



# SAFE ENERGY E-JOURNAL No.92

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## 1 Large New Nuclear Update

The UK Government has said it wants to secure a final investment decision on at least one large-scale nuclear plant by the end of this Parliament. It is also supporting the development of Small Modular Reactors.

The Government is putting nuclear power at heart of its net zero strategy. Kwasi Kwarteng, business secretary, unveiled the “Net Zero Strategy”, as well as a “Heat and Buildings Strategy” in October. The creation of a “regulated asset base” (RAB) model will be the key to the delivery of a future fleet of large nuclear power plants. The RAB funding model is already being used for other infrastructure projects, such as London’s Thames Tideway super sewer. Under this program, GB electricity consumers, including those in Scotland (but not Northern Ireland) will be billed for the cost of the plant via a “nuclear tax” long before it starts producing electricity, which could take a decade or more from the time the final investment decision is made.

On Wednesday 3rd November, MPs debated the second reading of the Nuclear Energy (Financing) Bill. The Liberal Democrats and the SNP, both put forward amendments, but neither was accepted for debate by the Speaker.

The Lib Dem Motion said the Bill does nothing to address concerns about costs around nuclear waste disposal and decommissioning and fails to bring forward meaningful reforms to accelerate the deployment of renewable power. The SNP Motion said there is no longer a justification for large nuclear power stations to provide baseload energy, because large scale nuclear is too inflexible to counter to the intermittency of renewables. It called on the Government to spend more money on energy efficiency measures and targeted support for those who suffering from fuel poverty.

During the debate in the House of Commons (1), the Minister of State for Business, Energy and Industrial Strategy, Gregg Hands, said that we need a new funding model to support the financing of large-scale and advanced nuclear technologies. He said the lack of alternatives to the funding model used for Hinkley Point C has led to the cancellation of recent potential projects, at Wylfa Newydd and Moorside in Cumbria. He said the Bill was intended to get new projects off the ground, including, potentially, Sizewell C, which is the subject of ongoing negotiations between EDF and the Government, as well as further projects, such as on Wylfa.

He said the Bill would add, on average less than £1 per month to consumers’ bills during the construction phase of a nuclear project. But compared with the CfD model used to fund Hinkley Point C this could produce a cost saving for consumers of more than £30 billion.

Regarding Scottish Consumers being forced to pay for new reactors he said:

*"...the Scottish Government have a different position with regard to new nuclear projects. To be clear: this Bill will not alter the current approval process for new nuclear, nor the responsibilities of the devolved Governments. Nothing in this Bill will change the fact that Scottish Ministers are responsible for approving applications for large-scale onshore electricity-generating stations in Scotland. The steps taken in this Bill will mean that Scottish consumers will benefit from a cheaper, more resilient and lower-carbon electricity system, so it is right that Scottish consumers should contribute towards the construction of new projects."*

Labour's Alan Whitehead disappointed many when he said: *"We need to support the need to finance new nuclear."*

The SNPs Energy Spokesperson Alan Brown said: *"...successive Governments seem to have developed a groupthink, following lobbying from the nuclear industry, that somehow nuclear is a prerequisite for our future."*

He went on to say:

*"...it was stated ... the new funding model could potentially save the taxpayer £30 billion to £80 billion. How much money do the Government estimate has been wasted on Hinkley?"*

For the Liberal Democrats, Sarah Olney said *"our position is very much that there should not be new nuclear power stations ... there is currently no economic or environmental case for the construction of any further nuclear stations in the UK."*

On the £30 billion savings the NFLA UK & Ireland Steering Committee Chair Councillor David Blackburn said:

*"The Minister is comparing one expensive environmentally unsustainable project with another expensive environmentally unsustainable project. If he really wanted to save consumers money he would introduce a National Homes Retrofit Scheme as quickly as possible having learned the lessons from its failed Green Homes Scheme, and introduce a scheme to support flexibility, demand management and smart grids so that we can use more of our cheap, sustainable renewable electricity."*

On Scottish Consumers paying this "nuclear tax" because they *"will benefit from a cheaper, more resilient and lower-carbon electricity system,"* Scottish NFLA Chair, Cllr. Feargal Dalton said:

*"Renewables met 97% of Scotland's electricity demand in 2020. The Scottish electorate has consistently voted for Governments opposed to building new nuclear power stations. With wind and solar now the cheapest forms of electricity Scottish consumers shouldn't have to pay for the Tories' failed energy policies." (2)*

Of course, consumers who have signed up to buy 100% renewable electricity could quite rightly feel aggrieved at having to pay the "nuclear tax" as well.

1. Hansard 3rd November 2021 [https://hansard.parliament.uk/commons/2021-11-03/debates/B5FFA487-74CE-4197-B8AB-3DA3803F3946/NuclearEnergy\(Financing\)Bill](https://hansard.parliament.uk/commons/2021-11-03/debates/B5FFA487-74CE-4197-B8AB-3DA3803F3946/NuclearEnergy(Financing)Bill)
2. NFLA 4th Nov 2021 <https://www.nuclearpolicy.info/news/nfla-comments-on-plans-to-impose-a-nuclear-tax-on-consumers-bills/>

## 2 Rolls Royce's Small Modular Reactors

On 9th November the Government announced that it would back the Rolls-Royce Small Modular Reactor with £210m in funding. Matched by private sector funding of over £250 million, this investment will be used to further develop SMR design and start the Generic Design Assessment (GDA) process.

The Government claims that SMRs have the potential to be less expensive to build than traditional nuclear power plants because of their smaller size, and because the modular nature of the components offers the potential for parts to be produced in dedicated factories and shipped by road to site – reducing construction time and cost. But the reason why existing reactors are large is precisely to derive economies of scale: why smaller reactors should be more economic is problematic. Nuclear proponents allege that assembly-line technology will be used in reactor construction but this has yet to be shown in practice anywhere in the world.

Some say that SMRs are little more than wishful thinking. For example, Professor MV Ramana – Simons Chair in Disarmament, Global and Human Security at the School of Public Policy and Global Affairs at the University of British Columbia - states:

*“SMR proponents argue that they can make up for the lost economies of scale by savings through mass manufacture in factories and resultant learning. But, to achieve such savings, these reactors have to be manufactured by the thousands, even under very optimistic assumptions about rates of learning.”* (1)

The Rolls Royce SMR design is not exactly small at 470 MWe. It is proposing to build 16 reactors at an expected cost around £1.8bn - £2.2bn and producing power at £40-60/MWh over 60 yrs. (2)

As well as the Government funding, Rolls-Royce has been backed by a consortium of private investors. The creation of the Rolls-Royce Small Modular Reactor (SMR) business was announced following a £195m cash injection from BNF Resources, and Exelon Generation to fund the plans over the next three years. (3)

Rolls Royce has submitted the SMR design to the GDA regulatory process, in a bid to secure clearance from the Department for Business, Energy and Industrial Strategy (BEIS) and the UK's nuclear and environmental regulatory bodies. It expects the process to take around four to five years, during which time it plans to *“engage in a range of parallel activities”* including the SMR factory development, potential siting for future nuclear plants, and *“commercial discussions”*. (4) Before the ONR approval process begins, the company must first get clearance from the government to submit its designs, which is expected by around March next year. (5)

As expected, Moorside, Wylfa and Trawsfynydd have all been mentioned as potential sites for an SMR. Tees Valley mayor Ben Houchen also wants Hartlepool to be on the list. (6)

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1. New Nuclear Monitor 7<sup>th</sup> March 2019 <https://wiseinternational.org/sites/default/files/NM872-873-final.pdf>
  2. Modern Power Systems 9th Nov 2021 <https://www.modernpowersystems.com/news/newsr-rconfident-of-smr-delivery-by-2030-9227522>
  3. BBC 8th Nov 2021 <https://www.bbc.co.uk/news/business-59212983>
  4. Business Green 17<sup>th</sup> Nov 2021 <https://www.businessgreen.com/news/4040557/rolls-royce-pushes-forward-470mw-smr-nuclear-plant-design>
  5. Proactive Investor 17th Nov 2021 <https://www.proactiveinvestors.co.uk/companies/news/966515/rolls-royce-attracts-qatar-investment-as-it-begins-nuclear-regulatory-approval-process-966515.html>
  6. Daily Mail 10th Nov 2021 <https://www.thisismoney.co.uk/money/markets/article-10188387/Hartlepool-Rolls-Royce-mini-nuclear-reactor.html>

### 3 Wylfa

In October it was reported that two groups had been speaking to the Department for Business, Energy and Industrial Strategy about the possibility of building at Wylfa on the island of Anglesey. A consortium involving US engineering firm Bechtel has proposed building a large Westinghouse AP1000 reactor. Talks have also taken place with UK-based Shearwater Energy, which has hybrid plans for small nuclear reactors and a wind farm. (1)

The AP1000 is the very reactor that was being built at V.C. Summer in South Carolina and which bankrupted Toshiba Westinghouse in 2017. After huge overspending the project was abandoned 40% of the way into construction.

Under legislation passed by the South Carolina Public Services Commissioners in 2008—but strongly opposed by civil society groups—construction costs for the V.C. Summer reactors were to be paid by state ratepayers. On 31 July 2017, Santee Cooper and SCANA Corporation (the parent company of South Carolina Electric & Gas or SCG&E) decided to terminate construction of the V.C. Summer reactor project. At the time of cancellation, the total costs for completion of the two AP-1000 reactors at V.C. Summer was projected to exceed US\$25 billion—a 75 percent increase over initial estimates. Dominion, which took over SCANA in January 2019, will be charging South Carolina ratepayers an additional US\$2.3 billion over the next two decades, having already paid \$4 billion, for the collapsed V.C. Summer project. (2)

On 16<sup>th</sup> November, Steve Thomas, Emeritus Professor of Energy Policy at Greenwich University, told the House of Commons Nuclear Energy Finance Bill Committee that the V.C. Summer experience shows the folly of the RAB model. The plant has added 18% to bills in South Carolina.

Since October there has been more of a focus on the fact that Rolls Royce is considering Wylfa and Trawsfynydd as possible locations to build small nuclear power stations. (3)

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1. BBC 1<sup>st</sup> October 2021 <https://www.bbc.co.uk/news/uk-wales-politics-58763510>
  2. See World Nuclear Industry Status Report 2021 page 162 <https://www.worldnuclearreport.org/World-Nuclear-Industry-Status-Report-2021-773.html>
  3. New Civil Engineer 11th Nov 2021 <https://www.newcivilengineer.com/latest/rolls-royce-eyes-wylfa-site-for-small-modular-nuclear-reactors-11-11-2021/> and Nation Cymru 9<sup>th</sup> Nov 2021 <https://nation.cymru/news/nuclear-set-to-return-to-wylfa-and-trawsfynydd-as-rolls-royce-secures-funding-for-mini-reactors/>

## 4 Bradwell

Bradwell B (BRB), which is a partnership between the Chinese Company, CGN – with a 66.5% share and EDF Energy with a 33.5% share is hoping to build a Chinese reactor – the UKHPR100 at Bradwell in Essex. BRB appealed to the Planning Inspectorate against the refusal by Maldon District Council of Planning Permission for further land investigations at Bradwell. The Appeal was successful. But this does not give a green light to a future nuclear power station at Bradwell, and given the current hostility to Chinese involvement in UK Infrastructure seems unlikely to progress much further. The Blackwater Against New Nuclear Group (BANNG) objected to land investigations on the grounds that they were unnecessary since the site is wholly unsuitable, unsustainable and unacceptable for the development of a mega nuclear power station and spent fuel stores.

The Planning Inspector chose to uphold the Appeal on the narrow grounds that the works would be temporary and would create little disruption and disturbance to the environment and human welfare. The Inspector declined to take into account the question of need for new nuclear, relying on the 2011 National Policy Statement on Nuclear (EN6) which deemed Bradwell a ‘potentially suitable’ site. In its latest policy statements the Government is silent on Bradwell and the project seems likely to be dropped altogether on geopolitical grounds.

On 25<sup>th</sup> November The Times reported that China would be cut out of future involvement in developing new nuclear power stations. Boris Johnson said that a potential adversary could have no role in Britain’s “critical national infrastructure”. The Prime Minister, asked by Labour spokesperson, Matthew Pennycook if he could “confirm unequivocally today that plans for China General Nuclear to own and operate its own plant at Bradwell in Essex have been abandoned”, said:

*“Clearly, one of the consequences of our approach on critical national infrastructure in the National Security and Investment Bill is that we do not want to see undue influence by potentially adversarial countries in our critical national infrastructure. That is why we have taken the decisions that we have. On Bradwell, there will be more information forthcoming. What I do not want to do is pitchfork away wantonly all Chinese investment in this country, or minimise the importance to this country of having a trading relationship with China.” (3)*

1. BANNG 15th Nov 2021 <https://www.banng.info/news/press-releases/brb-appeal-upheld/>
2. Times 25<sup>th</sup> Nov 2021 <https://www.thetimes.co.uk/article/china-blocked-from-funding-nuclear-power-stations-by-boris-johnson-n6mxqcffq>
3. Hansard 24<sup>th</sup> Nov 2021 <https://hansard.parliament.uk/commons/2021-11-24/debates/262956D6-9E48-4B3A-8DD0-3F59297DE3A7/OralAnswersToQuestions>

## 5 Hunterston

Reactor 3 is expected to come off line at the end of November and Reactor 4 before 7th January 2022. There would then be 2 months of statutory outage and then defueling would commence. EDF is hoping to despatch 4 rather than 2 spent fuel flasks every week to Sellafield during defueling. Defueling will take around three years and will continue to draw on the skills of EDF's specialist staff and contractors. It will then take around 5 or 6 years to prepare the plant for a period of 40 to 50 years of care and maintenance. Final dismantling could begin around 2070.

## 6 New Nuclear in Scotland

Leader of the Scottish Labour Party, Anas Sarwar, says nuclear power should be part of the mix on energy. He has also called for a statutory "just transition commission" to be established to help workers move out of the oil and gas industry. He said: *"I think we have to be honest about future opportunities and I think nuclear power has to be part of the mix. "I'm not saying nuclear power has to be the priority, or the lead. But it has to be part of the mix to have a diverse energy supply."* Sarwar insisted nuclear power could mean lower fuel bills for consumers at a time of rising inflation. (1)

In September Sarwar announced plans for a Scottish Energy Transition Commission to outline how Scotland can protect and create highly skilled jobs in the transition to a net-zero economy. The commission will be chaired by pro-nuclear former Labour Energy Minister Brian Wilson. It will support the development of Scottish Labour energy policy and advise on how the transition to net-zero can deliver for the working people of Scotland. It will also look at the failures of the current energy market, which has led to spiking prices this winter, the role of public energy companies and Scotland's energy mix. (2)

The Bella Caledonia website described Wilson as *"a devout nuclear enthusiast"*. Sarwar told the BBC that *"I think we should consider potential new (nuclear power) plants"* (3) and certainly with a nuclear lobbyist chairing this is where they'll end up. Journalist Dominic Hinde points out: *"This is a little odd in that Scotland already meets almost a hundred per cent of its electricity needs from renewables and is set to surpass this. Most emissions now come from heating, agriculture and transport."* (4)

Dr Richard Dixon, Director of Friends of the Earth Scotland, called Scottish Labour's drift towards nuclear power "*a tragic mistake*". Nuclear is slow to build, eye-wateringly expensive and dangerous. There is still no agreed solution for nuclear waste, which will need monitoring for many thousands of years. It is neither a solution to short-term energy needs nor to the climate crisis.

Dixon said the Scottish Energy Transition Commission is Scottish Labour's plan to keep the pressure up on the Scottish government's official Just Transition Commission, and should have been welcome, but giving it to the former 'Minister for Hunterston' devalues it. Anas Sarwar was quoted saying he supports a "*diverse energy supply*", which is standard union code for more nuclear – and thinks "nuclear is a key part of that and it's something that I think we should fundamentally explore". For many years the Scottish Conservative manifesto for every election said we should have two new nuclear power stations in Scotland. It became a running joke because they knew it was never going to happen and they quietly dropped any mention of nuclear a couple of elections ago. The tragedy of Labour finding a new enthusiasm for the ultimate unsustainable form of energy is that it was a Labour First Minister who put a stop to the nuclear industry's ambitions in Scotland. Jack McConnell, despite massive pressure from Tony Blair's government, said in 2005 that Scotland would use planning powers to block any proposals for new reactors in Scotland unless there was an answer to the question of permanent storage of radioactive waste, something that is no closer today than it was then. Scottish Labour's drift into being pro-nuclear will please no-one but the GMB union and Brian Wilson. It is a betrayal of one of their greatest achievements in government in Scotland. (5)

Meanwhile, North Ayrshire Conservative councillor Tom Marshall has called for a new state-of-the-art 'mini' nuclear reactor to be built at Hunterston. (6)

According to a Panelbase survey for The Times 37% of Scots asked about the idea of building nuclear power stations in Scotland as fossil-fuel use is cut back expressed support, while only 32% were opposed. When asked if they supported nuclear power to replace energy currently produced by fossil fuels, 57% of respondents felt it was probably or definitely necessary while 26% indicated it was not or probably not necessary. A further 17% were undecided. Liam Kerr, net-zero and energy spokesman for the Scottish Conservatives, called on the SNP to abandon its opposition to nuclear energy. (7)

Others joining a pro-nuclear clamour include Magnus Linklater who complains that "*Without Torness, in a wind-free summer like this year's, Scotland will have to rely on oil and gas courtesy of Vladimir Putin, imports from Norway or — irony of ironies — nuclear power from France.*" (8)

And Lord Bird, co-founder of The Big Issue, has somehow got the misconceived idea that nuclear power can help to solve fuel poverty. Brian Wilson, the former UK energy minister, has supported his call. (9)

Unsurprisingly, the GMB union is also demanding the Scottish Government thinks again on nuclear power. (10)

See 1 page briefing on why nuclear power isn't a solution to climate change here:

[https://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2021/11/Nuclear\\_no\\_solution\\_to\\_Climate-October-2021.pdf](https://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2021/11/Nuclear_no_solution_to_Climate-October-2021.pdf)



1. Daily Record 19th Nov 2021 <https://www.dailyrecord.co.uk/news/politics/anas-sarwar-says-nuclear-must-25500180>; Times 20th Nov 2021 <https://www.thetimes.co.uk/article/nuclear-has-a-place-in-our-energy-future-says-labour-hk2fxfw3c>; The National 19th Nov 2021 <https://www.thenational.scot/news/19729831.anas-sarwar-doubles-nuclear-power-claims/> Herald 19th Nov 2021 <https://www.heraldscotland.com/politics/19730126.anas-sarwar-nuclear-part-mix-scotlands-future-energy-demand/>; Scotsman 19th Nov 2021 <https://www.scotsman.com/news/politics/nuclear-should-be-part-of-the-mix-of-scottish-energy-says-anas-sarwar-as-he-sets-out-climate-policies-3464781>; STV 19th Nov 2021 <https://news.stv.tv/politics/sarwar-nuclear-power-should-be-part-of-the-mix-in-climate-plan>
2. Scotsman 26th Sept 2021 <https://www.scotsman.com/news/politics/anas-sarwar-outlines-plans-to-create-highly-skilled-jobs-in-a-net-zero-economy-3396353>
3. See <https://twitter.com/GlennBBC/status/1443293552696561671?s=20>
4. Bella Caledonia 30<sup>th</sup> Sept 2021 <https://www.bellacaledonia.org.uk/2021/09/30/labour-go-nuclear/>
5. Scotsman 21<sup>st</sup> Oct 2021 <https://www.scotsman.com/news/opinion/columnists/why-scottish-labours-drift-towards-nuclear-power-is-a-tragic-mistake-dr-richard-dixon-3427011>
6. Largs & Millport Weekly News 12th Oct 2021 <https://www.largsandmillportnews.com/news/19627889.fresh-call-mini-nuclear-reactor-hunterston-site-moves-towards-closure/>
7. Times 15<sup>th</sup> Nov 2021 <https://www.thetimes.co.uk/article/nearly-two-fifths-of-scots-back-building-of-new-nuclear-plants-xvkxs76xp>
8. Times 8<sup>th</sup> Nov 2021 <https://www.thetimes.co.uk/article/scotland-must-reconsider-the-nuclear-option-t6l3hww9p>
9. Times 7th Nov 2021 <https://www.thetimes.co.uk/article/go-nuclear-to-end-fuel-poverty-snp-urged-ntw86xqn5>
10. Daily Record 3rd Nov 2021 <https://www.dailyrecord.co.uk/news/politics/scotland-must-build-nuclear-power-25366835>

## 7 Radioactive Discharges

The OSPAR Convention for the Protection of the North-East Atlantic has discreetly postponed its commitment to reduce radioactive discharges at sea from 2020 to 2050. Following a meeting on October 1st, the participating ministers discreetly postponed until 2050 the commitment made in 1998 in Sintra to reduce radioactive discharges into the sea to levels close to zero by 2020. Once again, international commitments to the environment are being disregarded. This does not bode well for the upcoming COP26 in Glasgow. France is the first beneficiary of this 30-year postponement because, with its reprocessing plant at La Hague, it has the highest radioactive discharges to the sea in Europe. And these discharges are not decreasing, as shown by the results of the citizen monitoring of radioactivity in the environment carried out by ACRO for over 25 years. (1)

The “Cascais Declaration” signed at a Ministerial Meeting in October 2021 said:

*"We aim to achieve zero pollution by 2050 and commit to reduce single-use plastic items and maritime related plastic items on our beaches by 50% by 2025 and 75% by 2030. We will take action to eliminate anthropogenic eutrophication and continue to reduce hazardous and radioactive substances to near background levels for naturally occurring substances and close to zero for human made substances." (2)*

Remi Parmentier, who was the lead Greenpeace International campaigner when the Sintra Declaration was signed in 1998 tweeted:

*"30 yrs backward presented as progress. The OSPAR Commission is using Orwellian language: "We \*aim\* to achieve zero pollution by 2050" ["aim", not "commit"], wiping out the previous target date (agreed in 1998) which was...2020."*

Meanwhile, the NDA is now saying all Magnox reprocessing will be completed in 2022. The Magnox reprocessing plant was expected to close in 2020 before delays caused by Covid. (3)

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1. ACRO 19th Oct 2021 <https://www.acro.eu.org/the-ospar-convention-for-the-protection-of-the-north-east-atlantic-discreetly-postpones-its-commitment-to-reduce-radioactive-discharges-at-sea-from-2020-to-2050/>
  2. OSPAR Cascais Declaration October 2021  
<https://www.ospar.org/site/assets/files/46205/cascaisdeclaration2021.pdf>
  3. NDA Mission Progress Report 2021. 4<sup>th</sup> Nov 2021  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1031213/NDA\\_Mission\\_Progress\\_Report\\_2021.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1031213/NDA_Mission_Progress_Report_2021.pdf)

## 8 Fusion

Four sites in England and one in Scotland are on the final shortlist of sites to be the home of the UK's prototype fusion energy plant. The government is backing plans for the Spherical Tokamak for Energy Production (Step) with a final decision on its location expected at the end of 2022. The UK Atomic Energy Authority (UKAEA) hope the plant will be operational by the early 2040s. The five shortlisted sites are: Ardeer, North Ayrshire; Goole, East Riding of Yorkshire; Moorside, Cumbria; Ratcliffe-on-Soar, Nottinghamshire; Severn Edge, Gloucestershire; They were whittled down from a longlist of 15 sites, which included Chapelcross near Annan and Dounreay. (1)

The Ardeer peninsula in North Ayrshire was once home of the world's largest dynamite factory. The UK government has so far pledged £222 million towards creating the prototype power plant. Researchers from the University of Glasgow helped to co-ordinate the bid to host Step. (2)

The next phase of the assessment process will consider the likely opportunities of deploying STEP at each of the 5 shortlisted sites and involve community engagement to explain the proposals.

Scottish ministers have declined to support or oppose the latest proposals. The Government's response appears to suggest the plant will be considered in a review of energy strategy, which until

now has been firmly against any new nuclear power plants. The Ardeer shortlisting has been welcomed by SNP North Ayrshire and Arran MP, Patricia Gibson. (4)

The Scottish Campaign for Nuclear Disarmament (CND) has said that this latest effort to extol the virtues of nuclear fusion as a “low carbon” source of energy is to keep the industry “alive” due to the UK being a “nuclear weapon state”. (5)

The Irvine Times reports that officials from the UK Atomic Energy Authority have paid a second visit to the Ardeer site to build their understanding of the site’s potential to host STEP as they make their final deliberations ahead of an announcement, expected next spring. The bid for the North Ayrshire site is being led by the Fusion Forward (Ardeer) consortium, which represents NPL Group, which owns the land, North Ayrshire Council and the University of Glasgow. (6)

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1. BBC 14<sup>th</sup> October 2021 <https://www.bbc.co.uk/news/uk-england-cumbria-58911210>
  2. Times 15<sup>th</sup> Oct 2021 <https://www.thetimes.co.uk/article/former-dynamite-factory-could-be-uks-first-fusion-energy-plant-vcqdwbdc>
  3. Ardrossan Herald 14<sup>th</sup> Oct 2021 <https://www.ardrossanherald.com/news/19647404.ardeer-shortlist-prototype-fusion-energy-plant/>
  4. The National 24<sup>th</sup> Oct 2021 <https://www.thenational.scot/news/19668665.pressure-grows-scots-government-oppose-nuclear-fusion-site-ayrshire/>
  5. The National 15<sup>th</sup> Oct 2021 <https://www.thenational.scot/news/19651051.scottish-cnd-slam-fusion-reactor-attempt-keep-industry-alive/>
  6. Irvine Times 25<sup>th</sup> November 2021 <https://www.irvinetimes.com/news/19739740.north-ayrshire-nuclear-plant-takes-next-step-towards-thousands-jobs/>

## 9 Climate Targets

The Scottish Government has missed its targets on reducing climate emissions in five of the seven sectors set out in its 2018 plan to tackle climate change. Environmental activists said the missed targets painted a “*disappointing picture of widespread failure*” on emissions reductions. They worry that static or increasing annual emissions in key sectors mean Scotland risks squandering good progress made in other areas. Emissions from transport are the furthest off course and it remains Scotland’s highest emitting sector. It produced 1.3 million tonnes more GHGs than it would have had its target for 2019 been met. The second-highest emitting sector, industry, was also the second-furthest off course. It produced 500,000 tonnes more than its 2019 target, but did show an 8.5 per cent decrease in annual emissions from 2018. The other three sectors lagging behind their targets – waste, services and the residential sector – either remained at the same level as 2018 or showed only incremental cuts. The services category includes emissions from public and private sector buildings. (1)

## Emissions figures 2019

Sector	2019 Actual Emissions (MTCO <sub>2</sub> e)	2019 emissions envelope (MTCO <sub>2</sub> e)	Pass/Fail?
Agriculture	7.5	8.4	PASS
Electricity	2.0	2.6	PASS
Waste Management	1.5	1.2	FAIL
Industry	10.7	10.2	FAIL
Residential	6.2	6.1	FAIL
Services	3.2	2.8	FAIL
Transport	13.9	12.6	FAIL

Scotland has also missed its renewable heat target. Only 6.4% of 'non-electrical heat demand' was met by renewable sources, such as heat pumps last year, compared to the SNP Government's target of 11%. The figures showed the amount of heat generated from renewable sources declined in 2020. The Scottish Government blamed reduced heat output from biomass systems "at a small number of industrial sites", but opposition parties said the figures disclosed "the gulf between the SNP's spin during Cop26 and reality". (2)

Chris Stark, chief executive of the Committee on Climate Change (CCC), warned that the target of cutting Scotland's carbon emissions by 75% by 2030 may have been "over-cooked". The goal is a "huge challenge" and it's questionable how this would be achieved faster than the rest of the UK. He said "we haven't seen" the type of policies from the SNP-Green coalition required to meet the deadline and it would mean more radical measures to decarbonise homes and industry.

Stark stressed he was not concerned about the failure of the Scottish Government to meet its last three annual emissions targets, stressing "it's always better to look in the medium term". But he added: "The target that matters is the 2030 target and it's really bloody difficult." At an appearance in front of MSPs earlier this year, Stark described the 2030 strategy as "on the fringes of credibility".

SNP ministers have missed their annual targets for cutting carbon emissions for three years running, prompting Ms Sturgeon to publish a catch-up plan. The SNP-Green coalition published plans for more than a million households to 'rip out' their gas boilers by 2030 and replace them with low emissions systems such as heat pumps. However, Scottish ministers only committed £1.8 billion towards the estimated £33 billion cost. (3)

The Climate Change Update Plan was published in December 2020

<https://www.gov.scot/binaries/content/documents/govscot/publications/strategy-plan/2020/12/securing-green-recovery-path-net-zero-update-climate-change-plan->

20182032/documents/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero/govscot%3Adocument/update-climate-change-plan-2018-2032-securing-green-recovery-path-net-zero.pdf

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1. The Ferret 23rd Oct 2021 <https://theferret.scot/scottish-government-missed-climate-targets/>
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## 10 Carbon Capture, Utilisation and Storage (CCUS)

The Scottish Government's net zero strategy stresses that carbon capture and storage “*is essential*” to the vision, adding it is “*a key to industrial decarbonisation*”. Its vision for cutting emissions by 2030 by 75% is heavily reliant on ramping up carbon capture technology. But now the UK Government has overlooked a Scottish carbon capture project for funding, including the Acorn project, based in the north east. It was hoped the Acorn project could open by 2025 when 2 million tonnes of carbon could be stored a year, scaling up to 10 million tonnes by 2030.

The Climate Change Committee (CCC) has warned the Scottish Government may now be forced to redraw large parts of the already hugely ambitious net zero plans. Chris Stark, CEO of the CCC, says Scotland may have to cut emissions deeper and quicker in farming and industry – suggesting the current plan “*is not going to work*” without CCUS being scaled up in time.

Critics have warned that carbon capture technology should not be relied upon to decarbonise economies, with worries it remains unproven at the industrial scale needed, the fact it does not capture 100% of carbon dioxide and is largely used currently to aid exploration of fossil fuels. But Stark says “*In our assessment for the UK, we couldn't construct a scenario for achieving net zero by 2050 without CCS.*” (1)

According to the Center for Climate and Energy Solutions, there are currently 26 large-scale carbon capture projects in use globally, with 34 more in different stages of development. (2) The Global Status of CCS report published in October by the Global CCS Institute says there are now 27 operational carbon capture facilities around the world, with a further 102 under development and four in the construction phase. (3)

But, according to a recent study in the Energy Policy Journal most CCUS projects initiated in the past three decades have failed. (4)

Cost and the length of time projects take to develop are a problem as well as fears that carbon capture will be used as a way for countries with heavy fossil fuel production to continue to extract and sell them. (5)

One of the world's top CCS projects is lagging far behind on its targets. Project owner Chevron admitted breaching the terms set by regulators for the approval of its \$54 billion Gorgon liquefied natural gas processing hub in Australia after the CCS plant attached to the project failed to meet the guidelines set for carbon storage. The CCS plant, Australia's largest, was supposed to lock away 80% of Gorgon's gas field emissions over its first five years, a period that ended in July 2021. But at that point, the CCS facility, which only began operating two years ago, had captured just 5 million metric tons of CO<sub>2</sub>. By one analyst's calculations, it should have captured approximately another 4.6 million metric tons to meet its commitments, meaning it had a shortfall of around 48 percent.

Even before the Gorgon shortfall, the technology already had a poor track record. A December study found that more than 80 percent of the 39 CCS projects attempted in the U.S. have ended in failure. The last such U.S. project, attached to a coal-fired power plant, NRG Energy's Petra Nova plant in Texas, was shuttered permanently earlier this year.

Failures have been frequent elsewhere as well. In the U.K., for example, the National Audit Office said in 2017 that CCS was "currently inconceivable" without government support, after investigating the collapse of a 100-million-pound (\$136 million) project. (6)

Blue hydrogen is being promoted strongly by fossil fuel companies as a means of decarbonization. It would involve capturing and storing CO<sub>2</sub> emissions from methane gas used to create the hydrogen. Without carbon capture and storage (CCS), the emissions from blue hydrogen would also be higher than those of fossil gas because of the additional energy required to drive the process of hydrogen production and the carbon capture process.

Jan Rosenow and Richard Lowes say after years of pilot projects and substantial public investment in coal power plants with CCS, only a single commercially operating facility remains—one 115 megawatt unit of the Boundary Dam Power Station in Saskatchewan. Its primary purpose is to provide a low-cost source of carbon dioxide to the Weyburn Oil Field for enhanced oil recovery. There is a significant risk that blue hydrogen will not deliver on its promises and could lock society into ongoing greenhouse gas emissions. (7)

A new article in the One Earth journal says the cost of renewable technologies has plummeted so fast that it is unclear whether other solutions such as carbon capture and storage (CCS) are necessary. Cost reductions in renewables reduce the value of CCS by 15%–96%, depending on the energy system sector under consideration. CCS is therefore less valuable to policymakers due to cost reductions in renewables. Nevertheless, CCS retains value for decarbonizing industry and removing CO<sub>2</sub> from the atmosphere, and targeted CCS deployment should be prioritized. (8)

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8. Neil Grant et al, Cost reductions in renewables can substantially erode the value of carbon capture and storage in mitigation pathways, *One Earth* 19<sup>th</sup> November 2021 <https://www.sciencedirect.com/science/article/abs/pii/S2590332221006102>

## 11 Draft Hydrogen Plan

On 10<sup>th</sup> November, the Scottish Government published its draft Hydrogen Action Plan which articulates the actions that will be taken over the next five years to reduce greenhouse gas emissions while ensuring a just transition. It has set a clear ambition of 5GW installed hydrogen production capacity by 2030 and 25GW by 2045. The Action Plan is a companion to the Policy Statement published last December. The Government has committed £100 million of funding towards the development of the hydrogen economy over the next five years.

The Government says it believes “*producing renewable and low-carbon hydrogen at scale [Green and Blue Hydrogen] and showing that it can be used to meet challenging energy demands from difficult-to-decarbonise sectors will be a key part of the next stage of Scotland’s energy transition pathway.*”

The Action Plan says Hydrogen may play a key role in decarbonising our industrial clusters, supporting the just transition of the workforce in high carbon sectors in the North East of Scotland, and provide opportunities for our islands and rural communities to maximise the benefit of their vast access to renewable resources. A key focus of this action plan will be to support the development of Regional Hydrogen Energy Hubs.

The actions in this plan are designed to:

- drive Scotland’s hydrogen production capability to meet an ambition of 5GW of renewable and low-carbon hydrogen by 2030 and 25GW by 2045;
- address current barriers to the uptake of hydrogen including high production costs;
- support the growth of Regional Hydrogen Energy Hubs;

- encourage demand for hydrogen by supporting hydrogen use and developing our supply chain capability and export potential;
- secure broad economic benefit from public sector and private sector support for development of regional hydrogen production and use;
- encourage the development of a strong hydrogen sector in Scotland which supports a just transition to net zero. (1)

The Action Plan points to a commitment to secure an additional 8-12GW of installed onshore wind by 2030. A strong onshore wind sector will support the development of a range of small- and large-scale renewable hydrogen projects. A new Onshore Wind Policy Statement will be published in 2022. The Scottish Government is consulting on a new 2030 target for onshore wind. Scotland currently hosts the bulk of the UK's installed generation capacity – 8.4GW, and the Government is proposing to secure at least an extra 8GW of capacity by the end of the decade, and perhaps 12GW. (2)

Within Scottish waters, there are currently 2GW of offshore wind farms constructed and a further 4GW in development. The latest round of offshore seabed leasing, ScotWind, which closed in July 2021, could generate a further 10GW of wind power. Successful bidders will be announced in early 2022 and further regular leasing rounds are planned in the forthcoming years.

The Scottish Government's analysis tells us that in the next five years it is clear that industrial use of hydrogen and the use of hydrogen in the transport sector will create the initial demand for increasing volumes of hydrogen. Led by industry, and the private sector, several regional hydrogen clusters or 'hubs' are forming. Some are already producing renewable hydrogen and supporting demand for hydrogen fuels, e.g., Aberdeen, while others are advancing to renewable hydrogen production, such as the Hydrogen for Glasgow project that links to hydrogen production from the renewable energy generated by the Whitelee Wind Farm operated by Scottish Power. Other potential hubs include the Cromarty Firth and the Scottish Islands – Outer Hebrides, Shetland and Orkney.

## Whitelee

The UK government has awarded £9.4 million to a new hydrogen project at the Whitelee Windfarm in East Renfrewshire. The project will look to produce hydrogen for storing energy and providing zero-carbon fuel. The cash will go towards developing the country's largest electrolyser, which converts water in to hydrogen. The hydrogen produced can be easily stored and transported to where it is needed. A partnership, made up of ScottishPower, ITM Power and BOC, is currently going through the planning process for the new facility and aims to have green hydrogen available to the commercial market by 2023.

One use for the hydrogen generated will be to support local transport. The facility is expected to provide enough hydrogen to fuel 225 buses travelling to and from Glasgow to Edinburgh each day. Many experts argue that for public transport vehicles like buses, hydrogen is too inefficient and electricity would be a better, cheaper alternative. However, Dr Graham Cooley, chief executive of ITM Power, argues that hydrogen is particularly good for heavy vehicles that need to travel longer distances and need a long range. (3)

Meanwhile, A new steering committee backed by Sir Ian Wood's Energy Transition Zone (ETZ) has set out a vision of how 20% of the UK's hydrogen capacity could be met by North-east Scotland by 2032. The North East Scotland Hydrogen Ambition (NESH2A) steering committee believes pioneering projects in the region could deliver 29,000 jobs by 2040. The group will co-ordinate efforts to support the delivery of over 1 gigawatt (GW) of low-carbon hydrogen production target by 2032 – 20% of the UK's 5GW target. A new "Hydrogen Ambition" report published by the group sets out the potential of current hydrogen projects across the north east including H2 Aberdeen, the Aberdeen Hydrogen Hub, Acorn Hydrogen Project at St Fergus, and ERM Dolphyn. (4)

The Acorn Hydrogen project would produce blue hydrogen, so relies of Carbon Capture and storage, but the ERM Dolphyn project is developing the production of 'green' hydrogen at scale from floating, offshore wind turbines.

## Shetland

Aker Offshore Wind and Aker Clean Hydrogen, together with DNV, used the COP26 conference to unveil a project utilising 10 GW of floating offshore wind capacity to power multiple floating installations to produce green hydrogen for onwards transmission to a net-zero hydrogen refinery on Shetland. The refinery would produce a range of zero carbon energy solutions for local consumption and export across the world, including ammonia, liquid hydrogen, and synthetic fuels. The Aker companies and DNV are now embarking on a consultation project with the authorities and businesses to mature the project towards a future investment decision. (5) Ocean Winds (OW) and Aker Offshore Wind (AOW) are hoping their proposals will create thousands of jobs and leverage billions of pounds worth of investment. There are also plans to create a "major fabrication yard" that would build floating platforms and wind turbines. (6)

Meanwhile, up to £160 million of government funding is now available to developers and manufacturers looking to invest in UK large-scale floating offshore wind ports and factories. It is expected that the £160 million will be boosted by private sector investment, helping to develop port infrastructure capable of mass-producing floating offshore wind turbines and installing them out at sea. This in turn will create thousands of new jobs while reducing the need to import from overseas, the government said. Indeed, using the deep waters off the Scottish coast offers "huge opportunities" for Scotland's coastal communities. Additionally, the Celtic Sea has also been identified as a major development opportunity for the offshore wind sector due to its combination of deep waters and strong winds. (7)

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7. Current 2<sup>nd</sup> Nov 2021 <https://www.current-news.co.uk/news/government-backs-floating-offshore-wind-ports-with-160m-funding>

## 12 Tidal Power

The UK government has announced its biggest investment in tidal power. It says this will kickstart a new chapter for the UK's tidal energy industry and strengthen energy security by adding to our diverse, renewable electricity supply and create jobs across the UK. The UK government will invest £20 million per year in Tidal Stream electricity as part of its flagship renewable energy auction scheme. As part of the fourth allocation round of the Contracts for Difference Scheme due to open next month, the UK government will ensure that £20 million per year will be ringfenced for Tidal Stream projects, giving the marine energy sector a chance to develop their technology and lower their costs in a similar way to the UK's world-leading offshore wind industry. This will bring the total funding for this allocation round to £285 million per year. (1)

However, the SNP said the promised funding fell more than £50 million short of what was required. Ian Blackford, the SNP's Westminster leader, said that the announcement of the funding was a "*partial Tory U-turn*" over support for tidal schemes but "*it does not go anywhere near far enough*". He added: "*The minimum required was a ringfenced fund of at least £71 million.*" (2)

Nova Innovation and Atlantis energy have been calling on the UK government to back an industry that delivers jobs, investment, and homegrown renewable power. The two companies jointly hosted the leader of the SNP in Westminster, Ian Blackford, and his Commons colleagues, Steven Flynn, Alan Brown, and Deirdre Brock, at Nova's headquarters and manufacturing facility in Leith, to outline their plans.

Between the two companies, they have delivered over half of the tidal stream devices operational worldwide and are developing sites in the UK, Canada, Japan and France. Both companies deploy subsea turbines which generate predictable, renewable power with no visual impact. They say the MeyGen site has all the necessary consents to deploy a further 80MW of tidal power if it had a route to market. (3)

Jamie Stone, the Liberal Democrat MP for Caithness and Sutherland has joined the call for the ringfencing of money in the upcoming Contract for Difference auctions. A ring-fence for tidal stream energy would ensure the industry is able to develop, up-scale and deliver these projects by offering a clear route to market. This is the same opportunity that has been afforded to floating offshore wind, which enjoys a ring-fenced budget of £24million from the available £55m. (4)

A new study shows that the UK and British Channel Islands could generate 11% of their shared electricity demand each year using tidal stream turbines. This would require installing 11.5

gigawatt's worth of energy in the strongest tidal streams – roughly the same as the installed capacity of offshore wind in the UK to date. It took the offshore wind industry in the UK 20 years to reach this level. If tidal stream power is going to contribute to the country's future electricity needs, turbine installations must be ramped up soon. (5)

Meanwhile, Orbital Marine Power, is to lead a €26.7 million pan-European project to accelerate the commercial deployment of floating tidal energy.

The project consortium will receive €20.5 million of grant support from the European Union's Horizon 2020 research and innovation programme to develop a multi-vector energy system. This system will combine predictable floating tidal energy, wind generation, grid export, battery storage and green hydrogen production. The project will see the installation of the next generation Orbital turbine at the European Marine Energy Centre (EMEC) in Orkney where Orbital's O2, the world's most powerful floating turbine, is currently undergoing testing. (6)

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## 13 Submarine Dismantling

The UK's Submarine Dismantling Project hopes to dismantle 27 of the UK's de-fuelled, nuclear-powered submarines after they have left service with the Royal Navy.

A demonstrator submarine is being used to define and refine the dismantling process. At Rosyth, the removal of low-level radioactive waste from the first two submarines, Swiftsure and Resolution, has been successfully and safely completed. As the unique approach is developed, work continues with the removal of low-level radioactive waste from a third submarine, Revenge. A fully developed process for steady state submarine dismantling should be ready by 2026. As the demonstrator programme progresses, the outcomes will provide more certainty in the future costs to dismantle the Devonport-based submarines. It is not MoD policy to pre-announce the funding of its projects for reasons of protecting commercial interests."

REVENGE, entered the dry dock in Rosyth in late March 2020 to commence its LLW removal. The intent is to remove all LLW including large components such as steam generators and pressurisers. No nation has yet attempted this complex and challenging undertaking, so the MoD is currently putting in place the techniques necessary to remove all LLW for the first time to comply with safety and sustainability standards.

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## 14 Solar Scotland

Solar Energy Scotland has called on the government to set a minimum target of 4GW of installed solar capacity by 2030.

The Scottish government is already proposing 8-12GW onshore and 11GW offshore wind targets, but there is not a target for solar. An ambition of up to 6GW of solar would be possible, although for the moment the trade association is calling for 4GW. In order for the country to deliver its 'fair share' of UK solar power potential, as well as to support thousands of new jobs and generate low-cost energy, the government much increase its ambition.

*"For too long solar has been largely overlooked and suffered unconscious bias that Scotland's weather better suits other renewable energy technologies that harness power from wind and water,"* said Thomas McMillan, chair of Solar Energy Scotland. *"As a technology, solar can generate both electricity and heat, it is modular so can be deployed as a micro-renewable or at utility scale. It can be located in rural locations or urban centres. It can be partnered with a broad range of other technologies such as wind, battery, hydrogen and electric vehicles. It can make more efficient use of the electricity grid. Most importantly it has reduced in cost by 60% since 2010 making it low cost and affordable."*

Solar Energy Scotland identified a number of government policy interventions that could boost solar deployment, and level the playing field between Scotland and the rest of the UK. This includes increasing permitted development rights for commercial rooftop installations from the current 50kW to 5MW, maintaining complementary conservation grazing and biodiversity for farmers and removing the need for building warrants on rooftop schemes that duplicate and add cost to existing requirements for quality control.

Additionally, onsite solar and storage should be made exempt from non-domestic rates and energy policy should be made to spread the cost of electricity grid reinforcements between solar, energy storage and wind generation. The call echoes that made by the trade association ahead of the Scottish election early this year, when it wrote to the major parties calling for a boost to solar.

1. Solar Portal 12th Oct 2021

[https://www.solarpowerportal.co.uk/news/amp/solar\\_energy\\_scotland\\_calls\\_for\\_4gw\\_by\\_2030\\_target\\_to\\_realise\\_solars\\_full\\_p](https://www.solarpowerportal.co.uk/news/amp/solar_energy_scotland_calls_for_4gw_by_2030_target_to_realise_solars_full_p)

## 15 Local Authorities Role in Tackling the Climate Emergency

The House of Commons Housing, Communities and Local Government Committee without better support for Local Government on local low-carbon transitions for buildings and transport, the UK will not meet its climate targets.

The report expresses disappointment that the Net-Zero Strategy included no time-bound, numerical commitments to increase funding levels for local authorities. The Committee's overarching call to action is for the Government to produce a long-term funding plan for local authority climate action, to support policy frameworks like the Net-Zero Strategy and give cash-strapped councils the confidence they need to invest in projects like electric vehicle (EV) charging networks, active transport networks and district heat networks. (1)

The report says:

*"Local authorities will be particularly important to ensuring a just transition to net zero, since no layer of government is closer to people or better able to tailor climate action to meet the needs of local communities. Only by harnessing local government can central government deliver a just transition that benefits all communities. Without that just transition, the Government will struggle to persuade the public to make the necessary changes."* (2)

It goes on to discuss developments in Scotland:

*"Local authorities in Scotland produce renovation schemes and local heat and energy efficiency strategies, and several are involved in a pilot scheme to provide equity loans, where individuals can borrow against the value of their property, secured against the sale of the property. A similar role for local authorities in England would also help ensure that the public is advised as to the choices available for retrofitting, so they have confidence it will be properly installed."*

The report also recommends the government come forward with a long-term funding plan for local authority climate action and outline the share of funding for retrofitting it anticipates will come from private investment. The report also calls on the government to consider offering tax incentives, which could include lower VAT, stamp duty and council tax, for energy efficient measures and homes. (3)

- Four out of five people surveyed from London, Manchester, Birmingham, Cardiff, Belfast and Glasgow believe mayors and city leaders should have more powers to cut carbon emissions. (4)

- Susan Aitken, the leader of Glasgow city council says she is seeking investment for a project which would use the River Clyde to generate power to supply energy to heat homes. Further proposals are to be unveiled relating to transport around the city, insulation for housing and modifications to homes and street layout. She added that under a £30 billion “Greenprint for Investment” programme the council would be inviting investors across the globe to discuss advancing the eco-friendly projects. (5) The Council’s new Green Deal document acts as a nine-year plan to transform the city and its economy in a way that combats the climate emergency and builds back from job losses and risks caused by covid. (6)
- Almost £11 billion of funding will be needed to transform homes across the Glasgow City Region into energy efficient properties – even before gas boilers are ripped out of homes to meet net zero targets. The “astounding costs” would mean up to £600 million of investment would be needed each year over the next 15 years to reach Energy Performance Certificate (EPC) level C. The Scottish Government has pledged for all homes to be upgraded to EPC band C by 2035, but only if it is “technically feasible and cost-effective” – with the latest figures throwing that strategy into doubt. (7)
- The Commonwealth Think Tank asks if Glasgow has done Scotland a favour by saying out loud how much it would cost to get all its housing stock up to reasonable energy efficiency standards but then unconvincingly fluffing the line about how it was going to pay for it? It prompted a debate we very much need to have which we’re not having. Heating houses in Scotland produces nearly three times as much carbon as all of our transport combined and many multiples of how much we belch out generating electricity. Everyone knows we need to fix this; no-one is talking about how to pay for it. But we really need to talk about it. Glasgow has priced the cost of retrofitting insulation to all its houses at about £11 billion and that is roughly in line with Common Weal’s costings for the whole of Scotland where we think that about £40 billion is needed (plus another £25 billion to replace current heating systems). This is big money because fixing the environmental performance of housing is expensive, time-consuming and varies greatly from house to house. We priced it at about £15,000 per household (£25,000 including heating) based on real-world case studies. (8)
- West Lothian has nearly halved its carbon emissions in eight years, building on the 40% cut it achieved after declaring its climate emergency policy in September 2019. Energy efficiency projects, replacing street lighting with low energy LED equivalents, investing in renewable and low carbon technologies such as biomass boilers and solar photovoltaic (PV) panels and reducing the volume of waste being sent to landfill have all played a part. (9)
- The City of Edinburgh Council has been awarded £10m by the Scottish Government to make Council buildings greener. The funding, which forms part of the Government’s Green Growth Accelerator programme, will see work start on energy efficiency improvements in up to 12 Council buildings. (10)
- Solar panels could be added to Edinburgh Castle after Historic Environment Scotland found it uses an “incredible” amount of energy, amounting to as much carbon as nearly 350 UK homes generate per year. Plans have now been unveiled to place solar panels on the roof of the castle, and a planning application has been submitted to the Council. This comes despite a 30 per cent decline in the castle’s total energy since 2008/09, along with a 40 per cent reduction in its emissions, with new boilers and sheepskin insulation introduced to better control loss of heat. (11)

- Other projects funded under the Green Growth Accelerator programme include a hydrogen refuelling module in Aberdeen; hydrogen production infrastructure in the Western Isles; natural coastline adaptations in the Highlands; and a water source heat pump retrofit at Strathclyde Park in North Lanarkshire. (12)

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  3. Infrastructure Intelligence 1<sup>st</sup> Nov 2021 <http://www.infrastructure-intelligence.com/article/nov-2021/engage-local-councils-or-struggle-meet-2050-net-zero-target-mp's-warn-government>
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  11. Telegraph 15th Nov 2021 <https://www.telegraph.co.uk/news/2021/11/15/edinburgh-castle-set-solar-panels-causes-much-pollution-nearly/>
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## 16 Just Transition Notes

The Scottish Government (SG) has outlined plans (1) to help secure a just transition to net zero, including opportunities for new green jobs. This comes as part of its Programme for Government 2021-22, which while detailing plans for the next year, also “sets the scene” for the next five years. As such, it includes the Scottish government’s commitment to implement the 24 recommendations from the Just Transition Commission.

These include commitments to design and implement a skills guarantee for workers in carbon intensive sectors and deliver this as part of the Green Jobs Workforce Academy. SG announced a

£100 million Green Jobs Fund in its Programme for Government 2020-21, to be paid out over five years with an aim of supporting new and increased opportunities for green job creation across Scotland. It builds on the country's Green New Deal, which was first announced in the 2019 Programme and included a £3 billion Green Investment Portfolio as well as a slew of environmental policies. This year specifically, the Scottish Government is to invest £240 million in an Energy Transition Programme, which will help industry to play a leading role in the development and deployment of new, low carbon technologies as well as supporting the development of hydrogen and carbon capture and storage.

This year, the Scottish government will also provide an additional £18 million for Warmer Homes Scotland to support those in fuel poverty through the heat transition, taking the total for this year to £50 million. It has also launched a second £30 million call for green heating and energy efficiency projects in social housing through the 'Social Housing Net Zero Heat Fund'. This comes as part of its commitment to invest at least £1.8 billion over this Parliament to make homes and buildings greener and easier to heat. (2)

The Scottish low carbon economy provided 21,400 jobs in 2019, the most recent data available, a nearly five per cent decrease from 2018. Trade unionists say this is only a “fraction of the green jobs promised”. They argue that a “large scale public intervention” is needed to ensure that the move to net-zero benefits workers.

Meanwhile, 613,000 Scottish households were in fuel poverty in 2019 with 311,000 of these considered to be extremely fuel poor. The figures show a slight drop in overall fuel poverty from 2018, but the number remains higher than it was in 2017. Energy campaigners are concerned that “unprecedented” rises in energy costs could see another 100,000 households plunged into fuel poverty this year. The situation would be exacerbated by the UK Government's removal of the universal credit uplift and the ending of furlough, they said.

General secretary of the STUC, Roz Foyer, told *The Ferret* that as it stands Scotland is “*not on track to achieve a just transition*”. Central to our response must be radical action to decrease domestic emissions in heat and transport and the development of new technologies in energy and manufacturing. What we need is large scale public intervention that will ensure that the move to Net Zero will benefit workers.” (3)

Britain's oil and gas workers want a green transition – but the industry doesn't, says Erik Dalhuijsen - consultant petroleum and sustainability engineer and a climate change activist living in Aberdeen. Many oil and gas workers are actually ready for the change, but the oil and gas industry itself is slowing the process, holding back real progress. Having worked in the oil industry in Aberdeen and abroad for decades, he feels the industry is applying all of its power to self-preservation, in the face of the immutable truths that fossil fuels will one day run out and that we must keep what of them remains in the ground. (4)

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13. Scottish Government 7<sup>th</sup> sept 2021 <https://www.gov.scot/publications/transition-fairer-greener-scotland/>

14. Current 8<sup>th</sup> Sept 2021 <https://www.current-news.co.uk/news/just-transition-to-net-zero-at-the-heart-of-scottish-governments-five-year-plans>
15. The Ferret 23<sup>rd</sup> Oct 2021 <https://theferret.scot/radical-action-needed-government-climate-targets/>
16. Guardian 23<sup>rd</sup> Oct 2021 <https://www.theguardian.com/commentisfree/2021/oct/23/britain-oil-gas-workers-industry>

## 17 Scottish Energy Company

Nicola Sturgeon announced four years ago the intention to establish a not-for-profit national energy company that would deliver low-cost green power to households across the country, helping to reduce fuel poverty and tackle climate change. But the proposal is absent from the latest Programme for Government. Efforts will instead focus on the creation of a “*new dedicated national public energy agency*”, more akin to an advisory body. The move has been branded “*a total dereliction of duty*” and an “*embarrassing downgrade*”. (1)

However, SNP members overwhelmingly backed a call for a state-run energy company to be set up at the autumn conference. The move will be seen as a direct rebuke to the leadership’s failure to make good on the promise. (2)

Writing on the Commonweal website 122 days after the vote, Craig Dalzell said “*I was really hoping that this week’s column would have been an ecstatic story of public democracy winning out over policy-by-diktat. I can’t tell you how disappointed I am that it won’t be ... We have created a detailed blueprint called Powering Our Ambitions which laid out what a nationally owned energy company (NEC) should be, should do and how it should be run. In short, the company must be more than just an energy supplier but must own and develop its own energy assets. We said this long before the current volatile energy crisis laid bare the vulnerabilities of the “energy market” imposed on energy companies that don’t own anything and merely supply customers.*”

The Conference vote “*was followed up ... by [Labour MSP] Monica Lennon’s amendment to the Net Zero Nation debate motion to reintroduce an NEC along the lines proposed by Powering Our Ambitions and to add an actual policy to a motion which otherwise wasn’t much more than an afternoon dedicated to saying “Parliament agrees with things that the Government is already doing”. Unfortunately, despite the clear mandate from members, the SNP chose to vote against the amendment. Perhaps worse, the Greens also chose to vote against citing their objection to a national company in favour of local companies and cooperatives.*”

He concludes: “*Make no mistake though. The failure to take public control of Scotland’s energy will mean that we will almost certainly fail to meet our Green New Deal targets (whilst simultaneously funding the state of Norway and any other countries whose public energy company sets up shop in Scotland).*”

1. Scotsman 8th Sept 2021 <https://www.scotsman.com/news/environment/scottish-ministers-accused-of-embarrassing-downgrade-as-public-energy-firm-plans-dropped-3376240>
2. Guardian 11th Sept 2021 <https://www.theguardian.com/uk-news/2021/sep/11/snp-members-call-for-creation-of-state-run-energy-company>
3. Commonweal 23rd Sept 2021 <https://commonweal.scot/tell-sid-his-shareholders-are-safe/>

## 18 National Planning Framework

The Scottish Government has published its draft fourth National Planning Framework for consultation. Planning applications will have to show how they help meet Scotland's ambitious targets to cut emissions to net zero by 2045 to get approval under new proposals.

These proposals promote the creation of 20-minute neighbourhoods, where services are easily accessible on foot or by bicycle, across cities and towns. Tighter restrictions will be imposed on out-of-town retail development. The Framework will support developments which contribute to nature restoration, drive population growth in rural Scotland, create more homes to meet local needs and encourage green investment. Proposals for renewable energy, including increasing the power of existing wind farms, will be supported by planners - helping make Scotland an energy exporter.

It proposes 18 national developments including: a national walking, wheeling and cycling network promoting active travel; mass and rapid transit networks for cities to significantly reduce congestion and reliance on the car; pumped hydroelectric storage, large scale renewable energy generation and investment in the electricity grid. (1)

Commenting on the Framework, Friends of the Earth Scotland's Director Dr Richard Dixon said: *"Overall the draft National Planning Framework takes big steps in the direction of delivering a zero-carbon Scotland, but its Achilles heel is the fossil-fuel power station at Peterhead and its strong backing of carbon capture development ... There is a very welcome new requirement for planning decisions to consider the climate impacts of planning proposals, as well as policies to support renewable energy, energy storage, heat networks and the move to a circular economy. These proposals deliver the SNP's key promise to use NPF4 to make sure no fracking can take place in Scotland ... As you would expect from this government there is no support at all for new nuclear power."* (2)

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1. Scottish Government 10<sup>th</sup> November 2021 <https://www.gov.scot/news/planning-to-reach-net-zero/>
  2. FoE Scotland 10<sup>th</sup> November 2021 <https://foe.scot/press-release/national-planning-framework-reaction/>