in development already have the capacity to deliver 1GW of electricity to the grid. The EAC recognises the benefits of tidal stream technology in boosting technology clusters in coastal locations with optimal tidal flow, increasing inward investment and driving the development of specialist supply chains, which are principally UK-based. There is also significant export potential, with UK knowledge and expertise helping other nations with tidal power projects. However, the EAC heard that tidal range projects – such as lagoons and barrages – are stuck at the concept stage, without sufficient funding to undertake studies required to secure further backing to assess long-term viability. (2)

The committee's support for the potential of tidal power technologies has been welcomed by the European Marine Energy Centre (EMEC). EMEC managing director Neil Kermode said: *"The evidence provided to the Environmental Audit Committee clearly demonstrates the considerable potential that tidal stream energy offers the UK energy mix, not just in providing a sustainable and predictable low-carbon energy source, but also the economic benefits to the UK of leading the development of tidal energy technologies and the supporting supply chain."* (3)

Export potential

The company behind the MeyGen tidal energy project in the Pentland Firth has achieved *"a huge milestone"* after installing a turbine in Japan. According to Simec Atlantis Energy (SAE), the equipment has produced 10 megawatt hours of electricity in its first 10 days of operation. The turbine is based on the AR1500 model which is one of the four tidal arrays in operation at the MeyGen site in the Inner Sound and was built at Nigg in Ross-shire. It was assembled and tested in nine weeks before being shipped to Japan. (4)

A Simec spokesman said: *"We expect the buildout of MeyGen will unlock significant international opportunity for further projects and continue the reduction in the cost of energy from tidal generation towards that of more established forms of renewable generation. Once operational, this project will be the largest tidal array ever built and continues to be a pioneer and a flagship for both the industry and the technology globally. Operationally, MeyGen provides vital learning to help the design and development for our future projects."* (5)

Simec Atlantis Energy will be putting forward part two of its MeyGen project into allocation round four (AR4) of the Contracts for Difference (CfD) scheme. The subsidy regime, which is the UK Government's main mechanism for support low-carbon electricity generation, is due to open in late summer. (6)

Another company, Nova Innovation, is set to install a series of underwater turbines in the Sound of Islay: the narrow strait between the islands of Islay and Jura in the Inner Hebrides to power local Scotch whisky distilleries. (7)

Orbital Marine Power has launched a ground-breaking new tidal turbine manufactured in Dundee. It is the world's most powerful tidal turbine, the Orbital O2 2MW. It will be transferred to the European Marine Energy Centre (EMEC) off the Orkney Islands. (8)

Wave power

Scotland's wave energy industry is on course to take a big step forward, with Edinburgh-based developer Mocean Energy ready to deploy its scale prototype Blue X wave machine at the European Marine Energy Centre (EMEC) in Orkney. The device is already in place at Forth Ports in Rosyth, where it is being ballasted and wet-tested before being taken by lorry to Aberdeen and by freight ferry to Orkney and onto EMEC's Scapa Flow test site.

The prototype design features a hinged raft with a unique geometry. Mocean's small-scale product line Blue Star and its utility scale product line, Blue Horizon aim to deliver reliable green energy to transmission networks around the world. Blue X has been manufactured at Cowdenbeath-based fabricators AJS Production, with funding of £3.3m from Wave Energy Scotland's Novel Wave Energy Converter programme. According to Wave Energy Scotland (WES), the body set up in 2014 to ensure the country maintains a leading role in the development of marine energy, this is a significant breakthrough for the entire industry. (9) The company's plan is to connect the device to a subsea battery which will be used to power a remotely-operated underwater vehicle.

- Green Party co-leader Lorna Slater, in her first appearance at First Minister (FM) Questions, highlighted the industry which she came from – marine renewable technology. She asked when the First Minister will deliver a public energy company? The FM's reply only said she looked forward to working with the Greens and others to ensure that Scotland continues to lead the world in renewable energy and in the wider transition to net zero. Writing in 'The National' Slater said Scotland urgently needs a public energy company to play a key part of establishing a green recovery. Analysis by the Trades Union Congress suggests the UK is lagging behind other G7 countries when it comes to investing in a green recovery and job creation. She said *"the Scottish Government have long committed to a public energy company which could provide tidal energy with the demand it needs, but it needs to get going. Tidal energy technology was developed in Scotland. We are the world experts in it, but if we don't act now we will lose this industry to other countries."* (10)

-
1. NS Energy 31st March 2021 <https://www.nsenerybusiness.com/news/industry-news/uk-government-tidal-energy-eac/>
 2. House of Commons 31st March 2021 <https://committees.parliament.uk/committee/62/environmental-audit-committee/news/153640/mps-urge-government-to-seize-tidal-power-potential/>
 3. New Civil Engineer 6th April 2021 <https://www.newcivilengineer.com/latest/political-support-for-seizing-tidal-power-potential-welcomed-by-industry-06-04-2021/>
 4. John O'Groat Journal 19th Feb 2021 <https://www.johnogroat-journal.co.uk/news/watch-tidal-power-pioneered-in-pentland-firth-is-installed-in-japanese-waters-228492/>
 5. John O'Groat Journal 10th April 2021 <https://www.johnogroat-journal.co.uk/news/meygen-could-be-a-flagship-project-for-tidal-energy-indust-234431/>
 6. Energy Voice 7th May 2021 <https://www.energyvoice.com/renewables-energy-transition/wave-tidal/321076/simec-atlantis-to-enter-meygen-into-cfd-allocation-round-four/>

7. Engineering & Technology 3rd Feb 2021 <https://eandt.theiet.org/content/articles/2021/02/scotch-whisky-distilleries-to-be-powered-by-tidal-power/>
8. Energy Voice 14th April 2021 <https://www.energyvoice.com/renewables-energy-transition/wave-tidal/uk-wave-tidal/314599/worlds-most-powerful-tidal-turbine-to-be-launched-in-dundee-next-week/>
9. Scotsman 29th April 2021 <https://www.scotsman.com/news/environment/wave-energy-scotland-mark-major-milestone-with-mocean-blue-x-unveiling-3218525>
10. The National 3rd June 2021 <https://www.thenational.scot/news/19349045.lorna-slater-scotland-urgently-needs-public-energy-company/>

15 Scottish Water goes Solar

Scottish Water has announced its “most ambitious solar energy scheme to date”, with an installation planned for its Balmore Water Treatment Works in Torrance, East Dunbartonshire that is expected to generate 4GWh per year. The £3 million investment will be done through the utility’s commercial subsidiary Scottish Water Horizons, and will see 8,620 ground-mounted PV panels with a capacity of approximately 5MW installed at the energy intensive site. The installation will offset 19% of the electricity required to operate the facility, which serves around 565,000 people across East Dunbartonshire, Glasgow, North Lanarkshire, the Falkirk and Grangemouth areas and West Lothian.

1. Solar Power Portal 29th March 2021 https://www.solarpowerportal.co.uk/news/scottish_water_unveils_most_ambitious_solar_scheme_yet_with_4gwh_project

16 Floating Wind

It took 10 years to develop the first floating windfarm and it seemed to some a dangerous gamble to put it 15 miles off Aberdeen in the stormiest waters of the North Sea. But after three years of being in operation it has broken world records for maximum output. Its success even outstrips the speed with which Europe’s other offshore windfarms, those standing in shallow water, have gone from being an expensive renewable option to a mainstream power source. Floating windfarms’ worldwide potential is even greater. The scale of the first five floating turbines is staggering– 175 metres above the sea with another 75 metres below to balance the weight of the tower and the rotor blade with a diameter of 154 metres. The enormous height makes them a commercial success because further out to sea they can catch a steadily blowing wind and deliver more power. The Norwegian company Equinor, which took the gamble on Hywind Scotland, has said the experience has allowed them to cut costs by 40%. The company is now building an even bigger floating windfarm off their home coast before looking for more sites around the UK. (1)

Wood Group – the Aberdeen-based oil services heavyweight - has won a contract to work on a floating windfarm that Simply Blue Energy plans to deploy off the west coast of Ireland. (2)



1. Guardian 30th March 2021 <https://www.theguardian.com/news/2021/mar/30/roaring-success-of-scottish-windfarm-shows-global-potential>
2. Herald 28th May 2021 https://www.heraldscotland.com/business_hq/19334179.aberdeen-oil-services-heavyweight-wins-renewables-work/

17 Shetland

Shetland doesn't do small. The largest and most productive onshore wind farm in Europe is in the early stages of being built, and now the next mega project is on the horizon. The aim is to place the islands right at the heart of a new industry that would decarbonise the oil and gas industry by connecting offshore installations to on and offshore wind farms and, ultimately, produce huge amounts of green hydrogen to satisfy expected local, national and international demand. What started life as the 'energy hub' quickly gained momentum and, along the way, became the Orion clean energy project, a name borrowed from Greek mythology that underlines the council's ambition of 'reaching for the stars'. A number of funding applications to the UK as well as the Scottish Government have already been lodged with the aim to have small-scale hydrogen pilot projects up and running by 2024/25. (1)

Now an ambitious plan to install 200 floating wind turbines built off the west of Shetland and in the North Sea at a cost of £10 billion has been announced by a company called Cerulean Winds, which aims to accelerate the decarbonisation of oil and gas assets offshore. The floating turbines would provide energy to offshore facilities and to "onshore green hydrogen plants" - based at Sullom Voe. Cerulean Winds said it hoped to have the project running in 2024. (2)

-
1. Shetland News 24th Feb 2021 <https://www.shetnews.co.uk/2021/02/24/hydrogen-a-future-for-the-isles-beyond-petroleum/>
 2. Shetland Times 1st June 2021 <https://www.shetlandtimes.co.uk/2021/06/01/ambitious-10-billion-offshore-project-could-bring-lower-energy-costs-and-more-jobs>

18 Climate Emergency

- See latest briefing on Local Authorities and how they should respond to the climate emergency in a post pandemic environment. Mark Bramah of the Municipia Consultancy called this "*the best thing I have read on the role of local authorities and the climate crisis for a very long time and is well argued and the sources are fantastic. This is an invaluable resource.*" <https://www.nuclearpolicy.info/briefings/nfla-policy-briefing-215-how-should-local-authorities-respond-to-the-climate-emergency-in-a-post-pandemic-environment/>

It is increasingly apparent, according to a new paper (1) from Professor Rebecca Willis et al at Lancaster University, that a gap is opening up between the stated intentions on climate change and

the action necessary to achieve them. Not much attention has been paid to the crucial question of how such solutions might be implemented, and by whom. This new paper focuses on this neglected area and the lived experience and understandings of local decision-makers. The research did not aim to develop detailed policy recommendations or prescriptions, but points to some ways forward to help local decision-makers implement rapid climate action.

Taking the climate emergency seriously requires fundamental and previously unimaginable change, affecting every decision, across all service areas, as well as extensive stakeholder engagement to bring down local emissions outside of the council's control. This is a daunting prospect, which unsettles deeply settled and institutionalised ideas and ways of working. The practical implications of this have yet to be fully realised, and the path to understanding and engaging with these implications is very far from clear.

The paper reports on a study of officials and elected representatives in three UK cities, Belfast, Edinburgh and Leeds. Climate change now has a high political priority across the three cities. A particular problem is the lack of clarity over the division of responsibilities between the national and local governments, and the lack of powers and resources at a local level, which limits the ability of local areas to act. Although officers in all departments and politicians in all political parties are going to need to collaborate, there may be huge differences in perspective on the same issues. Some ways forward suggested include:

Firstly, it's important to acknowledge the scale and nature of the issue. In practical terms, such acknowledgement would consist of a clear, unequivocal message from the national government about the need for rapid, co-ordinated climate action, led by all parts of the government.

Secondly, the national government should set a framework for local areas, making clear their responsibilities on climate, and resourcing them to respond, whilst leaving flexibility to allow local areas to develop their own responses.

Thirdly, cities and other local areas should be prepared for the overall aim of responding to the climate emergency to conflict with existing procedures. Local areas could create a mechanism that would allow local officers or politicians to flag such conflicts, and work through their implications and potential solutions, rather than—as is often the case currently—trying to work around them. In practice, this would mean local leaders making changes both to administrative procedures and to political priorities, to emphasise that climate action is a priority, and encourage teams to address conflicts rather than working around them.

Lastly, the study has highlighted the vital role played by local politicians and officials, using their own experience and understandings to develop and advocate ways forward.

The study concludes that the successful development and implementation of climate strategies at local level will require a sustained focus, not just on what needs to be done, but on how local decision-makers can find their way through a conflicting and sometimes contradictory governance landscape.

Local decision makers cannot simply impose radical change; they must work within existing limitations and find ways of moving forward. The project therefore aimed to help practitioners think

through how to navigate the medium term: the as-yet-unclear path from the immediate actions and limitations of the present, to achieving net zero in the long term. (2)

At a launch event for the research Tom Knowland from Leeds City Council summed up by saying *“this is a difficult area and it won’t happen just by people thinking it ought to happen and it’s a good idea. You do need to understand the policy challenge, the science challenge and particularly the organisational challenge.”*

Edinburgh Tory Councillor Joanna Mowat talked about the *“lack of attack and urgency”* in the big and complex organisation which is the Council. Cllr Brian Smyth, of Belfast City Council talked about the lack of powers for local government in Northern Ireland. Polly Billington of UK100 pointed out that the 3 councils covered by this study are pretty advanced members of the UK100 Network. If they are experiencing these problems and barriers to climate action, what hope is there for others. Some of the other 100 members are only just getting started. Billington talked about:

“...making sure we don’t just say ‘oh, it’s all really difficult – and there’s loads of people in local government who make a profession of saying ‘it’s all really difficult’ – and instead say ‘how do we transform and use the powers that we’ve got to push right to the limit of that power and then we will build the authority to ask for those rules to be changed.” (3)

- Glasgow Community Energy, which has been six years in the making, has installed solar panels on the roofs of two schools and plans to expand the installation to buildings across the city. Now the renewable energy co-operative is calling for locals to invest in a community share scheme in a bid to raise £30,000. During the lockdown last year Solar Systems were installed on the roofs of Ashton Secondary School in Easterhouse and Glendale Primary School in Pollokshields. (4)
- Glasgow City Council leader Susan Aitken has announced Earth Overshoot Day, the date by which humans will have used up our quota of the earth’s biological resources. This is year, it is due to fall by late July, almost a month earlier than last year. (5)

-
1. Sustainability 19th May 2021 <https://www.mdpi.com/2071-1050/13/10/5687>
 2. https://pcancities.org.uk/sites/default/files/Briefing_Enabling%20Rapid%20Climate%20Action%20The%20Experience%20of%20Local%20Decision-Makers.pdf
 3. Enabling rapid climate action: Lessons from local government (webinar on 24 March 2021) <https://www.youtube.com/watch?v=YqX4pXKP2QQ>
 4. Glasgow Evening Times 26th May 2021 <https://www.glasgowtimes.co.uk/news/19328375.glasgow-community-energy-selling-shares-help-make-glasgow-carbon-neutral/>
 5. Herald 4th June 2021 <https://www.heraldscotland.com/news/19349549.earth-overshoot-day-susan-aitken-announces-date-ahead-cop26/>

19 Edinburgh's Climate Action Plan

Edinburgh's Draft Climate Strategy which attempts to deliver net-zero emissions by 2030 includes plans for electric car charging hubs for public service vehicles and a gathering of the city's most influential chief executives to "develop a pipeline of net-zero projects", as well as creating a "heat and energy masterplan".

Retrofitting energy-inefficient old buildings in Edinburgh's Old and New Towns will be a key challenge. Officials want to experiment with different approaches to retrofit "in challenging mixed-tenure and heritage settings, including Edinburgh's World Heritage site". Adam McVey, leader of the council, said that this year the world's eyes would be on Scotland and he wanted to ensure this left "a legacy of action to address the climate emergency". He said: "This strategy will help our businesses, public sector and organisations and residents across our communities reduce or remove their carbon footprint. Importantly, it also lays out how we will come together as a city to collaborate on action at the scale and pace we need to get to net zero by 2030."

McVey said the city's electricity grid was far short of being able to handle a mass switch to electric cars by private citizens. But a "*strategic partnership with SP Energy Networks will ensure investment in the city's grid has maximum benefit for our infrastructure plans and for businesses and residents alike*". The plans advocate "*creating EV charging hubs for public service vehicles, making them available to residents, where possible, at key times and in key locations*". Cammy Day, deputy leader, said research indicated that Edinburgh could achieve 60 per cent of its goal to net zero with "*actions that pay for themselves within seven to 12 years*". Edinburgh's 2030 climate strategy needs approval by the policy and sustainability committee next week. If agreed a public consultation will begin. (1)

The Draft 2030 Climate Strategy sets a series of clear and practical steps Edinburgh will take to combat and adapt to climate change and reach its target of net zero emissions by 2030. If the draft strategy is approved, a twelve-week online public consultation will kick off on Monday 14 June, seeking views from people and organisations all over the city on the draft strategy and on actions residents and businesses can take to tackle climate change. The Climate Strategy, focuses on creating the right policy, regulatory and infrastructure conditions in the city to support net zero behaviour change. It also lays out key areas where collaboration and partnership will be supported to deliver on Edinburgh's climate targets. (2)

The strategy makes a number of asks of Scottish Government, focused on those areas where the Council or the city does not have the powers, resources or levers to enable net zero action at the pace required.

The strategy has been guided by five core principles:

1. Preventing future emissions and adapting to unavoidable climate change: a preventative approach will be taken, aiming to build in actions and changes that will prevent future emissions, as well as reducing those we currently emit. This means thinking carefully about the way we build for the future, designing net zero into the fabric and culture of the city.
2. A place based, 20-minute city: the creation of sustainable, 20-minute neighbourhoods across Edinburgh is one of the single most fundamental changes we can make to ensure we meet our net zero commitment.

This means finding ways to make sure citizens can access the services and amenities they need in their neighbourhood, by walking, wheeling, or using public transport.

3. Energy efficiency: Improving the energy efficiency of buildings in Edinburgh is critical. The strategy adopts and promotes fabric first approaches to new developments in Edinburgh, seeking to reduce emissions whilst also reducing ongoing operational and maintenance costs.
4. Electrification first: future needs of the city will create increased demands on the infrastructure supporting our energy supply. The strategy sets out actions to ensure that the network's capacity can withstand the substantive increases in electricity demand from electric vehicles, electrification of heat, and new technologies. The strategy also sets out a number of actions to address the cost of electricity and tackle fuel poverty in the city.
5. Progressive policy: The strategy includes several calls for Scottish Government to work with the city partners and in particular the Council, to develop regulatory frameworks that are progressive and promote innovation, and create incentives for citizens and businesses to make practical changes in the way they live and work.

The challenge we face is clear. We must reduce our transport emissions 12 times faster; emissions from buildings need to be reduced twice as fast year on year and our homes need to be retrofitted 50 times faster.

The vision of the strategy includes ideas such as people live in neighbourhoods with easy access to greenspaces and local services reducing the need to travel; Homes are well-insulated, energy efficient and heated and powered by low-cost, renewable energy; Most citizens find they no longer need a car, and a network of car clubs and electric vehicle charging hubs is available to support those who do.

This strategy lays out key areas where collaboration and partnership will be required to deliver for the city, committing to establish: A strategic City Heat and Energy Delivery Partnership and delivery of a Heat and Energy Master Plan; A strategic Partnership with Scottish Power Energy Network to align grid development investment to the needs of the city; An Energy Efficient Public Buildings Partnership to collaborate on retrofit, align investment plans, and encourage confidence in, and planning for, the business and skills supply chain needed to deliver.

The Council will develop a pipeline of large-scale/aggregated investible projects that focus on delivering the major heat and energy, transport, EV, greenspace, and energy efficient housing infrastructure needed to make the transition to net zero. These projects will provide an opportunity to create systemic change, enable rapid decarbonisation and adaptation to climate change, while creating new jobs, new green markets for local industry, and improving quality of life for citizens. By working with providers of capital, such as the Lothian Pension Fund, we will identify compelling opportunities to match patient finance to large-scale net zero projects which will benefit both investors and citizens.

The Strategy calls for the development of a City Energy Masterplan. This will involve convening a City Heat and Energy Partnership. Delivery partners will include: the Council, NHS, Edinburgh universities, Scottish Water, Scottish Power Energy Networks, Scottish Gas Network, and other key partners. Regional renewable energy solutions will be developed which draw on the area's wind, geothermal, hydro and solar assets; Heat network zones will be identified across the city; all Council-led

infrastructure investment plans will seek opportunities to connect to heat networks; and the Heat and Energy Partnership will work with communities and developers to deliver heat networks which meet the needs of key public sector buildings and major new developments across the city, beginning with Granton Waterfront and the BioQuarter.

The Council wants to maintain an ongoing open dialogue with citizens about the transformation that needs to happen in the city and how to collaborate on decisions to deliver change together. The Council will work with community councils, community and civil society groups and the Scottish Government.

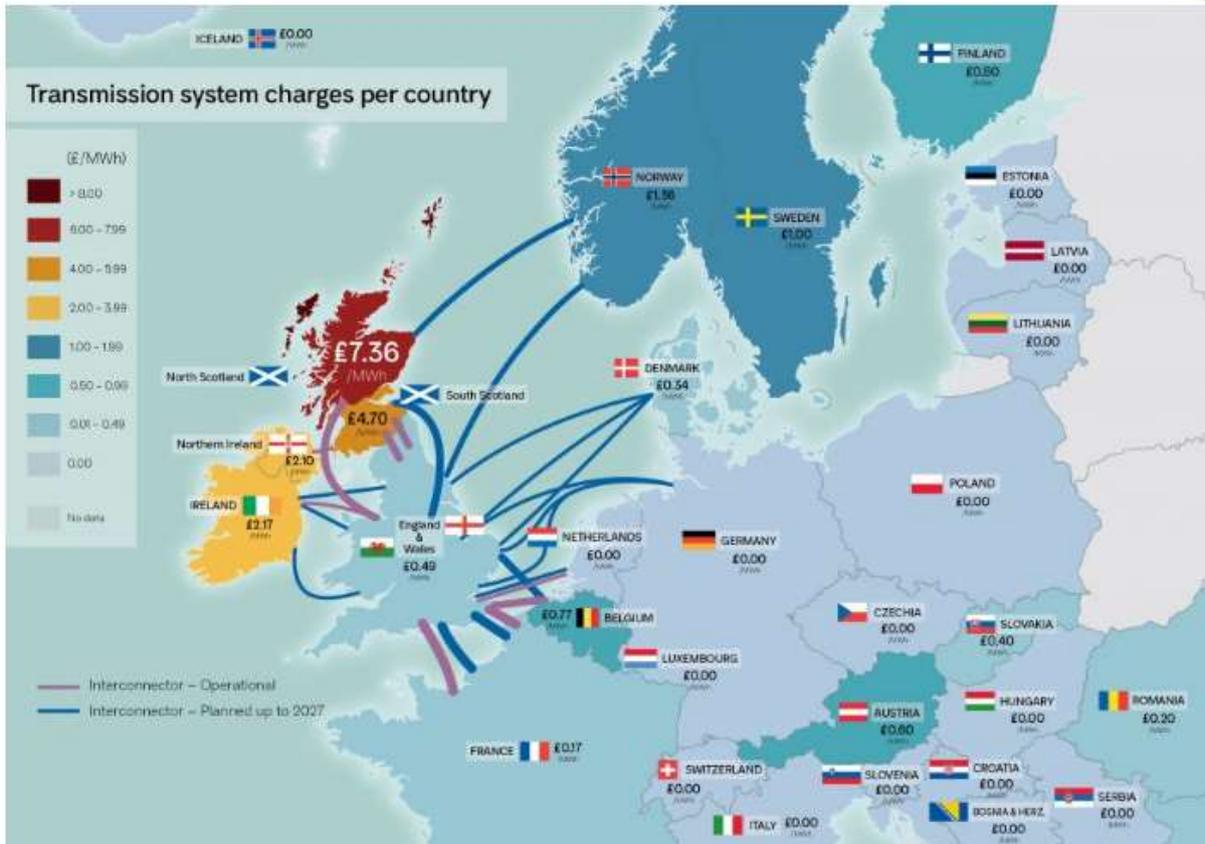
The Council wants to work with the Scottish Government, the Scottish National Investment Bank and private sector partners to develop innovative finance models that share risk and reward and deliver economic and social benefits for Edinburgh's citizens, beginning with Nature Climate Bonds and exploring, for example, city investment bonds.

- Edinburgh Community Solar Co-operative (ECSC) has installed solar panels on the roof at Waverley Court, The City of Edinburgh Council headquarters. This is funded by community share offers and is a fantastic way for the Council to connect with residents who want to help tackle climate change.

-
1. Times 4th June 2021 <https://www.thetimes.co.uk/article/edinburghs-old-buildings-pose-challenge-in-climate-strategy-n5285f95z>
 2. Edinburgh 4th June 2021 <https://www.edinburgh.gov.uk/news/article/13220/draft-strategy-sets-out-how-edinburgh-will-strive-to-become-a-climate-ready-net-zero-capital-by-2030>
 3. Edinburgh Reporter 3rd March 2021 <https://theedinburghreporter.co.uk/2021/03/solar-power-to-be-generated-from-council-hq/>

20 Renewables – Grid Charges

Green energy infrastructure investment is being jeopardised by British regulations that favour EU electricity imports. In new analysis put together by RIDG (Renewable Infrastructure Development Group), a member company of RenewableUK, the transmission charges set by the regulator Ofgem and paid by electricity generators in the country are criticised in comparison to competing European generators. On average the report suggests EU generators pay £0.46/MWh in transmission system charges. However, in Scotland the average is £6.42/MWh as of 2021. This difference is even starker in the windy north of Scotland where the price spikes to £7.36/MWh.



“The UK has the best wind resource in Europe, and we should be making the most of the clean electricity we’re producing for UK consumers at the lowest cost and ensuring we can export the massive amount of power we’re generating when there’s a surplus,” said RenewableUK’s director of future electricity systems Barnaby Wharton. “The current approach to transmission grid charging is not sustainable if we want global Britain to become a bigger player in the international power market. If Ofgem is serious about supporting UK’s net zero emissions target, it should change its approach to ensure we can take advantage of the bountiful natural resources we have.”

1. The National 26th May 2021 <https://www.thenational.scot/news/19331086.british-regulators-jeopardise-scottish-green-energy-huge-charges/> and Current 25th May 2021 <https://www.current-news.co.uk/news/unsustainable-transmission-charges-could-jeopardise-british-infrastructure-investment-warns-report>

21 Faslane & Coulport

OVER 440 safety incidents have been recorded at Scotland’s nuclear bases over the last three years, with events becoming increasingly more frequent. More than 80% of the incidents occurred at Faslane, where most of the UK’s nuclear submarine fleet is located. A number of safety incidents were also recorded at Coulport, home to the nuclear warheads. SNP MP Deirdre Brock, who obtained the figures, told *The Scotsman*: “This is an appalling safety record and it just should not be

tolerated. Scotland has an arsenal of weapons of mass destruction sitting just a few miles from our biggest city.”

In total, 443 nuclear site event reports (NSER) took place between 2018 and 2020, three of which were classed as category B – the second most severe level on the scale. The Ministry of Defence (MoD) defines category B incidents as “actual or high potential for radioactive release to the environment of quantities below IRR99 [Ionising Radiations Regulations]”. The figures also show a rise in the frequency of NSERs in recent years – between 2006 and 2017 there was an annual average of around 66, however this now stands at approximately 148 incidents a year.

Director of Friends of the Earth Scotland, Dr Richard Dixon, told The Scotsman: “*You would think that our nuclear weapons and submarines would be among the most carefully looked after objects in the whole country, yet there have been hundreds of accidents and mishaps in the last few years and the number of incidents seems to be increasing. In at least 18 cases radioactivity was almost certainly released to the environment. Clearly something is very wrong at Faslane and Coulport and this cannot be allowed to continue.*” (1)

Cuts to fire crews at the Faslane and Coulport nuclear submarine bases are “an accident waiting to happen”, according to the Unite trade union. Capita has reduced numbers on the specialist fire safety crew at HM Naval Base Clyde in Argyll and Bute. The company provides fire response services for the Ministry of Defence (MoD). Unite, which represents workers on the bases, said the cuts will “seriously impair the abilities of the onsite fire crews to do their jobs properly”. (2)

-
1. The National 16th May 2021 <https://www.thenational.scot/news/19306574.swigpdhqwhd/> Scotsman 16th May 2021 <https://www.scotsman.com/news/defence/revealed-nearly-450-safety-incidents-at-scottish-nuclear-bases-3235930>
 2. STV 23rd May 2021 <https://news.stv.tv/west-central/accident-waiting-to-happen-at-nuclear-base-after-fire-crew-cuts?top>

22 SEPA

Nearly five months after a crippling cyber attack, Scottish Environment Protection Agency (SEPA) is still struggling to process thousands of pollution permits, planning applications and waste licences. SEPA has not been able receive air and water pollution returns from companies, handle reservoir and other registrations, nor provide information on the past state of Scotland’s rivers. The agency has admitted its systems have been “badly affected” and there “may be a risk” to the environment if it fails to quickly restore services. Sepa’s former boss labelled the attack “disastrous” and warned that Sepa’s reputation had been “dealt a serious blow”. The extensive damage done to Sepa’s digital infrastructure is now under investigation by four different agencies, which are expected to produce initial reports in the next few weeks. It is also coming under scrutiny by the Scottish Government’s spending watchdog, Audit Scotland.

1. The Ferret 16th May 2021 <https://theferret.scot/environment-disastrous-cyber-attack-watchdog/>



23 Spycops

Secret papers released by police to the spycops inquiry have revealed that undercover police officers spied on anti-nuclear campaigners in the 1970s and 1980s. Previously secret papers reveal that spycops claimed to have “penetrated” the Scottish Campaign to Resist the Atomic Menace (SCRAM), Friends of the Earth and the Torness Alliance during protests against the building of a nuclear power station at Torness in East Lothian.

1. The Ferret 6th June 2021 <https://theferret.scot/spycops-infiltrated-scottish-anti-nuclear-groups/>