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National Infrastructure Commission
Finlaison House,
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14 February 2022

Dear Team,

THE SECOND NATIONAL INFRASTRUCTURE ASSESSMENT: BASELINE REPORT

We welcome the opportunity to respond to the above Call for Evidence.

ScottishPower is a major UK energy company with renewable generation, retail supply and networks businesses; we are a leading developer of wind power in the UK, and part of the Iberdrola Group, the world's leading renewables developer. Iberdrola, is a global leader in tackling climate change, with a commitment to reaching carbon neutrality by 2050.

We are the UK's first 100% Green vertically integrated energy utility, generating 100% renewable electricity from 40 operational windfarm sites with over 2.8 GW installed capacity throughout the UK. Building on our 714 MW East Anglia ONE offshore wind project (which we completed in 2020), we have ambitious offshore wind development plans for taking forward a 3.1 GW offshore wind East Anglia Hub, as well as a significant development portfolio of onshore wind, solar and battery storage projects in the UK. In September 2020, we launched 'Green Hydrogen for Scotland' – a partnership between ScottishPower Renewables, BOC, and ITM Power, to offer an 'end-to-end' market solution for reducing emissions from heavy duty vehicles through the provision of green hydrogen. SP Energy Networks ('SPEN'), part of the ScottishPower Group, owns and operates the electricity distribution networks in the Central Belt and South of Scotland (SP Distribution), Merseyside and North Wales (SP Manweb), as well as the electricity transmission network in the Central Belt and South of Scotland (SP Transmission).

We welcome the publication of the 'Second National Infrastructure Assessment ('NIA2): Baseline Report', and the associated Call for Evidence ('CfE'). As part of this, we also welcome the clear focus on addressing challenges in progressing towards meeting the Net Zero target for 2050. We set out our detailed responses to a number of the specific questions in the Consultation document in the attached Annex, however, we highlight some overarching perspectives by way of this letter.

In terms of meeting the Net Zero challenge (which is rightly at the heart of NIA2), there needs to be a holistic, whole system approach towards the decarbonisation challenges across the various infrastructure sectors, including the power sector, transport, buildings and industry.

We agree with the Climate Change Committee ('CCC') that electrification will play a key role in all potential pathways to net zero across these sectors. This is reflected in the CCC's projection that electricity demand in the UK might be expected to at least double by 2050.

We therefore believe that the UK Government is sensibly focussing on making further progress at scale with decarbonisation of the power sector on a pathway towards meeting the ambition for a fully decarbonised power sector by 2035 (as set out in the Government's Net Zero Strategy published last October). In this regard, we fully support the Government's plans for delivering a power sector with around a 65% share of electricity generated in Great Britain coming from renewable energy sources by 2030 as set out in the Treasury's National Infrastructure Strategy.

In this context, we believe that the well-established Contracts for Difference (CfD) auctioning programme provides a clear way forward for the deployment of cost-effective renewable generation during the 2020s. The CfD scheme has proven to be a robust, bankable and sustainable investment framework which has successfully increased the rate of deployment of renewable generation, driving down the costs of such deployment for consumers, as well as bringing economic benefit in terms of jobs and growth of a UK supply chain. In terms of accelerating progress, we had been advocating for some time a shift towards more frequent CfD auctions and, accordingly, we very much welcomed the Government's recent announcement that it will hold annual CfD auctions starting with CfD Allocation Round 5 scheduled to open in March 2023. This will accelerate the scale of deployment in the immediate years ahead, whilst providing longer-term certainty to investors and the supply chain in a way that will help to grow the UK renewables sector at this critical moment of global development of the sector.

There does, however, remain a broader need for reform of the planning system across the UK in a way that will facilitate a more timely infrastructure consenting process and one that fully embeds the strategic importance of meeting the legally binding Net Zero target. A key aspect of this will be ensuring that those statutory bodies with a key role to play in the process are properly staffed and resourced. Likewise, there is a need to develop a more strategic and co-ordinated approach towards the developing offshore transmission network. In this regard, we strongly support the work of the BEIS/Ofgem Offshore Transmission Network Review though it is important to recognise that this process needs to be taken forward in a way that provides good long-term visibility on reform and does not undermine those projects that are already in-flight in terms of their stage of development.

As regards security of supply, we continue to see the Capacity Market as a useful mechanism for ensuring the provision of adequate capacity. However, we also consider that there needs to be significant reform to improve the design of the scheme in a way that will complement progress in decarbonising the GB power system. BEIS has rightly started a reform programme in this area, however, there will be a need to scale this up with a view to making timely and effective progress.

In terms of the transport sector, we welcomed the publication last year of the Government's Transport Decarbonisation Plan and alongside this an Electric Vehicle Delivery Plan focussed on increasing the uptake of electric vehicles (EVs) this decade, as well as supporting investment in the necessary infrastructure. In this context, we have supported the recognition of the need to focus on better promoting the roll-out of on-street charging options across the country, especially in those localities where the market is not delivering. However, there is still a need for the UK Government to come forward with a coherent and worked up Infrastructure Charging Strategy that will promote delivery fairly across all communities around the country.

It is widely recognised that the decarbonisation of heat represents one of the biggest challenges that the UK faces in the transition towards meeting the Net Zero challenge. We welcomed the publication towards the end of last year of the Government's long-awaited Heat and Buildings Strategy with its focus for the 2020s on a 'no regrets' electrification pathway, via the deployment of heat pumps. However, we agree with the CCC that there needs to be a scaling up of ambition in this area with a stronger commitment to upfront support for consumers making the switch to low carbon heating options beyond 2025, as well as a rebalancing of policy costs over time between electricity and gas so as to introduce effective carbon pricing and further incentivise a switch from gas to clean electricity. For our part, we consider that an electrification pathway will be the most feasible and cost-effective way to decarbonise heat in buildings over the longer-term.

Increased deployment of electric vehicles and heat pumps over this decade will strengthen the need for targeted anticipatory investment in electricity networks. Such developments will push the energy system beyond what the distribution network is currently designed for so that enabling timely investment in network upgrades will be key to maintaining system resilience, alongside smart flexibility and storage solutions.

We consider that 'green' electrolytic hydrogen will also have a critical role to play in the net zero transition, but principally in the decarbonisation of those parts of the economy that will be difficult to electrify, such as heavy industry and transport. The Government's Hydrogen Strategy is rightly focussed on putting in place support (via a Net Zero Hydrogen Fund and a new business model support scheme) to facilitate cost reduction through deployment at scale over time.

Lastly, making timely progress with infrastructure investment to support decarbonisation across these various sectors will require a more joined up approach across Whitehall Departments, the Devolved Administrations, local government, and other statutory bodies. There needs to be much more thought about how to achieve this, ensuring that the Net Zero priority is properly integrated into both day-to-day and long-term decision-making.

Moreover, we would highlight the importance of the low carbon transition taking place in a way that represents a fair and just transition for all. The importance of this is recognised in the UK Government's Net Zero Strategy and its recent Levelling Up White Paper, building on the Government's Ten Point Plan for a Green Industrial Revolution. However, a key part of promoting the economic benefits of a low carbon transition will be to maintain consistency of purpose and a clear and sustained focus on effective delivery mechanisms. For example, in terms of progressing towards delivering 40 GW of offshore wind generation by 2030, joint initiatives between government and industry, such as the Offshore Wind Sector Deal, will have a key role to play in optimising the economic benefits of offshore wind deployment, including supporting regeneration and investment in coastal communities across the country.

If you would like to discuss any aspect of our response, please do not hesitate to contact me.

Yours sincerely,



Tom Restricks
Head of Public Policy

THE SECOND NATIONAL INFRASTRUCTURE ASSESSMENT: BASELINE REPORT**SCOTTISHPOWER RESPONSE****1. Introduction**

Question 5: What are the main opportunities in terms of governance, policy, regulation and market mechanisms that may help solve any of the Commission's nine challenges for the Next Assessment? What are the main barriers? Your response can cover any number of the Commission's challenges

In terms of meeting the Net Zero challenge, we agree with the UK Government that there needs to be a focus on making progress towards decarbonising the power sector by 2035, whilst making progress in decarbonising the transport, buildings and industry sectors through the 2020s and 2030s.

In terms of power sector decarbonisation, we fully support the Government's plans for delivering a power sector with around a 65% share of electricity generated in Great Britain coming from renewable energy sources by 2030 as set out in the Treasury's National Infrastructure Strategy.

In this context, we believe that the well-established Contracts for Difference (CfD) auctioning programme provides a clear way forward for the deployment of cost-effective renewable generation during the 2020s. The CfD scheme has proven to be a robust, bankable and sustainable investment framework which has successfully increased the rate of deployment of renewable generation, driving down the costs of such deployment for consumers, as well as bringing economic benefit in terms of jobs and growth of a UK supply chain. In terms of accelerating progress, we had been advocating for some time a shift towards more frequent CfD auctions and, accordingly, we very much welcomed the Government's recent announcement that it will hold annual CfD auctions starting with CfD Allocation Round 5 scheduled to open in March 2023. This will accelerate the scale of deployment in the immediate years ahead, whilst providing longer-term certainty to investors and the supply chain in a way that will help to grow the UK renewables sector at this critical moment of global development of the sector.

Currently, planning consent delays, uncertainty and complexities are the biggest barrier to the deployment of new renewable generation projects. Given the long lead-in time between renewable energy deployment and the associated transmission project development and operation, it will only be possible to achieve the Government's ambitions for accelerated deployment through more timely consenting processes.

In short, there is a need for reform of the planning system across the UK in a way that will facilitate a more timely infrastructure consenting process and one that fully embeds the strategic importance of meeting the legally binding Net Zero target. The urgency of this challenge must be recognised now through the articulation within policy of stronger needs cases, such as through the National Policy Statements for energy, which are currently being updated. The overarching policy framework must provide a clearer direction for planning

decision-makers and statutory consultees that climate change mitigation should be given due weight in their decision-making processes.

More generally, we would note that making timely progress with infrastructure investment to support decarbonisation in the power sector (and generally) will require a more joined up approach across Whitehall Departments in central Government, the Devolved Administrations, local government, and other statutory bodies. There needs to be much more thought about how to achieve this, ensuring that the Net Zero priority is properly integrated into both day-to-day and long-term decision-making. For instance, we consider that the proposal from the Climate Change Committee (CCC) in favour of embedding a 'net zero test' into government decision-making merits further consideration.

Challenge 2: Decarbonising electricity generation

Question 8: What are the greatest risks to security of supply in a decarbonised power system that meets government ambition for 2035 and what solutions exist to mitigate these risks?

Progressing with an ambitious CfD auctioning programme

Given the scale of investment in renewable generation required to meet the net zero challenge, it is vital that we build on the success of the Contracts for Difference (CfD) auctioning programme. The CfD mechanism has proved to be a very successful revenue stabilisation mechanism, which can lower the cost of capital, provide certainty for investors and provide payback to consumers.

In terms of accelerating progress, we had been advocating for some time a shift towards more frequent CfD auctions and, accordingly, we very much welcomed the Government's recent announcement that it will hold annual CfD auctions starting with CfD Allocation Round 5 scheduled to open in March 2023. This will accelerate the scale of deployment in the immediate years ahead, whilst providing longer-term certainty to investors and the supply chain in a way that will help to grow the UK renewables sector at this critical moment of global development of the sector. Looking ahead, there will need to be a focus on providing the timely release of information on eligibility and indicative auction parameters for specific allocation rounds, allowing developers to optimise the timing of their activities, as well as providing the supply chain with the visibility needed to engage with developers and plan forward investment.

The Planning Regime

The Climate Change Committee's 2021 Progress Report to Parliament¹ considered the next steps for decarbonising electricity generation and recommended that the Government address the need for improvements to the planning regimes for renewable generation since this represented a significant barrier to future deployment. Reducing delays and uncertainty across all levels of the planning system will be vital to developing the scale of energy infrastructure required to meet the Net Zero target.

In short, there is a need for reform of the planning system across the UK in a way that will facilitate a more timely infrastructure consenting process and one that fully embeds the strategic importance of meeting the legally binding Net Zero target.

¹ [2021 Progress Report to Parliament - Climate Change Committee \(theccc.org.uk\)](https://www.theccc.org.uk/2021/06/22/2021-progress-report-to-parliament/)

We also support greater alignment across national, regional and local planning policy regimes to provide clearer support for the deployment of renewable generation in appropriate locations, as well as co-location of different types of renewable and smart energy options, including wind, solar, storage and green hydrogen.

As regards the deployment of offshore wind at scale, including new floating offshore wind projects, a more integrated approach is needed to unlock offshore renewable energy deployment opportunities at pace. Whilst this raises complex issues, we would note that the current regulatory and policy framework could more closely align seabed leasing, marine planning and infrastructure consenting. Greater integration offers the potential for resource and process efficiencies, cost savings, reduced consenting risks and quicker, more effective infrastructure deployment. This might be addressed through better forward visibility of seabed leasing opportunities, more detailed and earlier consideration of transmission requirements in the leasing process, and greater early phase integration between leasing, marine planning and consenting processes, each informed by more co-ordinated environmental assessments. Given the scale of the administrative challenge ahead, there is also a need to ensure that those statutory bodies with a key role to play in the process are properly staffed and resourced.

Grid Infrastructure to support a Smarter Low Carbon Energy System

Further, there is a need to develop a more strategic and co-ordinated approach towards the developing offshore transmission network to support the deployment of offshore wind at scale. In this regard, we strongly support the work of the BEIS/Ofgem Offshore Transmission Network Review though it is important to recognise that this process needs to be taken forward in a way that provides good long-term visibility on reform and does not undermine those projects that are already in-flight in terms of their stage of development. It will also be important to consider the potential role for a more independent Future System Operator in this context.

More generally, the scale of renewable generation required to support decarbonisation of the power sector by 2035 (including a significant scaling up of offshore wind, onshore wind and solar PV) will require significant new grid infrastructure (both onshore and offshore) across the UK.

Thus, there will be a continued increase in the need for large-scale grid infrastructure projects, both onshore and offshore, across Scotland and connecting south to demand in England. For instance, the recommendations in the ESO's Network Options Assessment for 2021/22 included a total indicated requirement of 6 HVDC links between Scotland and England, and a further three onshore cross border circuits.

Alongside, investment in the transmission network, the electricity distribution network will also be a key facilitator in connecting onshore renewable generation in Scotland.

It follows that the price control frameworks set and managed by Ofgem, as economic regulator, for both transmission and distribution networks need to allow investment in the network for technically justified, stakeholder supported, and economically efficient programmes, thereby taking "least regrets" actions now that will facilitate a cost-effective transition towards a Net Zero energy system and the long-term consumer benefits.

In particular, we consider that where network companies have presented a clear, well-evidenced and justified needs case, then there should be provision for this in baseline funding at the start of price controls, avoiding excessive use of uncertainty mechanisms. Where such uncertainty mechanisms are used, Ofgem should ensure that these are genuinely agile and based on metrics that drive the right behaviours and consumer outcomes.

Ensuring that this grid investment takes place in a timely and effective way, will be vital to delivering a smart, efficient and secure low carbon energy system involving a high proportion of renewable generation.

The Capacity Market and maintaining security of supply in a low carbon energy system

The Capacity Market (CM) remains an important mechanism for maintaining security of supply cost-effectively. However, reforms are needed to ensure that the CM remains fit for purpose through the 2020s and is aligned with the Government's commitment to a fully decarbonised power sector by 2035.

We are already seeing security of supply challenges that are likely to grow as aging nuclear and gas plants approach and reach retirement. The significant system balancing costs seen in 2021, increased frequency of issued Electricity Margin Notices and Capacity Market Notices, and volatile wholesale prices generally are indicative of capacity challenges which are resulting in higher costs for consumers.

Whilst it is vital to look at immediate steps to improve the CM to address this challenge, such as higher procurement levels and/or more effective de-rating factors for aged thermal generation, we consider that now is the right time to look at wider reform options with a focus on improving the design and interaction of the obligations under the CM agreements and the penalty regime.

Improving the ESO's visibility of distributed capacity with CM agreements would also support delivery assurance and therefore security of supply. Approximately 8 GW of distributed capacity holding a CM agreement for Delivery Year 2024/25 is not using a metering system registered in the Central Metering Registration Service and therefore may not be visible to NGENSO, compared to around 4 GW for Delivery Year 2018/19. It follows that the proposed introduction by BEIS of a requirement that all Capacity Market Units (CMUs) should register as Balancing Market Units (BMUs) needs to be implemented as soon as possible to provide greater transparency to the ESO.

Longer term, more significant reforms to the CM appear to be needed to incentivise investment in new lower carbon flexible capacity options. However, these reforms will need to be progressed in a holistic, whole system approach that takes account of other important BEIS workstreams such as developing support options for the deployment of carbon capture and storage for gas generation plant.

In this context, another area that merits further consideration is the increased role for long duration pumped storage hydro plant that can support a power system based on a high proportion of intermittent renewable generation, whilst helping to avoid the long-term 'lock-in' of high carbon thermal plant. Large-scale long-duration electricity storage (LLES) is an important source of flexibility, which can provide a renewables-based power system with valuable energy balancing, frequency, reactive power and constraint management services, as well as helping to reduce reliance on electricity interconnection options. In this regard, BEIS is sensibly considering reforms to the CM such as the use of a 'declared later delivery year' to facilitate the construction of new build pumped storage hydro projects. However, we consider that this option might well need to be complemented with wider policy reform such as developing a Cap and Floor mechanism for LLES options such as Pumped Storage Hydro so as to better incentivise investment in such long duration storage options.

Optimising the system use of LLES can complement other innovative system management approaches, for example, ScottishPower Renewables has trialled a successful innovative system restoration project at Dersaloch windfarm in South Ayrshire in Scotland, showing that wind power can effectively restore a 'blacked-out' section of the transmission network.

From our perspective, we consider that the scale of the policy reform challenges in this area of CM reform and wider system management improvements, combined with the need for holistic, joined-up working across the various teams in BEIS, means that there is a strong case for taking forward an Electricity Market Reform 2.0 programme, involving close engagement with the industry and effective working with Ofgem on linked workstreams.

Challenge 3: Heat decarbonisation and energy efficiency

Question 9: What evidence do you have on the barriers to converting the existing gas grid to hydrogen, installing heat pumps in different types of properties, or rolling out low carbon heat networks? What are the potential solutions to these barriers?

We consider that an electrification pathway offers the most feasible and cost-effective route towards the decarbonisation of heat in buildings in the UK, and, as the Climate Change Committee has noted, it provides a 'low regrets' pathway through the deployment of heat pumps this decade.

Heat pumps are one of the primary technologies for decarbonising heat, with the potential to deliver progress cost-effectively in the immediate years ahead, particularly when combined with appropriate energy efficiency improvements. Heat pumps are an established technology, and recent findings from the Energy Systems Catapult² show that heat pumps have the potential to be installed across the breadth of the UK's housing stock. We would also note the role that ground source heat pumps (GSHPs) with shared ground loops can play in heat decarbonisation: they are likely to be the most efficient and cost-effective solution for decarbonising heat in many areas in a form of heat network, with key benefits including lower system costs.

Our view is that cost parity for heat pumps with gas boilers – in terms of the combined upfront and ongoing costs - is achievable by the end of the decade, with the right grant funding regime and proper carbon pricing on the use of gas. Scaling up deployment of heat pumps over this period will be key to making progress in this regard, and the new Boiler Upgrade Scheme provides welcome support for heat pump deployment out to 2025. However, the scheme may well need to be scaled up and extended to deliver more rapid cost reductions this decade.

In addition, addressing – over time – any distorting imbalance in policy costs on energy bills between electricity and gas (or indeed simply removing some of these costs from electricity), will also be key to the successful decarbonisation of heat through electrification, by ensuring that there is a proper carbon pricing approach towards the use of gas. We welcome the Government's commitment to considering how this might be taken forward through the planned consultation on 'Fairness and Affordability' in 2022.

Implications of heat decarbonisation for investment in electricity networks

Modelling undertaken by ScottishPower as part of our RIIO-ED2 business plan shows that the magnitude of new customer demand (driven by the uptake of EVs and heat pumps) will push power flows well beyond that for which the distribution network is currently designed. The electrification of domestic heat and transport can triple a typical household's peak demand, impacting mainly on the low voltage (LV) network. This will have significant implications for the reinforcement of the 'last mile' of the distribution network, which is closest to customers.

² [Electrification of Heat - Heat Pump Installation Statistics - Energy Systems Catapult](#)

We recognise that flexibility options (i.e. contracting with generation or demand to manage network constraints) will play a key role in managing the pace of the Net Zero transition. In developing our RIIO-ED2 business plan we have tendered for each capacity shortfall, covering over 1,100 sites, to understand the availability and cost of flexibility. However, our detailed assessments demonstrate that, even with advanced flexibility solutions, significant network upgrades will still be required to facilitate meeting the Net Zero challenge. As the uptake of low carbon technologies gathers pace, the uptake of smart-enabled technology and storage, diversity of load in local areas, local network limitations, and consumer behaviour will all be important factors in the development of network solutions.

Question 10: What evidence do you have of the barriers and potential solutions to deploying energy efficiency in the English building stock?

Delivering energy efficiency improvements in the English building stock will play a central role in helping to meet the heat decarbonisation challenge, whilst also facilitating progress towards meeting the 2030 fuel poverty target for England. Implementing domestic energy efficiency improvements has the significant benefit of being an enduring solution which can help consumers both to realise bill savings by reducing their energy consumption and improve the comfort of their homes over the long-term. It also facilitates the optimal use in homes of heat pumps and other low carbon heating options.

We have always been supportive of a ‘fabric first’ approach and, as part of this, we support the move towards whole house retrofit, which should reduce the need for future upgrades of properties. We also recognise that a focus on insulating the least efficient housing stock is consistent with taking steps to alleviate fuel poverty, whilst making progress towards meeting the Net Zero transition in a fair way.

As an obligated supplier under ECO3, we have worked closely with our delivery partners to provide insulation measures (solid wall, cavity wall and roof insulation), replacement gas boilers and first time central heating to those in or at risk of fuel poverty. We note that ECO4 will be much more focused on the installation of fabric efficiency measures, which we welcome as a sensible and timely step towards helping to future proof homes for both the long-term and for the use of low carbon heating solutions.

A key challenge for government policy-makers in the next period will be ensuring that the various support and incentive schemes promoting energy efficiency measures and heat decarbonisation (e.g. ECO4, the Boiler Upgrade Scheme, the Social Housing Decarbonisation Fund, and the Home Upgrade Grant) work together in a coherent and fair way. The design of these schemes will also need to work in tandem with any steps towards regulation of the domestic housing sector such as the UK Government’s plans for phasing out the installation of fossil fuel heating in homes off the gas grid from 2026. Ensuring that the overall policy framework is designed to deliver a fair low carbon transition will be key.

We believe that, as part of longer term reforms, the Government should consider whether the traditional supplier obligation model, which delivers basic energy efficiency improvements to households in a limited and tightly defined eligibility group, should be a central delivery model for the more complex landscape that will prevail in the later 2020s and 2030s. We would note the potential merits of moving to an auctioning model to support the delivery of energy efficiency improvements. This could facilitate cost-effective delivery and innovation through a competitive auctioning process that would bring new entrants into the market. A key additional benefit of such a delivery model would be that it would enable a shift away from consumer bill

funding towards funding from general government spending in a way that would be less regressive and accordingly complement steps to address fuel poverty.

Challenge 4: Networks for hydrogen and carbon capture and storage

Question 11: What barriers exist to the long-term growth of the hydrogen sector beyond 2030 and how can they be overcome? Are any parts of the value chain (production, storage, transportation) more challenging than others and if so why?

We consider that 'green' electrolytic hydrogen will have a critical role to play in decarbonising those parts of the economy that will be difficult to electrify, such as heavy industry and heavy transport. Hydrogen can be more effectively used in these niche applications and is currently an inefficient and expensive technology for decarbonising heat and light vehicles.

At present, low carbon forms of hydrogen production are relatively expensive and will require government support to facilitate cost reduction through deployment – this should be a priority when compared to storage and transport. The UK Government rightly recognises this and is developing mechanisms to support the development of low carbon hydrogen production, including the Net Zero Hydrogen Fund and the BEIS Hydrogen Business Model scheme. These mechanisms build on the Renewable Transport Fuel Obligations, which currently provides support for the production of electrolytic hydrogen that is used in transport applications.

Such support mechanisms should provide a framework whereby electrolytic hydrogen can compete on a level playing field with other forms of hydrogen production. For example, in the BEIS Hydrogen Business Model, it is critical that the risks of gas price volatility are fully reflected in the strike prices of the natural gas reforming (with CCUS) hydrogen projects so that a robust comparison can be made with the strike prices of other hydrogen projects. It will also be important that the design of the support mechanisms avoids unnecessary complexity, and that the amount of support available, as well as the timetable for future allocation rounds, is clearly set out as far in advance as possible.

We would also highlight the pressing need for transparency and clarity around the carbon emissions associated with the different hydrogen production technologies, including any upstream greenhouse gas emissions. With this in mind, we believe that there should be separate standards for zero carbon hydrogen and for low carbon hydrogen. As well as providing transparency around emissions, having such a label for 'zero carbon hydrogen' could also be useful when designing the systems for auctioning contracts as it will provide a clear differentiator between the different hydrogen production methods.

In our view, the central objective of hydrogen production should be to bring about more rapid carbon emissions reductions, thereby making a positive contribution towards meeting the UK's Net Zero emissions target. Therefore, to benefit from government support, any electrolytic hydrogen production facility, whether using grid electricity or on-site electricity, should be required to demonstrate that it is powered by new, additional renewable generation, or curtailed renewable generation.

ScottishPower
February 2022