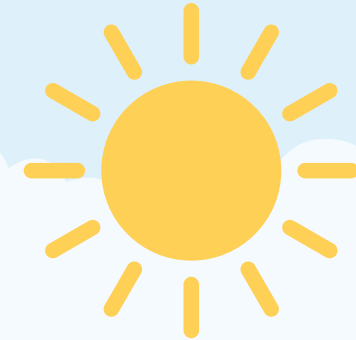




Department for the
Economy
www.economy-ni.gov.uk

CONSULTATION ON DESIGN CONSIDERATIONS FOR A RENEWABLE ELECTRICITY SUPPORT SCHEME FOR NORTHERN IRELAND



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1. Introduction

Purpose and Scope

- 1.1 The Department for the Economy (DfE) published the new Energy Strategy for Northern Ireland¹ in December 2021. The vision of the Strategy sets out how we will achieve net zero carbon and affordable energy, in line with UK Government commitments, by 2050.
- 1.2 The Energy Strategy identified a new target of 70% of electricity consumption to be from a diverse mix of renewable sources by 2030. This target has since increased to 80% through the Climate Change Act (Northern Ireland) 2022².
- 1.3 The Energy Strategy Action Plan for 2022³ followed in January 2022 and set out the primary objective for a support scheme for NI: to incentivise sufficient renewable electricity generation, from a wide and diverse range of renewable sources and technologies, to meet the established target. This target is now the 2030 legislative target of 80% electricity consumption.
- 1.4 Recent global events, such as the COVID-19 pandemic and the 2022 Russian invasion of Ukraine, have had a severe impact on the price of natural gas and oil. In turn higher fuel prices impacted consumers across the UK, who have been experiencing a sharp increase in the cost of commodities and especially of electricity, heating and transport fuel. Affordability for local consumers must also be a primary objective for any support scheme for Northern Ireland.
- 1.5 This public consultation sets out and seeks input on the design considerations on which DfE will base the development of a renewable electricity support scheme for Northern Ireland. This includes options to define the principles underpinning the support scheme, as well as more granular aspects of the scheme design such as support structure and eligibility criteria.

1 [The Path to Net Zero Energy. Safe. Affordable. Clean. \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk)

2 [Climate Change Act \(Northern Ireland\) 2022 \(legislation.gov.uk\)](https://www.legislation.gov.uk)

3 [The Path to Net Zero Energy. Action Plan 2022 \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk)

How to Respond

1.6 This consultation will be hosted online at the [Support Scheme Design Considerations page on the nidirect website \(consultations.nidirect.gov.uk\)](https://consultations.nidirect.gov.uk)

1.7 The Citizen Space website has been specially designed to be as user-friendly and welcoming as possible for those who wish to complete the consultation. It also allows the Department to collate results faster. For this reason, we would particularly encourage anyone who is interested in responding to utilise Citizen Space. However, if this is not possible, you can respond to this consultation via email to RenewableElectricity@economy-ni.gov.uk or you can respond in writing to the DfE Renewable Electricity Team address:

Support Scheme Consultation
DfE Renewable Electricity Team
6th Floor, Adelaide House
Adelaide Street
Belfast
BT2 8FD

1.8 When responding via email or in writing, please state whether you are responding as an individual, or representing the views of an organisation - and if so, please state the name of the organisation. Also, quote the following Consultation Reference: Consultation on Design Considerations for a Renewable Electricity Support Scheme for Northern Ireland.

2. Background

- 2.1 The Energy Strategy was published in December 2021 and set out an ambitious pathway to a decarbonised, affordable energy future for everyone in Northern Ireland. It envisages a future that ends price volatility associated with fossil fuels and ensures that more of the money we spend on energy stays in the local economy, helping to create opportunities for jobs and wealth creation.
- 2.2 The Energy Strategy Action Plan for 2022 followed in January 2022, outlining 22 commitments for the year. The action plan includes an action to consult on a renewable electricity support scheme (Action Point 12). This is that consultation. Such a support scheme is essential to attract investors, protect consumers and deliver on the Climate Change Act targets.
- 2.3 Currently, with no existing support scheme in Northern Ireland, potential investment in Northern Ireland in renewable electricity is instead being diverted to GB, the Republic of Ireland (RoI) and other countries. A support scheme for Northern Ireland would support investment here and be a driver to increase wealth, prosperity and living standards across Northern Ireland. The entire future energy market in Northern Ireland should be appropriately regulated to ensure consumers are protected, especially from global price shocks. Consumers here should pay a fair price for the energy we produce locally. A future scheme for renewable generators will be an important part of this regulatory environment for consumer protection.
- 2.4 A renewable electricity support scheme will also contribute to the delivery of the 10X Economy - An Economic Vision for a Decade of Innovation⁴ to enable Northern Ireland to be a truly competitive and attractive option for investment. By establishing the main mechanism for encouraging investment in renewable electricity in Northern Ireland, a new support scheme would be the catalyst for an inclusive green growth that is capable of supporting our economic transformation over the next decade.
- 2.5 In 2021 the Department commissioned a report⁵ from the Energy, Power and Intelligent Control Research Cluster and the Bryden Centre at Queen's University Belfast (QUB) with the review and assessment of the suitability of potential support scheme options to incentivise investment in renewable power generation in Northern Ireland. This research complemented other work already underway as part of Northern Ireland's new Energy Strategy and contributed to its development and evidence base. The results indicated that the most appropriate scheme for Northern Ireland is a Contract for Difference (CfD) scheme, as it spreads the investment risk between the generators and consumers, while also reducing market volatility. Under such schemes, funds move either from suppliers to generators when wholesale prices are below the strike price, or from generators to suppliers when wholesale prices are above the strike price.

4 [10X Economy - an economic vision for a decade of innovation | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/10x-economy)

5 [Support scheme options to incentivise renewables investment in Northern Ireland: Report for the Department for the Economy as evidence for the Northern Ireland Energy Strategy 2021 – Queen's University Belfast \(qub.ac.uk\)](https://www.qub.ac.uk/research/energy-strategy-2021)

- 2.6 Since the publication of the Energy Strategy Action Plan 2022, the Department for the Economy and the Department for Business, Energy & Industrial Strategy (BEIS) officials have been working together to consider options for a support scheme for Northern Ireland. One of the potential options for delivery noted in the Energy Strategy was the possible extension of the current GB CfD scheme to include Northern Ireland.
- 2.7 Following consideration of various aspects of extending the existing GB CfD scheme to include Northern Ireland, including the various technical difficulties in delivering one scheme over two separate electricity markets, Ministerial agreement in June 2022 confirmed that the option of extending the current GB CfD scheme to cover Northern Ireland would no longer be taken forward. A bespoke scheme is therefore required.

Pre-consultation Scoping Exercise

- 2.8 To support and inform the drafting of this consultation the Department for the Economy engaged Cornwall Insight to conduct a scoping exercise on considerations for the development of a bespoke support scheme for Northern Ireland. Cornwall Insight have drawn from their expertise in energy markets, system implications, developer requirements and investor appetite to provide context and an overview of the challenges and opportunities of designing a support scheme for Northern Ireland.
- 2.9 It was highlighted that many aspects of the design of a support scheme are interlinked, where different approaches often directly or indirectly impact each other and one solution or approach will naturally favour the achievement of one objective over another. For example, a technology agnostic approach will likely favour competition, resulting in high levels of decarbonisation and lower consumer cost, but potentially at the detriment of encouraging a diverse energy mix. Similarly, choosing one solution may also limit the options available to address other considerations. For example, defining the general structure of the scheme (whether a CfD, a grant, etc.) will inevitably impact the options available for lower-level aspects of the scheme, such as eligibility criteria or contract length awarded to generators.
- 2.10 It is therefore crucial that a balanced approach, one guided by the key objectives of the scheme, is maintained. As a result, this consultation focuses on drawing input from stakeholders to understand preference on the main mechanisms for a potential scheme for Northern Ireland. Feedback is however welcome on all elements of scheme design.
- 2.11 Finally, considerations and possible approaches have been assessed by Cornwall Insight in the context of the Northern Irish market, based on lessons learnt and experience of other support schemes in Great Britain, the Republic of Ireland, the Netherlands, Germany and Italy. Such assessment is summarised under the 'Approach for the NI Market' Cornwall Insight report which is published alongside this consultation and discussed in section 8 of this consultation document: "Emerging Options".
- 2.12 The Cornwall Insight's report, '*Renewable Electricity Support Scheme for Northern Ireland (NI), Design Considerations*' is available here: <https://www.economy-ni.gov.uk/renewable-electricity-support-scheme>

3. Scheme Principles

3.1 Based on evidence to date and the needs outlined in section 1 and 2, the three proposed principles of a renewable electricity support scheme for Northern Ireland would be to:

1. Incentivise sufficient renewable electricity generation to ensure that at least 80% of electricity consumption is from renewable sources by 2030.
2. Ensure that consumers pay a fair price for electricity produced locally and that prices are more stable.
3. Encourage a wide range of renewable sources to diversify the technology mix to support security of supply.

Question 1: Do you agree with the above principles?

Please provide evidence, where possible, to support your response.

4. Scheme Design Type

Auction-based Scheme

- 4.1 A range of support options have been employed globally to deploy a higher level of renewable electricity generation. These support schemes are often in the form of grant funds assigned to cover the capital costs of renewable electricity generating infrastructure, or a form of feed-in tariff (FIT) which provides a fee per unit of energy produced paid to the generator by energy regulators to allow renewable energy sources to be economically competitive with fossil fuels. Countries using FITs traditionally set support scheme rates on a sliding scale. However, due to the lack of direct interaction with market forces, failure to properly forecast the payment requirement for sites can lead to higher than required payments from consumers.
- 4.2 Over the past decade the focus of renewable incentives across many jurisdictions has moved towards auction-based and, particularly, CfD support schemes. The main advantage of such schemes is that, depending on current energy market prices, funds can move bidirectionally to support either renewable electricity generators or consumers. When wholesale prices are below the strike price funds move from suppliers to generators, while when the prices are above the strike price funds move from generators to suppliers.
- 4.3 Historically, CfD schemes have contributed to dramatically reducing the cost per unit of energy. For example, the cost per megawatt hour (MWh) for electricity generated by offshore wind farms in the UK has reduced from over £100/MWh in the initial auction rounds to around £40/MWh in the latest rounds. Moreover, a consultation on CfD performance⁶ and future direction conducted in GB in July 2021 concluded that without support mechanisms many renewable energy projects would not be viable and that CfD schemes have enabled faster rollout while delivering lower costs for consumers.
- 4.4 CfD mechanisms also provide protection from market volatility, which has been prominent in recent years: prices in the SEM fell to €23/MWh in May 2020, climbed to €143/MWh in July 2021 and reached €402/MWh in September 2021 during a period of low wind which coincided with a number of gas plants being offline. In essence, by guaranteeing a price per unit of energy generated over the contract lifespan, CfD structures provide stability for investors and generators.
- 4.5 Likewise, under the right market conditions, the same guaranteed price agreed in CfD contracts can also be financially beneficial to consumers. Due to geopolitical events since September 2021 market prices have risen above strike prices and CfD generators in GB have been paying back to suppliers, substantially reducing the green levy applied to GB household electricity bills. According to data published by the Low Carbon Contracts Company (LCCC)⁷, over the last quarter of 2021 and the first quarter of 2022 nearly £275m was paid back from CfD generators to suppliers.

6 [Enabling a high renewable, net zero electricity system: call for evidence - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/enabling-a-high-renewable-net-zero-electricity-system-call-for-evidence)

7 [LCCC-briefing-on-the-CfD-scheme-5-September-2022.pdf \(lowcarboncontracts.uk\)](https://www.lowcarboncontracts.uk/wp-content/uploads/2022/09/LCCC-briefing-on-the-CfD-scheme-5-September-2022.pdf)

- 4.6 In Section 2 we briefly introduced two studies which explored several support scheme designs and their relative effectiveness. Both studies from Cornwall Insight and QUB indicated that a CfD scheme is the optimal approach for Northern Ireland, since the investment risk is shared more evenly between the consumer and generators, making this type of scheme more equitable for consumers and society overall.
- 4.7 It is also important to note that a CfD scheme has been in place in GB for several years, with 4 allocation rounds have been successfully completed to date, with a fifth due to open in March 2023. Similarly, the Renewable Electricity Support Scheme (RESS) in RoI, was established in 2020 and was based on a similar CfD mechanism. The RESS has launched two auctions rounds in 2020 and 2022. This means a large number of developers and generators, both in GB and RoI, are already familiar with CfD scheme structures. Should a similarly designed auction-based support scheme be launched in Northern Ireland, such familiarity and confidence in the effectiveness of CfD schemes would be expected to encourage investment and draw developers' interest to the Northern Irish market.

Question 2: Do you agree that a Contracts for Difference (CfD) scheme should be the preferred approach to supporting renewable electricity generation in Northern Ireland?

Please provide evidence, where possible, to support your response.

Regulatory Options

- 4.8 Much has changed since the Single Electricity Market (SEM) was established in 2007, not least the significant increase in renewable generation, the introduction of new technologies and the increased advantages to be gained from interconnection with other markets.
- 4.9 Currently the SEM comprises several trading arrangements that exist in a number of different timeframes: the Forwards Market (including CfDs), the Day Ahead Market (DAM), the Intraday Market, the Balancing Market (BM), and the Capacity Market (CM). Trading in the Forwards Market is financial only and does not entail physical delivery of power, although it does provide participants with the opportunity to hedge their positions in the Day Ahead Market, the daily auction. Following the Day Ahead Market, the Intraday Auctions enable participants to adjust their positions closer to real time. Through the Balancing Market the Transmission System Operators buy and sell power from market participants to ensure that the demand and supply of power is exactly matched. Finally, capacity is also traded in the Capacity Market up to five years in advance of the trading day to ensure the generation capacity is sufficient to meet demand.
- 4.10 Participation in most markets is often on a voluntary basis, further complicating the environment in which the ambition of self-sufficiency through local generation of affordable, renewable electricity is to be reached. To facilitate this, Northern Ireland may benefit from having all renewable electricity generators as part of a CfD mechanism to ensure consumers are paying a fair price for the cost of locally produced renewable electricity and generators are making a fair return on their investment.

- 4.11 A potential approach to take us one step closer to a more cohesive energy market could be the establishment of a support scheme that is mandatory for all generators. Such a scheme would allow more protection to consumers, as the costs of the schemes would be established when the support is awarded and changes in market prices would less directly impact the costs to consumers. As more assets are deployed in this structure, the more protection consumers would have under the scheme thanks to the higher percentage of assets that would operate in a regulated environment. A mandatory scheme could also allow existing operational assets (such as merchant or Capacity Market assets) to transfer into the scheme, providing longer term contracts and/or contracts that once ended offer the option for repowering support symmetrically balanced between consumers and investors.
- 4.12 Most international markets do not require renewables to engage in a support scheme, with many markets such as the GB CfD, as well as previous subsidies such as the Renewable Obligation (RO) and FiT schemes, being optional. However, the UK Government has recently considered moving existing merchant and Renewable Obligation subsidised assets onto CfDs in a response to high market prices and supernormal profits. Similar approaches are seen in the German and Italian markets. While many of these markets have historically aimed to reduce subsidies and increase merchant-only assets thinking that ‘the market will always be right’ some jurisdictions are considering mandatory CfD-type structures in the context of the high prices being paid to merchant renewable generators

Question 3: Do you think that participation in a renewable electricity support scheme should be mandatory for all generators to ensure a longer-term fair and stable price for NI consumers?

Please provide evidence, where possible, to support your response.

5. Eligibility Criteria

Capacity Requirements

- 5.1 As the electrification of the heat and transport sectors progresses in Northern Ireland, renewable electricity is expected to become central to our decarbonisation targets. This will effectively require our renewable electricity output to double by 2030. Although small and microgeneration has played a crucial role in previous schemes (such as the NIRO, which helped Northern Ireland reach the 2020 target of 40% renewable electricity consumption) and has contributed to increasing consumer engagement with the wider climate agenda, such an ambitious target naturally favours the introduction of a scheme that focuses on encouraging the deployment of large-scale assets over small and micro generators. As a result, schemes such as the RESS in ROI require a minimum offer quantity for prospective renewable projects of 0.5MW, while the GB CfD scheme effectively requires a minimum capacity of 5MW for solar, onshore wind, and remote island wind sites to be eligible.
- 5.2 Since some technologies are more suitable and can still run efficiently within relatively low capacity sites, the minimum capacity required for new assets to be eligible for a renewable electricity scheme for Northern Ireland is also likely to be dependent on technology. For example, solar PV generation is generally more commonly found in GB and Northern Ireland than micro-wind generation.
- 5.3 Given the examples above from other European markets, determining a suitable cut-off size for the eligible capacity for a renewable electricity support scheme for Northern Ireland is crucial. As mentioned above, since most technologies can be run more efficiently at large scale, it is likely that to meet the 80% by 2030 target defined in the Climate Change Act (Northern Ireland) 2022, large scale generation will need to be favoured in order for a renewable electricity support scheme to be cost-effective for the consumer.

Question 4: What should be the minimum capacity for new sites to be eligible for a renewable electricity support scheme for Northern Ireland?

Please provide evidence, where possible, to support your response.

Question 4b: Do you think the minimum capacity for eligibility should be technology specific?

Please provide evidence, where possible, to support your response.

- 5.4 Additionally, while in section 4 above we considered potential approaches to support schemes that include all generation sizes, small scale generators are likely to have different funding requirements compared to larger renewable generators. This means that support scheme structures which may encourage competition and engagement for larger assets (such as competitive auctions for example) may be less appealing for micro or small generators. Similarly, whilst commercial considerations such as rate of return and agreement length are still important factors for microgeneration sites, the financial incentive for individuals or small companies deciding whether to invest in the asset is more likely to be driven by onsite considerations, such as energy independence or reducing electricity bills. As a result, a dedicated support scheme, one that favours certainty and reduces complexity, would likely be required to effectively incentivise microgeneration.
- 5.5 For example, in the RoI, the Microgeneration Support Scheme (MSS) is a dedicated scheme designed to provide direct payments for new solar PV assets under 6kW, whilst the Small-scale Generation Scheme is a Feed-in Premium support for solar assets between 6.1kW and 50kW in capacity. In GB, since the removal of the FiT scheme, new solar, onshore wind and remote island wind sites under the 5MW capacity currently receive no support. Finally, in Germany microgenerators of wind cooperatives under 18MW are included in the support scheme but have preferential rules applying to them.
- 5.6 Another important consideration is whether incentivisation for the mass deployment of small-scale/microgeneration assets is necessary and if such deployment would be capable of making substantial contributions to the 80% renewable electricity target by 2030. Evidence from the Cornwall Insight study reveals that considerable solar PV deployment occurred in GB between 2012 and 2016, when the RO scheme was in place. After this date, deployments of solar PV assets below 5MW were minimal, and in 2021 small-scale assets contributed to only ~40% of total solar PV capacity deployed. Although these numbers may still appear high at first sight, it's important to note that as of September 2022 wind sites in Northern Ireland contributed to almost 85% of the total renewable electricity⁸ generated across all technologies. This indicates that, even when microgeneration composed a substantial portion of total solar PV capacity, it only very marginally contributed to meeting wider renewable electricity targets.
- 5.7 There might also be a case for segmented support for microgeneration. For example, grant aid to the 'able to pay' sector might not be appropriate use of public funding whereas support to lower income and vulnerable households might be part of a just transition to a decarbonised energy world.

Question 5: Do you agree that incentivising small-scale and microgeneration would not make a substantial contribution to reaching the Energy Strategy targets?

Please provide evidence, where possible, to support your response.

Question 5b: Do you think a dedicated support scheme is required to incentivise deployment of small-scale/microgeneration assets even if it may not substantially contribute to the 80% target?

Please provide evidence, where possible, to support your response.

Emerging and Established Technologies

- 5.8 It is recognised that the introduction and widespread adoption of new technology in a mature industry like power, is particularly challenging without some form of financial incentive or support scheme. Unless a technology has an economic advantage, it will not be able to compete with already established and more mature options. Due to the economies of scale, competitiveness varies across technologies and plant sizes and this has to be accounted for when different incentive structures are considered. This is particularly true when bringing forward a diverse range of renewables is a key objective for the scheme, as is the case for a renewable electricity support scheme for Northern Ireland.
- 5.9 A technology agnostic approach, which allows all technologies to compete against one another, would likely be the most beneficial to consumers as the cheapest assets tend to be successful in the auction process. However, such a structure would also be detrimental to the deployment of assets employing new technologies, resulting in an energy generation mix with limited diversity, reduced flexibility and security of supply.
- 5.10 Alternatively, a pot/tiered structure where assets only compete against technology types of comparable maturity within their own pot, may be a preferable alternative for Northern Ireland. Such structure would still allow competitive tensions within each pot, whilst also favouring technology diversity. Technology specific pricing may be possible too, allowing a higher degree of control to ensure specific emerging technologies are sufficiently supported until they can reach full maturity.

Question 6: Do you think that incentivisation within the renewable electricity support scheme for Northern Ireland should be tailored by technology type?

Please provide evidence, where possible, to support your response.

Question 6b: If yes, what should the technology split look like and how should the budget be split across each technology type?

Please provide evidence, where possible, to support your response.

Storage, Co-location and Flexible Technologies

- 5.11 Globally, vertically integrated centralised power systems are quickly transitioning towards a decentralised energy system infrastructure for heating, cooling, storage, vehicle charging and electricity production. Increased penetration of non-synchronous generation also means that grid frequency and voltage support is becoming more critical and innovation in demand response will be key to effective grid operations and management.
- 5.12 Favouring assets co-located with storage solutions may be a potential way to address these challenges. This would allow the output from the renewable asset to be better optimised by the generator, in turn providing better network management benefits to the system operator which can avail of flexible assets at a low cost.
- 5.13 New flexible technologies, such as hydrogen production and carbon capture utilisation and storage (CCUS), could also play an important role in managing fluctuations in the energy demand. Such technologies might have a dedicated pot/budget within a support scheme, allowing for the development of a more diverse energy mix capable of supporting the management of supply and demand on the network by the system operator.
- 5.14 However, renewable generators require as much price certainty as possible, whilst flexible assets require the ability to discharge/generate to arbitrage on price fluctuation. Shaping a support scheme for flexible assets may therefore be challenging and require different structures compared to conventional auction-based support schemes. In the GB market, separate support schemes are currently being considered for such assets which, whilst based on the CfD structure, will operate independently. Similarly, while the ‘SDE++’ scheme in the Netherlands is a real-world example that a scheme can be modified to include CCUS, hydrogen and heat production, CCUS assets are treated separately to the electricity auction.

Question 7: Do you think flexible assets should be included in a renewable electricity support scheme for Northern Ireland, or is a separate support scheme preferable?

Please provide evidence, where possible, to support your response.

Community Benefits

- 5.15 While the primary objective of a new support scheme for Northern Ireland is to incentivise the introduction of sufficient renewable generation to deliver the renewable electricity and decarbonisation targets set out in the Energy Strategy (and Climate Change Act), supporting community and individual consumer participation in the transition to a low carbon economy is a key enabler of those targets.
- 5.16 Several pathways for increased community participation are possible and have been adopted globally. For example, the RESS scheme in Ireland dictates the level of support the local community should receive from an asset supported under the scheme. Such support might be in the form of community grants or a percentage discount on electricity network charges which tapers off with increasing distance from the supported wind farm. An alternative approach for supporting community ownership would be to include the obligation for developers to offer the community an opportunity to invest in their project. This is a policy which has been successfully implemented in Denmark, where developers of wind projects above a certain size are obliged to offer the community the opportunity to invest in an equity stake of their project.

In contrast, the GB CfD scheme has no provisions for local community benefit.

Question 8: Do you think community benefit should be included as an eligibility requirement for generators to qualify for a support scheme in Northern Ireland?

Please provide evidence, where possible, to support your response.

Question 8b: If yes, what community benefit mechanism do you believe is most suitable to Northern Ireland?

Please provide evidence, where possible, to support your response.

Other Pre-requisites

- 5.17 Determining the licensing requirements for an asset to be eligible for support will be crucial to ensuring that, if selected, the projects are likely to be realised. The more stringent these requirements and the more assets are required to evidence a strong or advanced development position, the likely lower the level of competition in the auction but the higher the level of certainty that the assets will be developed.
- 5.18 Qualifying criteria might include planning requirements, bid bonds or deposits which are lost if projects that successfully apply to the scheme are not built within a certain timeframe. Additional technical requirements may also be applicable, based on the details such as technology or size, such as offshore leasing arrangements for offshore wind sites and supply chain plans for assets above a certain size.

Finally, penalties may also be established for generators selected in the auctions for non-compliance or delays.

Question 9: Do you think there should be qualifying criteria for projects to be eligible to apply to the renewable electricity support scheme in NI?

Please provide evidence, where possible, to support your response.

6. Contract Structure

Timing of Support

- 6.1 The frequency at which the support is made available to the market will naturally impact investor confidence in the scheme, their plans on how to engage with it, the level of competition that can therefore be anticipated, as well as the burden of administering the scheme itself.
- 6.2 Access to the support (auction rounds) may be allowed on a continuous basis, or may be managed on a regular basis (annual or bi-annual basis for example). Alternatively, the support may only open to new applicants when required, allowing for greater control in the number of applicants and the amount of renewable capacity supported. This would also allow for amendments to be made to the scheme between each support round, rectifying issues and responding to changes in the market. It should also lead to higher levels of competition, as generators may have to wait for an auction period to apply for the scheme. However, it may present additional hurdles for prospective assets looking to get eligibility requirements in place at a short notice in the tight timeframe leading up to the next auction.
- 6.3 In the GB market, allocation rounds have historically been held every two years, but in an effort to increase deployment, annual auctions are to be held from March 2023. On the other hand, other markets which have regular auctions have struggled to remain competitive. For example, in Italy unallocated capacity and additional unplanned auctions reduced competition and increased consumer energy bills.
- 6.4 The size of the Northern Ireland energy market and the amount of renewable generation required to meet targets may mean that there is potentially a requirement for less frequent auctions to avoid undersubscription and its potential impact on inflating clearing prices.

Question 10: What do you think is the optimal frequency for access to a support scheme for Northern Ireland?

Please provide evidence, where possible, to support your response.

Agreement Length

- 6.5 The length of the awarded contracts will directly impact bidding strategies, investor confidence and scheme costs. Several approaches are available.
- 6.6 Payments could be made for the lifetime of the asset, have a fixed agreement length, or be in place for a period which is submitted by the applicant as part of the submission process.

- 6.7 Payments based on asset lifetime would be lower than a standard CfD contract, as it would be a longer contract and this would provide more certainty of return for the generator (and less risk) and long-term price stability for the consumer. Whilst it may be difficult to determine the suitable life of an asset, given the constant technical advancements affecting their longevity, a review or reopener provision in the contract could be designed to enable potential changes in the market to be taken into account in the contract price.
- 6.8 Fixing prices for a period would likely mean less administrative risk and lower cost to consumers, while it would not remove the uncertainty in revenues faced by investors after the end of the contract.
- 6.9 Requiring the agreement length to be submitted as part of the allocation process would ensure that competitive tensions would drive costs down for consumers. However, this requires careful estimation in the bidding process and can potentially increase the risk of non-delivery.
- 6.10 In other markets contrasting approaches have been adopted. Longer duration agreements are being considered in the RESS auctions to provide additional support to developers, whilst a call for evidence in 2021⁹ in relation to the GB scheme suggested shorter term contracts may be more beneficial.

Question 11: Given the information presented above, what do you think is the most appropriate agreement length for contracts within a renewable electricity support scheme for Northern Ireland?

Please provide evidence, where possible, to support your response.

9 [Enabling a High Renewable, Net Zero Electricity System: Call for Evidence - government response \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/97848/20210323-call-for-evidence-renewable-electricity-support-scheme-northern-ireland.pdf)

7. Payment Structure

Price Clearing Process

- 7.1 If the support is delivered via an auction structure, the mechanism by which prices are cleared plays a fundamental role in determining how investors will engage in the scheme.
- 7.2 Two main approaches are commonly employed. Pay-as-clear prices encourage assets to bid more competitively as the final prices will be raised to the clearing price. However, this could also be more costly to consumers as the total support to the assets may be well over what would be required for the asset to be developed. Alternatively, pay-as-bid approaches mean that assets can achieve a level of revenue to only match the cost of development, but also means that, in less competitive auctions, generators may be able to achieve higher revenues.

Question 12: Given the options presented above, what do you think is the most suitable price clearing process for a support scheme for Northern Ireland?

Please provide evidence, where possible, to support your response.

Price Indexation

- 7.3 A second major factor determining investor confidence will be the mechanism by which prices are adjusted throughout the life of the support scheme.
- 7.4 Different approaches have been adopted internationally: strike prices in the Netherlands, Denmark and Germany are not indexed to inflation, whereas they are in GB. In the latter, the certainty provided by indexation has seen a large amount of engagement in the scheme, therefore contributing to improved investor confidence and overall lower price per unit of renewable electricity generated.
- 7.5 In RoI, the first two RESS auctions did not include indexation. Developers in Ireland therefore had to forecast inflation over the course of the RESS contract and build this into their auction bid price, contributing to higher prices per unit of energy generated when compared to the GB CfD scheme due to the buffer built in for unexpected/maximum levels of inflation in the future. Recently announced offshore scheme (ORESS) terms and conditions have now introduced partial indexation and indexation is also being addressed as part of the RESS 3 consultation.

Question 13: Given the information presented above, do you think strike prices should be indexed to inflation?

Please provide evidence, where possible, to support your response.

Cost Considerations

- 7.6 Predicting the future of Northern Ireland's energy system is extremely challenging. This is particularly true when we consider that a renewable electricity support scheme would be highly dependent on the level of competition observed in the bidding process. We will therefore want to encourage competition to ensure the price is as fair as possible for consumers. Modelling and cost assessment will be an important part of the next stage of the design development for the support scheme.

8. Emerging Options

- 8.1 Although several European markets have been discussed throughout this consultation document as real-world examples of how support schemes have been implemented elsewhere, due to similarities and direct connections with the Northern Irish market, the CfD structures employed in the Rol and GB markets offer the most immediate and useful comparison for a potential scheme for Northern Ireland.
- 8.2 To present a possible approach for the NI market, Cornwall Insight has provided a summary of key design considerations, alongside the Rol RESS and the GB CfD scheme, and presented a view on a preferred approach for the NI market.

Cornwall Insight’s table is presented below:

Consideration	RESS Approach	GB CfD Approach	Approach for NI Market
Consumer protection	<p>High level protection – CfD scheme, no payments for negative price methods</p> <p>Changes proposed for RESS 3 to insulate investors against external risk with the aim of protecting consumers from undue cost burden</p>	<p>High level protection – CfD scheme, no payment to generators in negative wholesale price periods</p> <p>Full costs of the scheme are unknown, but maximum cost is known (except for risk of high inflation)</p>	<p>High level of protection should be deployed through repayment of upside – we expect that payments under the scheme should be capped and any payment above the achieved strike price in the wholesale market should be repaid to consumers</p> <p>This approach (where generators pay upside back to consumers) has been shown to provide additional protection to consumers in the GB market when wholesale prices are high</p> <p>It also provides a reasonable level of price certainty for consumers</p> <p>It will also be crucial to facilitate competition in the scheme to keep process low – how this is done will depend on a number of factors, particularly eligible asset types and sizes</p> <p>Wider considerations which provide benefits to consumers will need to be considered based on the overall benefit achieved to the NI market, providing no constraint payments prevents additional consumer costs, but the REISS Scheme has shown investors have struggled to engage in the scheme if they are not offered a reasonable level of protection</p>

Consideration	RESS Approach	GB CfD Approach	Approach for NI Market
Sustainability and net zero	Only low carbon assets included	Only low carbon assets included, although this includes nuclear	Focus on renewable technologies will be vital – a fundamental objective of the scheme is for decarbonisation, so a focus on low carbon assets is required
Diversify energy mix	Transition from use of technology specific pots to Evaluation Correction Factor (ECF) Separate offshore auctions	High potential – use of pots, caps, budgets and minimas/maximas mean there is plenty of scope to allow development of alternative technologies beyond the cheapest	Use of pot structure – this allows DfE to control the level of competition associated with the subsidy schemes for different technologies and avoid emerging technologies having to compete with more established technologies This will be crucial in meeting the relevant decarbonisation obligation The more possibility to vary pots, the more ability the DfE has to impact deployment rates The types of eligible technologies utilised in the scheme will also therefore be important, and should be driven by the available technologies in the NI market (expected to be predominantly onshore wind, offshore wind and solar)
Funding approach	Public Service Obligation (PSO) Levy, placed on consumers	Levy placed on consumers	This will depend on views from the market – taxation covers more parties, reducing costs per person, but may not be considered as equitable
Agreement length	RESS 1 & 2 15 years, possibly extending to 20+ years for RESS 3	15 years	Subject to investor interest – investors will likely want support for as long as possible and some have been happy with 12 to 15 years in other markets, but equally these length contracts have been seen as a hurdle in the RESS scheme
Allocation process	Competitive auction	Competitive auction	Competitive auction – a competitive auction approach is the most likely to provide low costs for consumers through competitive tensions Other markets, such as the GB scheme, have shown that carefully scoped auctions can be very competitive, although other markets (such as the Italian subsidy schemes) have shown auction parameters are crucial for competitive tensions
Contract structure	Two-way CfD	Two-way CfD	Two-way CfD should be considered – this provides a reasonably large amount of protection to consumers and has been accepted by many investors in a number of different markets

Consideration	RESS Approach	GB CfD Approach	Approach for NI Market
Price sources	<p>Strike price – set in auction, must be below a maximum price</p> <p>Market preference price – for variable projects; hourly dam price. For non-variable projects; time weighted average of the DAM over the PSO levy year</p>	<p>Strike price – set in auction, must be below a maximum price</p> <p>Market price – relevant market references (N2EX, EPEX or LEBA)</p>	<p>Generator led strike and market price – assuming a CfD scheme is in place, a competitive strike price should be used</p> <p>This offers additional consumer protection, adds a certain amount of price certainty and also prevents overpayment</p> <p>The approach has also been acceptable to investors as seen in the GB market</p> <p>A suitable market price is also important, and the day ahead SEM appears the prime choice given its utilisation in the RESS market</p> <p>However, the size of the NI market means realistic targets will need to be set and fixed prices may be required for microgenerators</p>
Timing of the subsidy	<p>Every 1-2 years, every 2 years for offshore</p>	<p>Historically, auctions every 2 to 3 years, but moving to annual from 2022 onwards</p>	<p>Annual auctions – some markets are moving to annual auctions due to the expectation that this will increase deployment and not limit demand</p> <p>However, some markets which have regular auctions have struggled to remain competitive</p> <p>The size of the NI market means that there is potentially a requirement for less frequent auctions</p> <p>This will depend on the auction parameters</p>
Technologies included	<p>HECHP (W2E, Biogas, biomass), wind, solar, hydro, hybrid</p>	<p>Low carbon gen (including nuclear), including floating wind and tidal</p> <p>No CCUS or Hydrogen</p>	<p>This should be driven by NI requirements – initial auctions should focus on currently viable technologies (onshore, solar and fuelled), but future auctions should have scope to include other technologies</p> <p>This will also be impacted by what other technologies are available in the NI market and realistically could be utilised for the scheme</p>

Consideration	RESS Approach	GB CfD Approach	Approach for NI Market
Technology agnostic schemes / Technological separation	Different pots used; one focused on community, one focused on all tech (in RESS 1, solar was separated out into its own pot to encourage diversity)	Different pots used Pots structures can change between each auction	Utilise different pots – use of different pots will be highly advantageous to the NI scheme Not only will this assist in allowing them to achieve diversification, but it also allows for evolution of the scheme, with pots being changed between auctions in the same manner as the other schemes
Integration with the SEM	Underpins auction design DAM prices used for market reference Capacity market considerations for setting of ECF	None	Careful balance required – the nature of the NI market, being linked to the SEM, will cause risks and DfE will likely have limitations in the possible approach they can take due to these arrangements
Ability to control inputs	Caps and budgets create ability to control/focus on one technology, and focus on community schemes (although community scheme moving out of RESS to SSG scheme)	Caps, budgets and maximums/minimums create ability to focus on one technology	Utilise caps/budgets – as much control as possible should be implemented into the scheme to protect consumers, so caps and maximums/minimums are crucial Assuming a CfD structure is used, more granularity is optimum, allowing for the different parameters of the scheme to be changed between each auction, to reflect market conditions, as is the case with the GB market
Flexible markets – Requirement	ECFs used to reflect the relative value different technologies provide to the system	None directly, although no payment for assets if market process drop below 0	Require flexibility – as a minimum, it will need to be confirmed that any engagement in the Balancing Market (BM)/flexible markets cannot lead to any revenue above the subsidy payment and that all entitles need to engage in the schemes How this is implemented will, however, depend on the relevant legislation

- 8.4 Thank you for taking the time to respond to this consultation, we welcome your feedback. The responses provided give DfE valuable insight, which will be considered throughout the next stages of development of a renewable electricity support scheme for Northern Ireland.

Question 14: Do you have any further comments on design considerations for a Renewable Electricity Support Scheme for Northern Ireland?

Please provide evidence, where possible, to support your response.