NETWORKS

# ESB NETWORKS RESPONSE TO DECC CONSULTATION ON PRIVATE WIRES

Submitted 27th October 2023

# Contents

# 1. Executive Summary

## 1.1 Introduction

We make this response on behalf of ESB's networks businesses, comprising the licensed transmission system asset owner and distribution asset owner functions, and the ESB Networks DAC licensed distribution system operator function, collectively referred to in this response as 'ESB Networks'.

ESB Networks welcomes the Department's consultation paper on private wires (the 'consultation'). Our purpose has always been to build and maintain national networks, and to connect and distribute electricity – safely, securely, and affordably. Appreciating the central role that electricity plays in climate action, our purpose has evolved to support the delivery of a clean electric future through the electrification of heat, transport, and industry, connecting renewable generation at scale to the electricity network and empowering the electricity customer to participate in the energy transition.

As the electricity sector transforms, we are increasingly using new solutions, like flexible demand and storage, to maximise the value of our network for customers and increase network efficiency, resilience, and the ability to integrate variable renewable energy sources. As set out in our strategy *Networks for Net Zero*[1], which was launched earlier this year, ESB Networks is committed to delivering its part to achieve the Climate Action Plan (CAP) targets for 2025, 2030 and beyond. A key part of that plan will be continuing to grow the capacity of the network to support electrification and decarbonisation. Our investment in the network is growing every year and is likely to be around €10 billion between now and 2030.

ESB Networks believes that continued high levels of investment in the national electricity system will be the mainstay of achieving Ireland's climate objectives. Whilst we recognise that there may be circumstances in which customers may wish to develop projects using private wires, ESB Networks is making significant investments and developments in the network for the benefit of all customers, that may reduce the necessity and demand for such private wires. ESB Networks supports the development of a policy around the use of private wires and considers that there may be limited circumstances in which private wires could play a useful role.

Given the potential for private wires to impact on the national distribution and transmission systems, it is essential that a private wires policy is based on sound principles, does not give rise to unintended consequences, and that a proper regulatory impact assessment is conducted. Moreover, legal certainty

[1] https://www.esbnetworks.ie/docs/default-source/publications/networks-for-net-zero-strategy-document.pdf?sfvrsn=e956923e_30

as regards what types of private wires are or are not permitted, and how they are regulated, will be critical to the successful implementation of any policy.

Private wires and private networks are broad terms, with no legal definition, and encompass various scenarios where electricity lines/networks would be in private ownership rather than under the ownership and control of the existing licensed asset owners/system operators. ESB Networks considers the terms 'private wire' and 'private network' can have even broader meaning than the definitions suggested by the Department in the consultation document, and effectively include any electricity wires that are in private ownership/control. This could encompass not only generation to demand scenarios (outlined by the Department), but also lines linking generation with other generation plant/sites, and, equally, lines linking demand sites to other demand sites. We agree there is a sensible distinction to be made between a 'private line' connecting to a single additional customer, compared with a 'private network' which would connect more than one additional entity (e.g. connecting a housing estate or business park) and we use these terms accordingly in our response.

In responding to this consultation, we have kept in mind the wider context and a number of key policy objectives, including:

- The National Development Plan (including housing targets)
- The impact on delivering the programme of works needed to meet CAP23 targets
- The Alternative Fuels Infrastructure Regulation (AFIR)
- The impact of private wires on the national electricity system and the interests of all electricity customers

Bearing these factors in mind, we have identified proposals for important overarching policy principles; criteria for assessing when private wires should be allowed; and the key elements of a governance framework. It is essential that these would all be implemented as part of a private wires policy. Based on these principles, we have also carried out a high-level assessment of various scenarios outlined in the consultation. Finally, we have provided some initial views on how such a private wires policy could be implemented, before outlining the investments ESB Networks is undertaking that may reduce future demand for private wires. Figure 1 seeks to summarise the key elements of our proposed approach and the structure of our response. We provide more detail on each aspect of Figure 1 in section 3 of this consultation response.

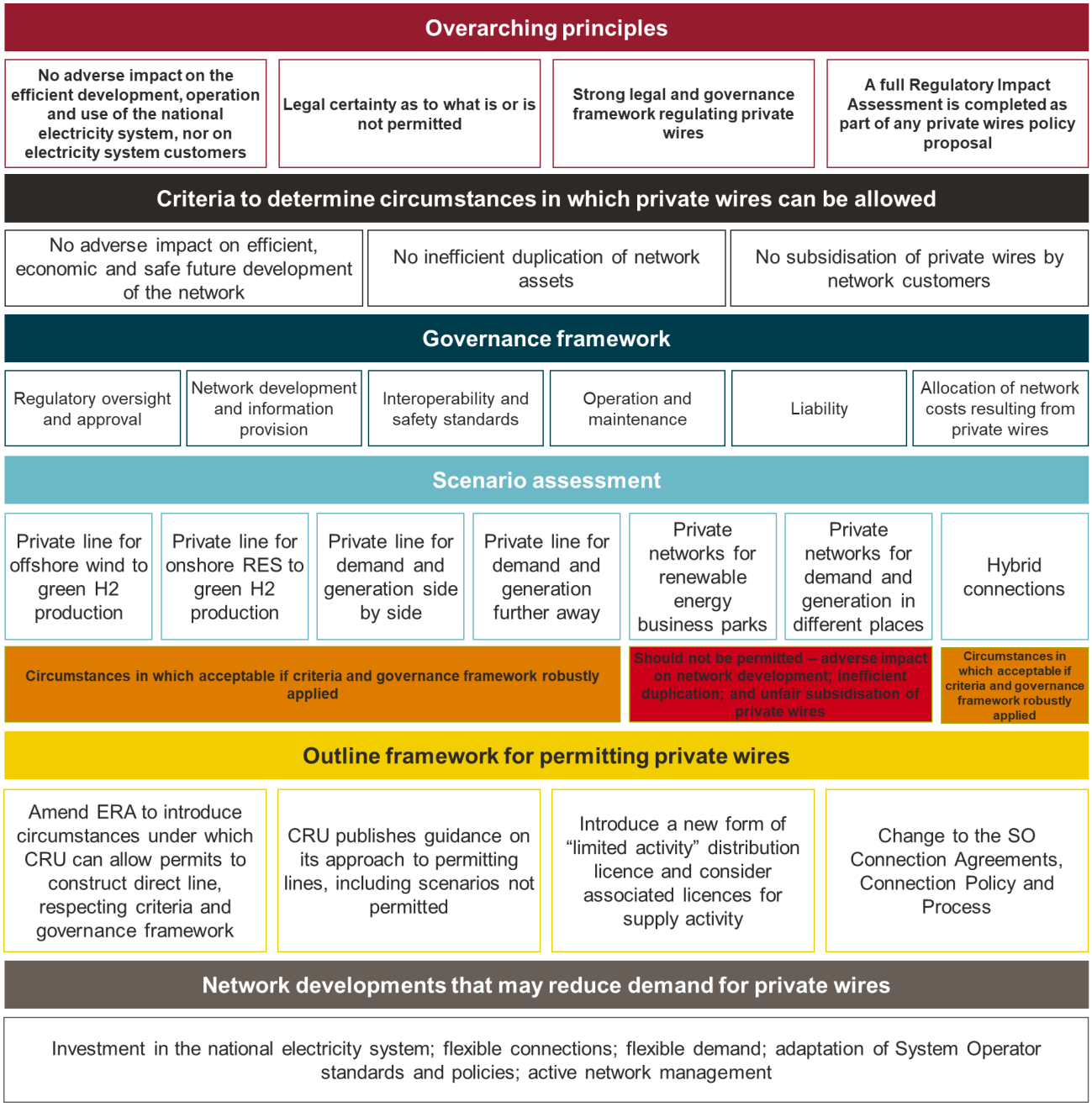


Figure 1: Summary of ESB Networks' Proposed Approach

## 1.2 Overarching principles

ESB Network considers that there are a number of overarching principles that must guide the approach and must be borne in mind for any scenario. These principles include, but may not be limited to, the following:

1. **Private wires must not adversely impact on the efficient development, operation and use of the national electricity system, and must not adversely impact on electricity system customers.**

   The core statutory and licence function of ESB Networks as DSO is to operate, maintain and develop the distribution system in an efficient, safe and economic manner as a natural monopoly provider, under national control and regulated by CRU. Equally, as TAO, ESB Networks supports the same licensed functions of EirGrid as TSO. The introduction of private wires must be managed appropriately to ensure that there is no negative impact on the carrying out of these functions to the detriment of the system and the system user. ESB Networks considers that the potential impacts on the system can be distilled into a number of threshold criteria for the assessment of the circumstances in which private wires are allowed.

2. **There must be a strong legal and governance framework regulating private wires**

   It is critical that private wires are subject to a strong legal, governance and regulatory framework. This needs to ensure that any private wires are subject to applicable laws/regulations as appropriate. In the absence of such a strong framework, there would be risks of a proliferation of unlicensed networks, with material negative consequences for the customer.

3. **There must be legal certainty as to what is or is not permitted**

   With the introduction of any new permitted categories of private wires, it is critical that there should be legal certainty as to what is or is not permitted, both in terms of the application of existing legal definitions, and any new categories of licence or exemption. This will require clear and tightly defined provisions in legislation and will need to be supported by guidance from the Department and/or CRU.

4. **Any private wires policy should be subject to a full Regulatory Impact Assessment**

   In line with the guiding principles set out in relation to Better Regulation, a full RIA should be completed for any proposed private wires policy. The RIA should, at a minimum, set out the expected benefits and costs of any proposed policy. In addition to the implications for the electricity networks and electricity sector, the impacts on related areas such as planning and environmental law, and agencies such as local authorities, An Bord Pleanála, the

Environmental Protection Agency, the Health & Safety Authority etc. would also need to be examined.

## 1.3 Criteria to determine the circumstances in which private wires are allowed

ESB Networks believes it is essential that clear threshold criteria are developed to determine the circumstances in which private wires are allowed:

1. **Private wires should not create a barrier to the efficient future development of the network**

   Careful consideration should be given when allowing private wires, to ensure no unintended consequences materialise and the development of the network can be done in a timely, efficient and cost-effective manner.

2. **There should be no inefficient duplication of network assets**

   Introducing private wires and especially allowing their proliferation could undermine the benefits of a national electricity network by unnecessarily duplicating network where it is not needed. Whilst this may be to the private benefit of a specific set of customers, on average customers will pay more for the same service. Private wires should therefore be limited to cases where there is clearly no duplication of network assets and where there is an efficiency argument in favour of the private wire solution. Where this cannot be demonstrated the decision should be to develop the established electricity system. The environmental impact of unnecessary duplication of network assets is also a relevant consideration.

3. **Network customers should not be required to subsidise users of private wires**

   It is crucial that all customers pay for the cost of their access to, and use of, the network. If private wires are allowed, careful consideration should be given to connection charges, cost allocation and cost recovery to ensure that private wires users adequately contribute to the ongoing cost of their connections and historic liabilities, so that no customer category ends up effectively subsidising private wire connections.

## 1.4 Governance framework

ESB Networks supports the use of private wires in certain circumstances, subject to the principles and criteria above being followed, and subject to an appropriate governance framework with safeguards being in place to govern the development of private wires.

The governance framework must cover a number of key issues, including:

- Regulatory oversight and approval within the context of a suitable legislative framework
- Network development and information provision
- Interoperability and safety standards
- Operation and maintenance
- Liability
- Network costs resulting from private wires

The most important safeguard is that CRU must have full oversight of the development of private wires and all private wire projects must require approval from the Regulator. As part of the assessment process, the Regulator must have regard to the views of the system operators, i.e. ESB Networks or EirGrid. This will ensure that private wires do not threaten the deployment of current or future plans for the networks and that constructive discussions between project developers, the CRU and the system operators can be arranged before costly investments are made. Further, it will be critically important that the governance framework addresses safety issues and standards in relation to the build, operation and maintenance of private wires. This response also outlines certain minimum safeguards that would be needed for the system operators to have the option to take over private wires in the future.

## 1.5 Scenario assessment

The consultation document set out a range of scenarios in which private wires might be used. ESB Networks has undertaken an assessment of each scenario, based on the principles, threshold criteria and governance framework set out above, indicating the scenarios which it believes could be allowed, and those which should not.

It is important to note that the assessment is predicated on the assumption that an appropriate governance framework with safeguards is put in place, and in particular that the Regulator must approve any proposed private wire. In the absence of such arrangements, ESB Networks would be opposed to any use of private wires.

If the proposed principles and governance framework were to be followed, ESB Networks considers that private wires could be allowed in certain instances[2] for the following use cases (assuming consistency with the overarching principles set out above and confirmation that there is no negative impact on network development):

- A direct line connecting offshore wind to an onshore electrolyser;
- A direct line connecting non-network connected renewable generation to an onshore electrolyser; and
- A direct line connecting non-network connected renewable generation to a demand customer.
- A direct line connecting generation to generation as part of a hybrid connection.

ESB Networks is not supportive, under any circumstances, of a policy that allows for the development of private networks. Such projects would:

- be highly likely to undermine the future efficient development of the network;
- likely lead to the inefficient duplication of network assets; and
- result in network customers cross-subsidising private wires.

This would be to the detriment of all customers and would be highly likely to negatively impact on the ability to meet our challenging decarbonisation targets.

## 1.6 Outline framework for permitting private wires

Based on all of the above, ESB Networks has given some consideration to what a legislative/regulatory framework for private wires might look like. This would require further careful assessment in terms of all impacts/consequences, but we include it in the response as a strawman for consideration.

This approach involves setting outer parameters in legislation for the CRU to grant permissions for private lines in the scenarios where the potential benefits could be sufficiently balanced against countervailing risks, subject to appropriate controls and governance. ESB Networks has suggested appropriate parameters. This would be further controlled by enabling CRU, in legislation, to issue such

[2] Note that this is not to imply that all proposed private wires in each use category could be allowed. The purpose of the assessment against the criteria will be to determine the specific projects in relation to each use case that are acceptable – i.e. those that do not: impact negatively on network development; result in duplication of network assets; or result in subsidisation of private wires customers.

permissions on a case-by-case basis, having due regard to specified criteria and the views of the system operators (including on the proposed route).

In any circumstances where a direct line permission is granted, the holder would also require a new distribution or transmission licence (or exemption), given that these activities are prohibited without a licence. It is suggested this could be a new form of 'limited activity' licence (requiring legislative amendment), that covers only the purpose (and route) for which the permission is granted. At higher voltage levels, a licence exemption would not, in the view of ESB Networks, be appropriate, as these lines would potentially have significant capacity and it would be important that CRU would have the full toolkit to regulate these lines. At lower voltage levels there may be a case for very limited categories of 'light' licence or exemption. In each case, there would also have to be facility for third party access to apply.

ESB Networks considers there must also be a minimum degree of regulation for private wires that are not deemed to constitute distribution or transmission, in order to ensure, for example, (i) that such lines are included in any centralised register of electricity lines; and (ii) to ensure there is scope for review of any proposals in respect of such private lines to establish if they may impact negatively on efficient development of the distribution or transmission systems.

## 1.7 Network developments that may reduce demand for private wires

ESB Networks recognises that there may be circumstances in which customers may wish to develop projects using private wires. We understand that in some cases this may be related to perceptions around the time it will take to connect to the network, or the capacity of the network in certain locations or the associated cost of connection. We note that there are a range of drivers of connection time, and that in our experience land access and the planning system are among the key determinants of connection times.

ESB Networks is undertaking a significant programme of work to accelerate connections and increase network capacity in order to meet the CAP23 objectives of increased renewables connections and increased demand from electrification.

We note that this should reduce the demand for private wires in the future. These developments can broadly be split between:

- **Investment to expand network capacity**
  We will continue to deliver major investment in network capacity/infrastructure across the network, with capital investment projected to grow year on year to 2030 and beyond. This will include the development of new distribution and transmission lines and cables, electricity substations and

transformers, as well as increasing the network capacity of the existing infrastructure. We will facilitate the connection of approximately 22 GW of renewable generation by 2030. As part of our 'Build Once for 2040' concept as set out in our *Networks for Net Zero* strategy, working closely with EirGrid, Industry and the Regulator we have developed a proposal for creating renewable hubs (110/38 kV and 110 kV/MV substations where clusters of renewable generation will be connected) which will be launched as part of this round of Enduring Connection Policy (ECP). Finally, we are working to develop a policy on advance build network reinforcements so that increased wind, solar, and batteries can connect safely to the electricity network.

- **Innovation to allow us to optimise the use of the existing network**
  We are developing innovative active network management solutions that will maximise the capacity of the network. This includes, for example, the updating of network planning standards to accommodate an increase in flexible connections. We have also launched a managed connections pilot whereby customers connect on a non-firm basis and avoid network uprates' and can connect more quickly. We are supporting the facilitation of hybrid connections that allow different generation technologies to connect behind a single defined connection point. We are seeking to put in place substantial volumes of contracts for demand side flexibility that will allow the connection of significant additional volumes of renewable generation. Finally, we are investing in a range of smart technologies including, for example, smart control room technologies; smart technology pilots including of smart charging, smart inverters, DSO-aggregator customer communications, and interoperability; and smartgrid LTE telecommunications networks enabling Ireland to introduce world leading local balancing and flexibility optimisation.

## 1.8 Conclusion

ESB Networks supports the development of a policy around the use of private wires and considers that there may be circumstances in which private wires could play a useful role. We have given the issue of private wires careful consideration and have attempted in this response to engage constructively by setting out at a high level the type of framework that could support the development and implementation of a private wires policy.

We appreciate the opportunity presented by this consultation to provide views to the Department. Considerable further consideration and work will be required by the Department before arriving at any firm proposals. We are eager to continue to work with the Department on this issue and suggest that the views of the system operators and the CRU, alongside other stakeholders, will help considerably to accelerate the development of a policy.

# 2. ESB Networks - who we are

ESB was established under the Electricity Supply 1927 to establish the Shannon hydroelectric scheme (Ardnacrusha) and to take over the development of Ireland's electricity network. At that time, more than 300 different suppliers were concerned with generating and supplying electricity in different parts of the country, including 16 local authorities and five private companies. The gradual transfer of responsibilities to ESB required the development by ESB of both engineering and administrative skills. Combining the many schemes throughout Ireland led to the development of the national electricity system, which ESB planned and maintained on a national basis providing efficiencies of scale and optimal electricity distribution.

Today ESB owns the and distribution transmission systems in Ireland and holds the transmission system owner (known as the 'transmission asset owner' or 'TAO') licence and the distribution system owner (known as the distribution asset owner or 'DAO') licence issued by the Commission for the Regulation of Utilities ("CRU"). ESB was required under those licences to designate a ring-fenced part of its business to carry out the asset owner functions and that is the business unit of ESB known as 'ESB Networks'. ESB Networks DAC is a subsidiary of ESB established pursuant to statute to carry out the licensed functions of the distribution system operator or 'DSO'. Under arrangements approved by CRU, the TAO and DAO businesses of ESB, and the DSO business of ESB Networks DAC are operated together under the management of ESB Networks DAC. We make this response on behalf of all three licensed networks functions, collectively referred to in this response as 'ESB Networks'.

EirGrid, an entity separate to ESB Group, is the licensed transmission system operator (TSO) responsible for operating and ensuring the maintenance and development, as necessary of the transmission system.

In its licensed networks functions, ESB Networks works to meet the needs of all Irish electricity customers, delivering the electricity network for Ireland's clean electric future. The network comprises 157,000 km of overhead networks, 27,000 km of underground cables, over 640 high voltage substations, and 2.5 million demand customers, significant amounts of connected generation - including 5.4 GW of renewable generation connected to the distribution and transmission systems - 475 MW of Battery Storage, and now several thousand "active customers" – including but not limited to domestic premises with microgeneration (a rapidly increasing number), demand side management, houses with battery storage, etc.

In its capacity as DSO, ESB Networks supports the electricity retail market through the ring-fenced Meter Registration System Operator (MRSO) and Retail Market Design Service (RMDS) and supports the wholesale Single Electricity Market through the provision of aggregated electricity meter data. We invest approximately €900m per annum, which is due to grow over the years ahead. We have 3,500

employees working in all parts of the country delivering a safe and resilient network. Customer service is at the heart of everything we do at ESB Networks.

We provide services to every electricity customer irrespective of their electricity supplier. We are committed to facilitating the move towards low carbon technologies, supporting all customers to enable them to participate in the energy market. Our operating environment is changing rapidly, driven by new policy and regulation measures, by the advancement of technology, and by the changing needs and expectations of our customers and stakeholders. This means the role of electricity is changing, bringing an opportunity to decarbonise society and enable all customers to take control of their energy consumption, participate in the energy markets, and adopt innovative energy products and services.

*Our Networks for Net Zero* strategy[3] was launched in 2023 and sets out our role in enabling the delivery of the Government's Climate Action Plan 2023 and supports the decarbonisation of electricity by 2040, which will enable the achieving of Ireland's net zero ambition no later than 2050. The strategy envisages an investment of €10 billion to make the electricity infrastructure more flexible and resilient by 2030 ensuring that Ireland is well placed to meet this ambitious emission reduction and renewable energy targets. We have identified three strategic objectives that are core to the delivery of our strategy, these are Decarbonised Electricity, Resilient Infrastructure and Empowered Customer. It is further underpinned by a suite of four foundational capabilities which will be critical to ensuring we are positioned to execute and deliver on our ambition: Our People, Digital and Data Driven, Financially Strong and Sustainable and Socially Focussed.

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[3] [3] https://www.esbnetworks.ie/docs/default-source/publications/networks-for-net-zero-strategy-document.pdf?sfvrsn=e956923e_30

# 3. Response to consultation

## 3.1 Introduction

ESB Networks welcomes the consultation on private wires. Our purpose in ESB Networks has always been to build and maintain national networks, and to connect and distribute electricity - safely, securely, and affordably. Appreciating the central role that electricity plays in climate action, our purpose has evolved to support the delivery of a clean electric future through the electrification of heat, transport, and industry, connecting renewable generation at scale to the electricity network and empowering the electricity customer to participate in the energy transition. This means delivering our role to help the targets for 2025 and 2030 as set out in Climate Action Plan 2023.

As the electricity sector transforms, we are increasingly using new flexibility tools to maximise the value of our network for customers and increase network efficiency, resilience, and the ability to integrate variable renewable energy sources. We believe that we are ideally placed to optimise the network and harness the full power of a single system for the benefit of the electricity customer.

As set out in our *Networks for Net Zero*[4] strategy document which was launched earlier this year, ESB Networks is committed to delivering its part to achieve the Climate Action Plan Targets for 2025 and 2030, and we are committed to develop net zero-ready distribution network by 2040 to enable Ireland's achievement of net zero no later than 2050.

While ESB Networks believes that the continued high levels of investment in the electricity system will be the mainstay of achieving our climate objectives, we recognise that there may be circumstances in which customers may wish to develop projects using private wires. This may be the case, for example where, a direct line could link a non-network connected generator and demand customer over a short distance. ESB Networks supports the development of a policy around the use of private wires, and considers that there may be circumstances in which private wires could play a useful role. The development of a private wires policy must, however, be subject to the appropriate principles, criteria and governance frameworks being in place to govern the development of private wires (see further below).

ESB Networks is particularly concerned that there are risks of unintended consequences associated with allowing a proliferation of private wires. The electricity network is highly complex, and ESB Networks believes that some proposed forms of private wires, and in particular private networks, are

[4] https://www.esbnetworks.ie/docs/default-source/publications/networks-for-net-zero-strategy-document.pdf?sfvrsn=e956923e_30

not compatible with the efficient development of the network and should not be allowed in any circumstances.

Private wires and private networks are broad terms, with no legal definition, and encompass various scenarios where electricity lines/networks are in private ownership rather than under the ownership and control of the existing licensed asset owners/system operators. It is essential to consider precisely in what circumstances private wires may bring benefits to the existing regulatory arrangements, and to tightly define what may be permitted under any new arrangements so as to avoid unintended consequences.

ESB Networks considers the terms 'private wire' and 'private network' can have broader definitions than suggested by the Department in the consultation document, and effectively include any electricity wires that are not under the ownership or control of the licensed distribution or transmission asset owner and the DSO/TSO. This could encompass not only generation to demand scenarios, but also lines linking generation with other generation plant/site, and, equally, lines linking demand sites to other demand sites. It is a separate question whether the private wire involves an activity that requires a licence. We agree there is a sensible distinction to be made between a 'private line' connecting to a single additional customer, compared with a private network which would connect more than one additional entity (e.g. connecting a housing estate or business park).

In responding to this consultation, we have kept in mind the wider context and a number of key policy objectives, including:

- The National Development Plan (including housing targets)
- The impact on delivering the programme of works needed to meet CAP23 targets
- The Alternative Fuels Infrastructure Regulation (AFIR)
- The impact of private wires on the national electricity system and the interests of all electricity customers;

Bearing these factors in mind, we have identified important overarching policy principles; criteria for assessing when private wires should be allowed; and the key elements of a governance framework. It is essential that these would all be implemented as part of a private wires policy. Based on these being in place, we have carried out a high-level assessment of various scenarios outlined in the consultation. Figure 2 seeks to summarise the key elements of our proposed approach, and the structure of our response. We note that considerable further work will be required to support the development of a policy, and we are available to engage with, and provide assistance to, the Department as part of that process.

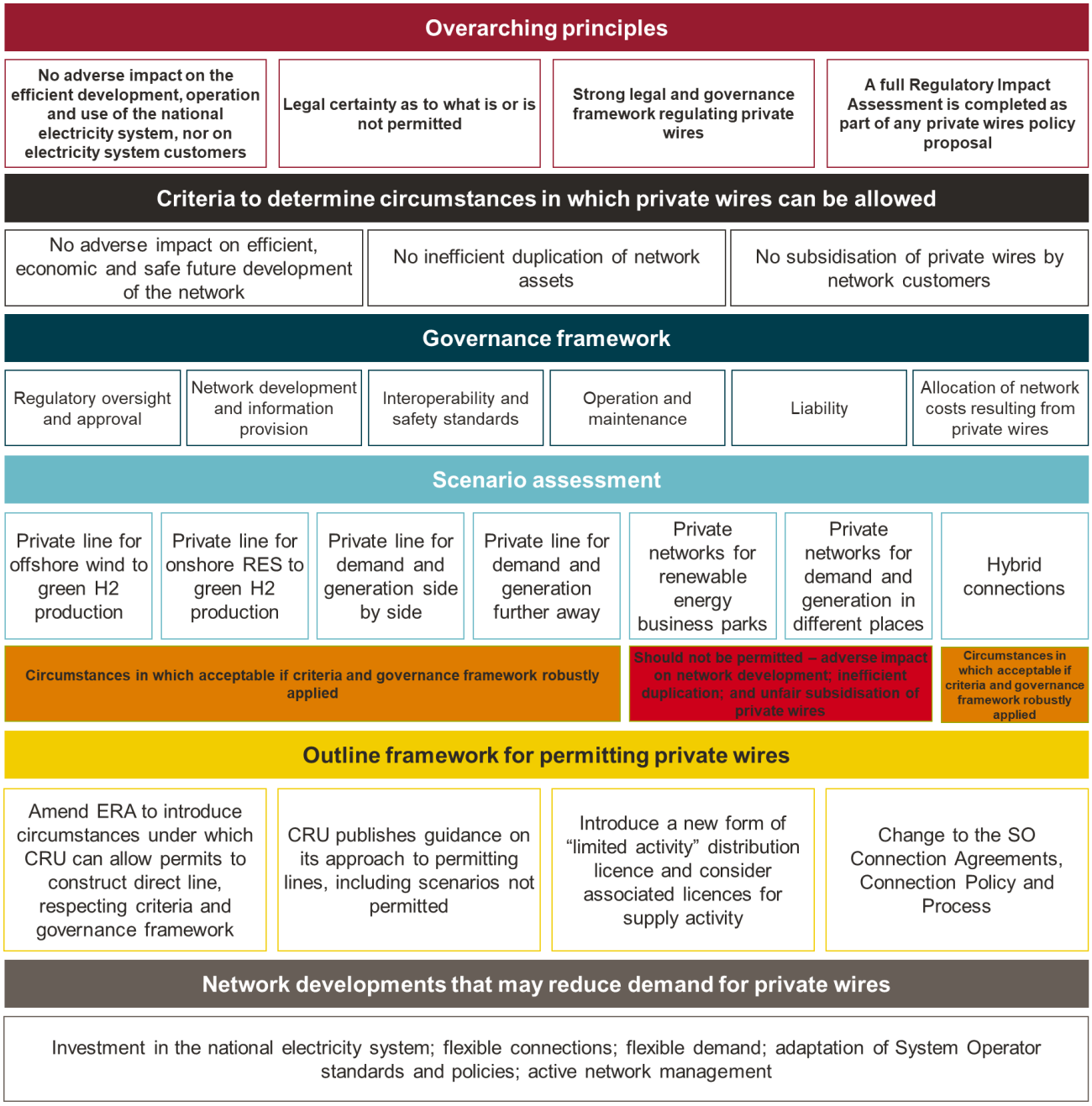


Figure 2: Summary of ESB Networks' Proposed Approach

## 3.2 Overarching principles

In developing a policy for private wires, ESB Network considers that there are a number of overarching principles that must guide the approach and must be borne in mind for any scenario. These principles include, but may not be limited to, the following.

1. **Private wires must not adversely impact on the efficient development, operation and use of the national electricity system, and must not adversely impact on electricity system customers**

The core statutory and licence function of ESB Networks as DSO is to operate, maintain and develop the distribution system in an efficient, safe, and economic manner. Equally, as TAO, ESB Networks supports the same licensed functions of EirGrid as TSO. The introduction of private wires must be managed appropriately to ensure that there is no negative impact on the carrying out of these functions to the detriment of the system or the system user. ESB Networks considers that the potential impacts on the system can be distilled into a number of threshold criteria for the assessment of any potential private wires scenario as described further below in the Section 3.3 'Criteria to determine whether private wires should be allowed'.

2. **There must be a strong legal and governance framework regulating private wires**

   It is critical that private wires are subject to a strong governance and regulatory framework. This needs to ensure that any private wires are subject to applicable laws and regulation as appropriate. In the absence of a strong framework, there would be multiple risks including a proliferation of unlicensed networks, deprivation of customer rights (such as the right to switch supplier), interference with the electricity system or other national infrastructure, public safety concerns, lack of clarity regarding liability for maintenance and increased network costs. This is all set out in further detail in Section 3.4 on the legal and governance framework.

3. **There must be legal certainty as to what is or is not permitted**

   With the introduction of any new permitted categories of private wires, it is critical that there should be legal certainty as to what is or is not permitted, both in terms of the application of legal definitions, and any new categories of licence or exemption. This will require clear and tightly defined provisions in legislation and will need to be supported by guidance from the Department and/or CRU. There should be clearly defined roles for the CRU and for the system operators in any system for permitting or reviewing of proposed private wire arrangements in addition to clear responsibilities for both the network connected customer and (if different) the owner/operator of a private wire. The need for legal certainty is a theme that is woven through this response.

4. **Any private wires policy should be subject to a full Regulatory Impact Assessment**

   In line with the guiding principles set out in relation to Better Regulation, a full RIA should be completed for any proposed private wires policy. The RIA should, at a minimum, set out the expected benefits and costs of any proposed policy.

In the following sections we expand upon two of the core elements needed to determine an appropriate private wires policy namely:

- The criteria needed to determine the circumstances in which private wires are allowed (Section 3.3); and
- The factors that must be considered in the legal and governance framework (including key safeguards) for any private wires (Section 3.4).

In the remaining sections we then:

- Set out our assessment of the key scenarios, highlighting the scenarios that we believe could be appropriate and those which are not appropriate (Section 3.5);
- Outline a potential framework to permit scenarios in a manner that seeks to ensure that the key principles are preserved (Section 3.6); and
- Describe the actions ESB Networks is taking to support CAP23 objectives and facilitate the achievement of climate change targets and to facilitate customer participation and engagement in the energy transition, which should reduce the need for private wires (Section 3.7)

## 3.3 Criteria to determine the circumstances in which private wires are allowed

ESB Networks believes it is essential that clear criteria are developed to determine the circumstances in which private wires are allowed. ESB Networks proposes that at a minimum, the following criteria must be used:

1. Private wires should not adversely affect the efficient future development of the network
2. There should be no inefficient duplication of network assets
3. Network customers should not be required to subsidise users of private wires

We expand on each point below. As noted above, while the selection criteria inform as to the circumstances in which private wires are allowed, a clear governance framework is also essential – we discuss the components of this in the following section.

### 3.3.1 Private wires should not adversely affect the efficient future development of the network

Major investment in network capacity/infrastructure across the distribution network is ongoing and further is planned. This includes the development of new distribution and transmission lines and cables, electricity substations and transformers, as well as increasing the network capacity of the existing infrastructure. We are predicting a demand growth rate of 3.5% annually nationwide from 2023-2030 on the distribution system to achieve CAP targets, resulting in a 50% increase in peak demand on the distribution system after the flexibility of electrification of transport and residential battery solutions are considered. Main drivers for demand growth come from the electrification of heat, transport, and industry, as well as demand associated with significant population growth, new housing developments and economic growth.

We will also be developing new 110 kV injection nodes across the country in the vicinity of the existing 110 kV electricity infrastructure.

ESB Networks is particularly concerned that if the proposed policy were to result in a proliferation of private wires, it would lead to significant inefficiencies and delays in the future development of the network described above. Some of the issues that private wires could create are set out below:

- Private wires may make connecting new customers to the network and upgrading our network more difficult and costly e.g. by sterilising available routes. If ESB Networks are required to go around a private line, this could lead to longer network being required with higher associated costs. While the impact of any individual project may be limited, the concern is that a proliferation of private wires projects would, in aggregate, significantly hinder the ability to develop the network efficiently and cost effectively.
- The costs associated with building new assets may increase, and the ease of doing so may decrease, with a potential to frustrate national network development plans. The risk is potentially two-fold:
    - First, landowner expectations on compensation may increase driving up costs for all network developments;
    - Second, there will be an increasing possibility that landowners will refuse/obstruct access to current system owners/operators where a landowner already has an existing line installed across their lands.
- If numerous private actors are allowed to enter the market and try to get access to the same land as the current network owners, this will inevitably exacerbate the challenges for system operators related to land access.

- The consultation refers to the potential to grant compulsory purchase (CPO) powers to private operators. Compulsory purchase orders involve a statutory right to acquire ownership of lands. ESB Networks considers that the grant of CPO powers to private operators would be disproportionate, unnecessary and would only further exacerbate the above issue. There is a distinction however, between compulsory purchase and statutory wayleave rights. ESB Networks considers there is an important role for statutory way-leaving in relation to private wires. See comments in the below section 3.6.6 in this regard.

- Networks are often built on public lands and run along the road network, as this is significantly easier and more cost effective when compared to securing land access rights associated with alternative routes. However, there is limited footpath/roadway space. Different utility service providers, including water, gas, telecoms, electricity, are all required to leave set minimum distances between services. If multiple third parties were to install electricity cables in the same footpath/roadway space without appropriate regulation and oversight, then an already congested space could become sterilized hindering future efficient development of the national electricity system and other critical infrastructure;

- Finally, the risk of interference from private wires with the national electricity system may also lead to a need for additional protective equipment to be installed on the national electricity system. This could increase the costs to electricity customers connected to the national network since those reinforcements would have otherwise not been needed.

These issues increase the greater the number of private wires that are permitted, either in terms of permitting more geographically extensive arrangements, or due to the proliferation of multiple small networks – cumulatively this can have a very significant impact on the DSO's ability to plan and develop the distribution system, which could lead to delays and additional costs for users of the electricity system.

This is why careful consideration needs to be given when allowing private wires, to ensure none of the above unintended consequences materialise and the development of the network can be done in a timely, efficient and cost-effective manner. This will be crucial to meeting Ireland's Climate Action Plan targets, and short term requirements from a subset of private actors should not come at the cost of long term plans for the benefit of society as a whole.

### 3.3.2 There should be no inefficient duplication of network assets.

Energy networks are associated with very high fixed costs, implying that the average cost per customer decreases as more customers connect to the network (marginal costs are below average costs, bringing economies of scale). This means that duplicating energy networks is inefficient: each individual consumer would just end up paying more for the same service. Across Europe, energy networks are therefore operated by regional or national monopolies.

To avoid negative impacts on consumers, monopoly network functions are strictly regulated. In Ireland, CRU have a legislative responsibility to ensure that the costs of investment are reasonable and efficiently incurred and do so by reference to peer organisations in other jurisdictions. They also ensure that customers pay a fair tariff for the use of the electricity systems.

Once they are correctly regulated, operating energy networks as natural monopolies bring significant benefits to society. A single provider is in a better position to take a holistic view of the network development, leading to optimal decisions and more efficient development of the network, with associated benefits to end customers.

A national network provider is also in a position to take a longer-term view of network development meaning that investment can be returned over a longer time period. Such a long-term perspective reflects the long-term nature of the assets themselves and having an entity that is guaranteed to be in existence over that lifetime means that long term decisions regarding maintenance and replacement can be taken allowing the most cost-effective decisions to be taken. For example, when a network company is laying cable, they will consider the likely future evolution of demand, and size the cable accordingly, so that it can meet future demand needs. This reduces the need for future interventions to increase capacity at the same location and minimises the sterilisation of land associated with a route. Conversely, a private operator would size the cable to the need of the customer they were supplying, without regard for other demand needs, resulting in a requirement for multiple competing cables.

In this way, introducing private wires, and especially allowing their proliferation, could undermine the benefits of a single network by unnecessarily duplicating the network where it is not needed. Whilst this may be to the private benefit of a specific set of customers, on average customers will pay more for the same service. Private wires should therefore be limited to cases where there is clearly no duplication of network assets and where there is an efficiency argument in favour of the private wire solution (for example, it could make sense to connect a renewables project directly to a single load customer rather than to the network depending on the location of the renewables). We consider that this requires both that the circumstances in which private wires are permitted to be appropriately defined, and that there are controls in place to ensure that those wires that are permitted will not impact negatively on the efficient development of the national systems. Neither of these controls would be

sufficient on their own – they must be combined to ensure that the number and impact of such wires is effectively managed.

Unnecessary duplication of network assets and a proliferation of private wires would also have the potential for unnecessary environmental impacts.

### 3.3.3 Network customers should not be required to subsidise users of private wires

One of the drivers for developers seeking permission to use private wires appears to be to reduce their costs. The Department appears to acknowledge this in the detailed discussion of network costs set out in Section 6.2 of the consultation document and we strongly echo the concerns raised in that section of the consultation.

Any governance arrangement for private wires should ensure that all private wires operators/or beneficiaries should be liable for any extra network reinforcement or equipment costs required to accommodate their lines and for any costs associated with providing a back-up supply / export connection point from the distribution or transmission system.

Equally, where customers with a private wire continue to receive a benefit from the electricity system (for example, where the electricity system provides back up to intermittent renewables) it is important that the tariff and connection charges such customers pay should appropriately reflect the cost they impose on the network and the benefits they receive. Otherwise, there would again be a cross-subsidy from other network connected customers.

If this is not properly addressed there is the risk of cross subsidisation to the private operator and an unfair burden being placed on other electricity customers. The impact on costs for all consumers must be considered to ensure that there is an appropriate and transparent basis whereby private wire connections contribute fairly towards any costs which occur as a result of the private wire connection.

In summary, it is crucial that all customers contribute towards the cost of their access to, and use of, the network. If private wires are allowed, careful consideration should be given to cost allocation and cost recovery to ensure that private wires users adequately contribute to the cost of their connections and the ongoing cost of the service they receive from the network, so that no customer category ends up effectively subsidising private wire connections.

## 3.4 Governance framework

ESB Networks recognises that there may be circumstances in which customers may wish to develop projects using private wires. ESB Networks supports the use of private wires, subject to the criteria above being followed, and subject to an appropriate governance framework with safeguards being in place to govern the development of private wires.

The governance framework needs to cover a number of key issues.

- Regulatory oversight and approval
- Network development and information provision
- Interoperability and safety standards
- Operation and maintenance
- Liability
- Network costs resulting from private wires

We discuss each in turn below. In addition to the below issues which are focused on the implications for the national network, and within the sector, there are also broader considerations which should be considered as part of a wider regulatory impact assessment, such as the impact on planning and environmental regimes, and any potential need for changes in legislation or policy in such other areas.

### 3.4.1 Regulatory oversight and approval

In cases where private wires are allowed, it will be essential to ensure that appropriate regulatory arrangements are in place. ESB Networks believes that such arrangements need to cover oversight and approval; and regulatory and licensing requirements.

#### Oversight and approval

To the extent that any category of private wires is provided for under the legislative and regulatory framework, the Regulator must have full oversight of the development of private wires. All proposed private wires must be required to seek regulatory approval, and the Regulator should decide on each application based on the criteria set out in the section above. Private wires should only be allowed where they do not create a barrier to the future development of the network; there is no inefficient duplication of network assets; and the network customer will not be asked to unfairly cross-subsidise the private wire.

As part of the assessment process, the Regulator would be required to have regard to the views of the relevant system operators; this will ensure that private wires do not threaten the deployment of current or future plans for the networks and that constructive discussions between project developers, the CRU and system operators can be arranged before costly investments are made.

Finally, ESB Networks believes that the Regulator should publish a guidance document setting out the assessment criteria the Regulator will use and the types of use case in which private wires could be compatible with the efficient development of the network.

### Regulatory and licensing requirements

There is a large body of legislation that governs the operation of the electricity system in Ireland which may need to be amended to accommodate private wires within the parameters of applicable EU laws. Similarly, there are regulatory and licencing requirements that will need to be updated and there are a large number of Industry Codes, for example Grid Code, Distribution Code, COPP (which already has rules regarding internal networks), Trading and Settlement Code, etc. that will need to be reviewed and updated to accommodate any permitted category of private wires, in addition to the regulated system operator connection agreements.

In any scenario that provides for the introduction of private wires, careful consideration must be given as to whether the arrangement will give rise to a distribution system (or indeed transmission system) within the meaning of the Electricity Directive/Electricity Regulation Act 1999 (ERA), and whether there will be a supply relationship created. This will impact on (i) what changes to existing legislation may be required if it is proposed to facilitate an arrangement (e.g. new licences or licence exemptions); and (ii) what obligations may apply to the owner/operator of the private wire. It should be noted that this is not a matter of discretion whether a distribution (or transmission) system is created – this will be a question of interpretation, based on the facts, as to whether the definition of distribution is met under EU and national law. Any private wire for the purposes of supply to a customer would seem to meet this definition. The Electricity Directive (2019/944/EU) sets out clear requirements for electricity distribution systems, and some of these apply regardless of the size of the system.

It is worth considering the ruling of the European Courts in the Citiworks case[5] , which clarified that the requirement to provide for third party access applied in respect of all transmission and distribution systems, irrespective of size, and that it is not open to Member States to exempt certain types of transmission or distribution systems from the requirement. Following this case, the UK government has had to change market rules to introduce third party access arrangements for small, licence-exempt distribution networks in the UK. This point is integral to any proposal for introducing private wires.

[5] Citiworks AG v Sachsisches Staatsministerium fur Wirtschaft und Arbeit als Landesregulierundsbehorde (Case C-439/06)

More generally, it will be essential to ensure that it is clear to all, from a legal and regulatory perspective, what scenarios are or are not permitted, and what is the applicable regulatory framework for any category of private wire.

In order to properly assess what changes may be needed to facilitate any private wires that the Department is minded to allow, it is necessary to first be very clear on the existing position in regard to what is or is not permitted. The Department has alluded in its consultation to the potential for certain scenarios to fall outside of the regulatory regime. We assume this is a reference to private wire arrangements that fall short of the definition of distribution (and potentially also supply). We believe there is the potential for private wire arrangements that would, without intervention, be 'unregulated' and we deal with this further in Section 3.5.

### 3.4.2 Network development and information provision

As noted above, a key concern for ESB Networks relates to the potential impact of private wires on our ability to effectively and efficiently develop the network to meet the needs of all customers at lowest costs and meet our key decarbonisation targets.

In addition to the regulatory approval process described above, there are a number of other safeguards that would manage the impact private wires have on the network:

- The Regulator's guidance must make clear that private wires should only be allowed where it is clear that the route they take is unlikely to interfere now, or in the future, with the development of the network.;
- The system operators must have full sight of the development of all private wires – third parties must be required to provide accurate information to the system operators on the location of all private wires, and consideration should be given to an audit process around such information provision;
- In order that they can be taken over by the system operators in the future if appropriate, private wires should be built to standard ESB Networks or TSO designs and to the standards observed by ESB Networks, as is currently the case for contestably built assets. This will ensure that, if relevant, system operators can take over private wires and be reassured that the assets are operating under the same standards as their network. This asset assurance process will require due diligence and auditing procedures to be undertaken by a suitable body to ensure that private wire assets are built and maintained to a suitable standard.
- The system operators should have the right, but not the obligation, to take over the infrastructure at any time in the event that it is needed to facilitate the development of the

network. The framework should ensure that where such lines are taken over, there are appropriate remuneration/cost recovery mechanisms for the system operator(s)/asset owner.

We note that these safeguarding arrangements are similar to what is in place in other jurisdictions. For example, the Dutch regulator requires that any private wire is reported to them and that relevant information on the type and location of the assets is provided. In addition, Under EU law, direct lines can be refused if they lead to obstructing the application of the provisions on public service obligations. In fact, in France, direct lines can only be allowed if they demonstrate their complementarity to the national grid.

### 3.4.3 Interoperability and safety standards

Public safety in the operation of the network must be paramount. ESB Networks has obligations to ensure public, and staff, safety is managed appropriately firstly as it is a core value of our organisation and secondly by our commitments under TAO, DSO, DAO licence obligations including mandatory compliance with relevant SHAWW Act legislation and other relevant regulations/legislation.

ESB Networks believes that in the event private wires are allowed, they must be built and maintained to the same standards as the national distribution and transmission networks. Moreover, the system operators should have full sight of the development of private wires, as they may have to take actions to accommodate/mitigate the impact of the private wires on the distribution and transmission networks. Where system operator actions are required, it will be important to ensure there is clarity around the allocation of costs associated with such actions (see below).

Private wires could pose serious risks around the safe interoperation of multiple lines / systems that are connected to the current distribution and transmission networks. These risks could include physical interference with the distribution system or other networks (rail, telecoms etc.), either during construction/maintenance phases, or because of de-rating of cables due to proximity, or harmonics issues due to harmonics on private wire systems coupling to nearby ESB Networks circuits, or to ground potential rises on private wire systems, affecting ESB Networks connected customers in the vicinity.

It is likely that in many cases the purpose of the private wire will be to connect new renewable generation to a demand customer. It is highly likely that the demand customer will continue to have a network connection, either because the renewable generation does not fully meet the demand customer's requirements or to deal with the intermittency issues associated with renewable generation. Consequently, the private wire generator will be operating in parallel with the overall system, and assessment by the system operator will be essential as part of the normal connection application process. This is because such parallel operation increases short circuit levels for equipment (if

exceeded then equipment can catastrophically fail). This can affect system stability where transient disturbances affect connected generation. It may require the installation of suitable protection systems; assessment of ground potential rise and how it might affect nearby DSO networks; and power quality disturbances from harmonics and voltage changes may also be excessive. We note that in some cases the negative impacts could also affect other customers connected to the system nearby.

One extremely important safety issue relates to dial before you dig and emergency response. Turning first to dial before you dig. It will be important to ensure that similar information is available in relation to the system operators and private wire operators. However, and particularly if there were to be a proliferation of private wires, this has the potential to cause challenges for third parties, if they are required to contact multiple organisations to identify where wires may be located. Clearly a single national dial before you dig service would be preferable, but there are important issues surrounding indemnities, information accuracy and emergency response that make the provision of a single service very challenging, and which would require careful consideration.

Currently, ESB Networks is the point of contact in the event of an incident on its network involving a third party, in the event of storm damage or in any other circumstances where there is a danger to the public from electricity wires. However, in the future, in the event that similar issues occur in relation to private wire infrastructure, there will be a challenge for third parties to know who to contact. It is important to note that it would not be possible or appropriate for ESB Networks to provide emergency response to third party infrastructure which it does not own or operate. Again, careful consideration will be required as to how to address this issue.

### 3.4.4 Operation and maintenance

It will also be important to ensure that the regulatory arrangements for private wires cover their operation and maintenance. Private wires are long lived assets, and therefore must be carefully operated and maintained over their entire lifetime. Process and equipment standards should be equal to those practised and used by ESB Networks should therefore be in place for the operators of private wires.

Moreover, we note that the asset life of the private wire is likely to be considerably longer than the asset life of either the renewable generation or demand that it is connecting. Consequently, it is likely that the contract between the generation and demand entities will be significantly shorter than the life of the asset. Rules therefore need to be in place to govern eventualities whereby the private wires are no longer needed in the future. It would be untenable to allow unused private wires, or to require ESB Networks to take on (on behalf of the customer) the expense of maintaining redundant infrastructure.

And in the event that ESB Networks were to take over the infrastructure, it is even more important that it has been built to network standards and properly maintained.

We note that ESB Networks must meet strict targets around customer interruptions and customer minutes lost. ESB Networks also has obligations in relation to emergency response and restoration of power in the event of a safety issue or outage (e.g. due to storm damage). Again, it will be important to ensure that the governance arrangements make clear the obligations of private wire operators in this regard.

Finally, we note that in the event that there are concerns regarding the safe operation of the private wire, or the infrastructure that it is connected to, or the impact it is having on the electricity system, then the private wire would be disconnected. Given that the point of connection to the network will typically be the demand customer, this would mean disconnecting the demand customer. More generally, we note that there may need to be amendments to the connection agreement regarding the firmness of access to the network.

### 3.4.5 Liability

The DSO/TSO will not have any responsibility or liability for private wires. These are lines that will be under the ownership and control of third parties. This position must be reflected in the legal and governance framework implementing any new private wires policy and it is essential that it is made clear to the public in any published guidance.

This issue is closely linked with the issue concerning provision of network information, so that there is transparency as to who is responsible for privately owned wires and members of the public have a means of identifying both the existence of the lines (for public safety reasons). ESB Networks considers that this should apply regardless of the legal basis on which the line is permitted (e.g. whether it licensed, or falls below licensing thresholds).

In order to maintain a safe environment for all stakeholders who are involved in the construction of electricity networks, the public, and other entities who are working in proximity to the network, it is critical to ensure that as far as possible, comprehensive records of all networks should be maintained. As noted in the consultation, the fact that currently there is a single entity that has responsibility for ownership of all wires that are currently installed makes the maintenance of such records more straightforward.

If and to the extent that private wires are permitted, it would be important to ensure that there is a clear and separate definition of the national distribution and transmission and distribution systems so that the TSO and DSO are not responsible for private wires by default (e.g. simply by virtue of it being a ‘distribution’ or ‘transmission’ system).

It will need to be made clear that private wire owners/operators will be responsible for their possible impact on the distribution system, e.g. due to electrical interference (harmonics, voltage disturbances, increased short circuit levels, ground potential rise), physical interference (contact or damage caused from nearby private wire), or spatial interference (lack of clearance between private wire and DSO/TSO cables/lines for installation or maintenance), or physical damage caused to the distribution system or equipment of distribution connected customers by the operation of private wires.

The lines of responsibility can be made clear through a combination of legislation, licence provisions (for any new category of licence) or conditions attached to any licence exemptions, and guidance. In addition, the TSO and DSO Connection Agreements (each regulated documents) will need to be amended to reflect permitted onward connection. The contractual arrangements would require careful consideration, but at a minimum, in ESB Networks view, the network connected customer must be responsible at all times for compliance of the arrangements with the Connection Agreement/Grid Code/Distribution Code etc. and the system operators should be indemnified from liability to onward connected parties with whom they have no direct contractual relationship (e.g. as a result of outages on the distribution system etc.).

Finally, we note that it will be important that the operators/owners of private wires are required to have appropriate insurances in place.

### 3.4.6 Network costs resulting from private wires

It is likely that any private wire scenario suggested in the consultation will have some impact on the current distribution or transmission systems. Therefore, in order to ensure the safe operation of the network, and to protect customers connected to the current systems ESB Networks would need to study any private wire proposal and make or require investments (as necessary) in suitable protection measures to protect the integrity of the distribution and transmission systems. The costs of any such works will be the responsibility of the private wire operator rather than network customers.

Finally, ESB Networks notes that the current connection charges and network tariffs (TUOS and DUOS) were designed on the assumption that customers would use the network for their electricity needs and not simply as a security of supply back up. Consequently, the costs imposed by a demand customer are not fully recovered through the initial connection charge (as customers receive a 50% capital allowance towards their connection). Moreover, many of the costs associated with the network are driven by the peak capacity the network is required to meet, rather than the average use of the system. Consequently, if a customer is connected to the network they impose a cost, even if they use the network infrequently for back up, as the system operator has to be able to meet their demand in the event they choose to use the network. It is highly likely that users of private wires connected to

intermittent renewable generators (for example solar or wind) will need to rely on the electricity system when the sun is not shining, or the wind is now blowing. This implies that a private wire customer who uses the network infrequently could be paying less than the costs they impose on the network and less than a similar customer without a private wire.

If use of the network for back up security were to become widespread, it is highly likely that the structure of charges to customers in such circumstances would need to change materially.

## 3.5 Scenario assessment

ESB Networks recognises that there may be circumstances in which customers may wish to develop projects using private wires. The Department's consultation document set out a range of scenarios in which private wires might be used. In this section ESB Networks provides a high-level assessment of each scenario based on the principles set out above, indicating the scenarios which it believes could be allowed, and those which should not. It is important to note that the assessment is predicated on the assumption that an appropriate governance framework with safeguards is put in place, and in particular that the Regulator must approve any proposed private wire. In the absence of such arrangements, ESB Networks would be opposed to any use of private wires.

Table 1 summarises our assessments for the different scenarios[6]. These are detailed further in the following subsections. The assessments set out here represent a threshold assessment to determine which types of wires could be allowed in principle. In section 3.6 we further set out a potential legal framework for permitting and regulation of private wires, and consider, amongst other things, what overarching parameters would be required to allow private wires/networks such that the future development of the national system is efficient and safe.

[6] The table provides an assessment of 8 of the 10 scenarios in the consultation document. We do not provide an assessment in relation to EVs or citizen engagement as the questions asked in the consultation were different in nature.

| | Inefficient duplication of network assets | Barrier to the efficient future development of the network | Subsidisation of private wires users | ESB Networks' position |
|---|---|---|---|---|
| Private line for offshore wind to green H2 |  |  |  | Can be allowed if criteria and governance framework is robustly applied. In particular, need to ensure that there is no impact on future efficient development of the network. This will largely depend on the location of the proposed electrolyser. |
| Private line for onshore RES to green H2 |  |  |  | Can be allowed if criteria and governance framework is robustly applied. Again, key issue relates to the location of the onshore RES and the electrolyser, as well as ensuring that a private wire would not impact the future efficient development of the network. |
| Private line G-D side by side |  |  |  | Can be allowed if criteria and governance framework is robustly applied. Should not be allowed where both demand and generation are network connected, as this would give rise to inefficient duplication. Need to ensure no cross-subsidisation. |
| Private line G-D further away |  |  |  | Can be allowed if criteria and governance framework is robustly applied. Should not be allowed where both demand and generation are network connected, as this would give rise to inefficient duplication. Need to ensure that private wire does not impact on efficient development of the network. Need to ensure no cross-subsidisation. |
| Private network for RES business parks |  |  |  | Should not be allowed under any circumstances. Highly likely to give rise to inefficient duplication, to impact on network development and to result in cross-subsidisation. |
| Private networks |  |  |  | Should not be allowed under any circumstances. Highly likely to give rise to inefficient duplication, to impact on network development and to result in cross-subsidisation. |
| Hybrid Connections 1: private line G:G side by side |  |  |  | Can be allowed if criteria and governance framework is robustly applied. |
| Hybrid Connections 2: private line G:G further away |  |  |  | Can be allowed if criteria and governance framework is robustly applied. Important to ensure no impact on efficient development of the network. |

Table 1: Summary of Scenarios

### 3.5.1 Private line for offshore wind to green hydrogen production

Our understanding of the scenario proposed in the consultation document is as follows[7]:

- Private wires would be used to connect renewable electricity generated offshore to electrolysers onshore in order to produce green hydrogen.
- The onshore electrolysers would not have a network connection.

We suggest that this scenario could meet the criteria set out earlier. Private lines could in some instances be allowed in this scenario, subject to an appropriate governance framework with safeguards being in place. Our assessment is as follows.

- **Network Development**

  The impact on network development would depend on the location of the onshore electrolysers. Assuming that onshore electrolysers were located appropriately, did not use land earmarked for the development of the electricity system and did not require lengthy onshore private lines, there should be limited impact on the ability to efficiently develop the network.

- **Inefficient duplication**

  Again, this depends on the location of the electrolysers. Assuming the above conditions are met, there should be limited if any duplication of network assets.

- **Cross-subsidy**

  Again, this depends on the location of the electrolysers. Assuming the above conditions are met, there should not be any cross-subsidy[8].

- **Impact of governance framework**

  The governance framework would address any concerns regarding this scenario. In particular, the Regulator would only provide approval for projects where electrolysers meet the conditions set out above. See further outline framework described in Section 3.6.

[7] If the Department considers different scenarios, ESB Networks requests the opportunity to consult or engage with the Department. This applies to the other scenarios we consider in the remainder of this chapter.

[8] In the event that the electrolyser has a network connection, this assessment would change, and would be similar to that set out below for scenarios in which non-system connected generation is connected to system-connected load.

### 3.5.2 Private line for green hydrogen production from onshore renewable electricity

Our understanding of the scenario proposed in the consultation document is as follows:

- Private lines would be used to connect renewable electricity generated onshore to electrolysers onshore to produce green hydrogen.
- Neither the renewable generation nor the electrolysers would be connected to the electricity system.

We suggest that this scenario could meet the criteria set out earlier. Our assessment is the same as for offshore renewables connected to onshore Green Hydrogen, although we note that in this scenario, risks of unintended consequences may be higher given that more land onshore would be used by private lines. Private lines could in some instances be allowed in this scenario, subject to an appropriate governance framework with safeguards being in place.

### 3.5.3 Private line for demand and generation located side by side

Our understanding of the scenario proposed in the consultation document is as follows:

- Private lines would be used to connect a demand and generation site located side by side, where the private line connecting the two would not cross third-party lands.
- The demand entity would likely also be network connected.
- The generation entity might or might not be network connected or might be seeking a network connection.

We suggest that this scenario could meet the criteria set out earlier, although only in scenario where the generation is not network connected. Private lines could in some instances be allowed in this scenario, subject to an appropriate governance framework with safeguards being in place. Our assessment is as follows.

- **Network Development**

  Given that the demand and generation is contiguous and does not cross third party lands, it should not impact on network development.

- **Inefficient duplication**

  This depends on whether the generation entity is, or will be, network connected. In the event that the generation and demand are both network connected, it is highly likely that the private

line will inefficiently duplicate network assets. In the case where generation connects to the demand customer, but not the network, this is less likely to be the case.

- **Cross-subsidy**

  It is likely that there may be a cross-subsidy from other customers. Demand will secure the full benefits of network access but will not be paying for those benefits as envisaged when the network charges were designed.

- **Impact of governance framework**

  The governance framework could, if appropriately designed, address any concerns regarding this scenario where the generator is not network connected. In particular, we suggest the Regulator would only be likely to provide approval for projects where generation was not network connected. See further outline framework described in Section 3.6. We do not consider that it is appropriate to allow the scenario where the demand and generation are connected separately to the network where they also have their own interconnecting private wire.

### 3.5.4 Private line for demand and generation located some distance from one another

Our understanding of the scenario proposed in the consultation document is as follows:

- Private line would be used to connect a demand and generation site located further away from each other, where the private line would need to cross-third party lands.
- The demand entity would likely also be network connected,
- The generation entity would not be network connected.

We suggest that this scenario could meet the criteria set out earlier, although it will largely depend on the length and proposed location of the private line. Private lines could in some instances be allowed in this scenario, subject to an appropriate governance framework with safeguards being in place. Our assessment is as follows.

- **Network Development**

  The impact on network development depends on the location and length of the private line. The consultation document mentioned scenarios where the renewable generation is relatively close to demand, but also scenarios involving distances of up to 100km. ESB Networks believes that any project involving a private line of significant lengths including up to 100km would be highly likely to impact on the efficient development of the network. However, it is not possible to put a

hard cap on the distances allowed: this will vary from location to location depending on the network configuration in the area, likely connections of renewables and future demand customer needs. This highlights the need for an approval process, where the Regulator would assess each project individually having regard to the views of the system operators.

- **Inefficient duplication**

  This depends on the location of the generation, and the route of the proposed private line. It is possible that the generation is located such that a private line is a more efficient solution. However, it may also be the case that the generation could be more efficiently connected to the electricity network, than the demand customer. In this case, it would give rise to inefficient duplication of network assets. We note also that the laying of long distance private lines for a single demand customer has a high potential to result in inefficient duplication.

- **Cross-subsidy**

  It is likely that there may be a cross-subsidy from other customers. Demand will secure the full benefits of network access, but will not be paying for those benefits as envisaged when the network charges were designed

- **Impact of governance framework**

  The governance framework could, if appropriately designed, address any concerns regarding this scenario. Indeed, this scenario highlights that the governance framework and regulatory approval will be essential in facilitating the use of private lines, as it is impossible to develop blanket criteria based on distance alone, to determine whether a private line should be allowed. In this scenario, we suggest the Regulator would only be likely to provide approval for projects where the private line was highly likely to have only minimal impact on the future development of the network and was unlikely to result in inefficient duplication.

### 3.5.5 Private network for renewable energy business park

Our understanding of the scenario proposed in the consultation document is as follows:

- Projects involving privately owned, operated, and maintained electricity network, at either distribution or transmission level, for the purpose of supplying power to a business park's residents.
- These potential projects could see both generation and demand co-located on site at a business park.
- Other projects could entail the location of some of the generation assets on sites away from the business park, with associated private lines required to link generation sites to the business park, with the electricity then distributed over the private network as required throughout the business park. The potential business parks may not be able to meet all the demand generated by its residents through their own generation, and hence a national electricity system connection would be required.
- A demand user within a park may have their own connection to the national electricity system and secondary supply contract for the provision of electricity with the business park.

ESB Networks believes that there are no circumstances in which this type of scenario could meet the criteria set out earlier. Moreover, the governance framework would not provide mitigation to allow such projects. Consequently, ESB Networks is not supportive of the development of private networks under any circumstances. Our assessment is as follows.

- **Network Development**

  Arrangements of this nature will inevitably and materially impact on the future efficient development of the network. If projects of this type are allowed to proceed, there could be sufficient private networks to make the future planning and development of the network more complex, costly, and take longer to deliver. This is particularly the case given that demand customers in such an arrangement would have a right to seek a network connection, which could be difficult if not impossible to provide while avoiding the private network infrastructure.

- **Inefficient duplication**

  This type of project is highly likely to give rise to inefficient duplication of network assets. If demand customers, or the business park as an entity, require a backup network connection, ESB Networks will have to provide the capacity to support their full demand, even if it is required less often, and in some cases rarely used. Similarly, there would be duplication of functions such as system operation, emergency response and network maintenance.

- **Cross-subsidy**

  There is likely to be substantial cross-subsidy in this case. In the case where the business park is the customer, the park will be 'competing' to provide the connection and network operation for the business park, while relying on the network, and network customers to provide back up security of supply for its site. We note that absent the back-up network connection the project would likely be commercially unviable.

- **Impact of governance framework**

  While in theory the governance framework could address concerns regarding this scenario, in practice it would significantly increase the complexity of the governance arrangements. In particular, complex arrangements would have to be made to define the regulatory framework related to liability, maintenance, emergency response, network interference etc. Moreover, it is highly unlikely that the Regulator would provide approval for such projects if they were following the criteria laid out earlier in this response, given their impact on the development of the network and the cost impact on existing network customers.

ESB Networks believes that such projects should be explicitly excluded from any private wire policy developed by the Department.

### 3.5.6 Private network for demand and generation located in different places

Our understanding of the scenario proposed in the consultation document is as follows:

- Projects to develop private networks for the supply of dispersed demand users.
- A potential project of this nature would see a large private network created in an area to transfer electricity from generation site, or multiple generation sites, to multiple disperse demand users.
- The consultation suggests distances of up to 100KM in respect of the length of individual cables required for this type of project. Projects of this nature would see the installation of multiple electricity cables, of varying length, at distribution and/ or transmission level, linked together to create a private network.
- Given the potential scale and dispersed nature of such projects, the private networks created would, in most instances, span vast areas crossing publicly and privately owned land, and traversing the public roadways.
- The demand users envisaged by this type of project vary in nature and could include multiple XLEUs, LEUs, and mid-size demand users but could also entail groups of domestic households such as housing estates or apartment blocks. While the private networks created would be

separate to the national electricity system, the consultation suggests that connections to the national electricity system would be required and/ or maintained. Such connections would be envisaged at both the generation sites and at the demand users' sites.

ESB Networks believes that there are no circumstances in which this type of scenario could meet the criteria set out earlier. Moreover, the governance framework would not provide mitigation to allow such projects. Consequently, ESB Networks is not supportive of the development of private networks of this type under any circumstances.

Our assessment is essentially the same as for the previous scenario. However, it is worth noting that the scale of problems created by the type of scenario described above increase with the size of the network, the geographic spread of the network and the type of customer served.

ESB Network strongly believes that the development of such projects would deeply undermine the effective development and operation of the national electricity system and would be highly detrimental to all customers.

ESB Networks believes that such projects should be explicitly excluded from any private wire policy developed by the Department.

### 3.5.7 Hybrid connections

As set out in the consultation document, ESB Networks has been working with CRU and EirGrid to ensure that hybrid technology electricity system connections are facilitated. Hybrid connections refer to the connection of a mix of different forms of generation assets, to include wind, solar and battery, to the national electricity system through a single connection point. ESB Networks is supportive of the development of hybrid connection policy.

The consultation document does not specify any scenarios in relation to hybrid connections and private wires. However, we envisage that two scenarios could be most likely to arise:

- **Scenario 1:** a generation-to-generation private line, where the relevant generation entities are located on contiguous sites; and
- **Scenario 2:** a generation-to-generation private line, where the relevant generation entities are located further away from each other.

We assess both in turn below.

**Scenario 1: a generation-to-generation private line, where the relevant generation entities are located on contiguous sites**

We suggest that this scenario could meet the criteria set out earlier. Private lines could in some instances be allowed in this scenario, subject to an appropriate governance framework with safeguards being in place. Our assessment is as follows.

- **Network Development**

  Given that the demand and generation is contiguous and does not cross third party lands, it should not impact on network development.

- **Inefficient duplication**

  This is unlikely to be a concern as the main rationale for hybrid connections is to minimise duplication of network infrastructure,

- **Cross-subsidy**

  Unlikely to be a concern on the distribution network as generation pays its full generator connection charge, and the connection would need to be sized to accommodate all generation connected through the private line.

- **Impact of governance framework**

  The governance framework could, if appropriately designed, address any concerns regarding this scenario. See further outline framework described in Section 3.6.

**Scenario 2: a generation-to-generation private line, where the relevant generation entities are located further away from each other**

We suggest that this scenario could meet the criteria set out earlier, although it will largely depend on the length and proposed location of the private line. Private lines could in some instances be allowed in this scenario, subject to an appropriate governance framework with safeguards being in place. Our assessment is as follows.

- **Network Development**

  The impact on network development depends on the location of the private line. Whether the private line will impact on network development will vary from location to location depending on the network configuration in the area, likely connections of renewables and future demand customer needs. This highlights the need for an approval process, where the Regulator would assess each project individually having regard to the views of the system operators.

- **Inefficient duplication**

This depends on the route of the proposed private line. It is possible that separate connections could be a more efficient solution than a private line and hybrid connection arrangement. In this case, it would give rise to inefficient duplication of network assets. We note also that the laying of long-distance private lines for a single customer has a high potential to result in inefficient duplication.

- **Cross-subsidy**

Unlikely to be a concern on the distribution network as generation pays its full generator connection charge, and the connection would need to sized to accommodate all generation connected through the private line.

- **Impact of governance framework**

The governance framework could, if appropriately designed, address any concerns regarding this scenario. Indeed, this scenario highlights that the governance framework and regulatory approval will be essential in facilitating the use of private lines, as it is impossible to develop blanket criteria based on distance alone, to determine whether a private line should be allowed. In this scenario, we suggest the Regulator would only be likely to provide approval for projects where the private line was highly likely to have only minimal impact on the future development of the network and was unlikely to result in inefficient duplication. See further outline framework described in Section 3.6.

### 3.5.8 Electric vehicles

In considering the relevance of private wires to electric vehicles, there are various potential scenarios, including for example, EV operators ‘daisy-chaining’ networks along public spaces. Following engagement with various key stakeholders in this space, including Local Authorities, EV Charge Point Operators and Original Equipment Manufacturers, ESB Networks has developed appropriate technical solutions to enable ease of deployment of such infrastructure. These solutions have been implemented in practice and are compliant with the existing regulatory arrangements.

However, ESB Networks understands that the development of EV charging facilities is an important national requirement and government is rightly keen to prioritise any proposals that will help to meet the targets for charge point rollout. If consideration is being given to the introduction of private wires, the Department should be aware that there are a range of regulatory and technical issues that will need to be addressed and that there will be impacts on the network that will need to be considered. It would therefore be important that there would be engagement with ESB Networks before any new EV

charging arrangements were introduced. ESB Networks reiterates that we are committed to working with the department and industry to deliver appropriate solutions in this area.

### 3.5.9 Citizen engagement

ESB Networks is committed to supporting citizens and communities engage with and participate in the energy transition. We note that the Department are exploring in the consultation whether private wires have a role to play in enabling greater community involvement. We think it is unlikely that private wires could have a significant role to play in this, and that the optimum solution is a single national system that is available and used for the benefit of all citizens and communities.

ESB Networks are leading a range of activities and initiatives in supporting citizen and community participation. We are building an integrated communications and activation framework to drive awareness and inform customers about key areas such as energy efficiency, reducing consumption around peak times, and participation in customer pilots and community energy schemes. ESB Networks are also increasing our face-to-face interactions with customers via support clinics as well as at local and national events.

ESB Networks is delivering a smarter electricity system to actively balance flexible demand and renewable generation at a local level. This will require domestic and business customers to participate in flexible services whereby they will receive digital notifications about when is the best time to consume energy. There is a range of new products and services being introduced to enable and empower our customers to become more flexible including:

- Awareness campaigns and behavioural initiatives to drive understanding about the benefits of flexible services for customers and support for their participation.
- The “Beat the Peak” pilot initiative, introduced in 2022. Which targeted domestic customers to become flexible, and shift their demand away from peak times. The pilot was built on insights we had gathered from behavioural initiatives internationally.
- Developing smart consumer technology standards, so customers can access smart, interoperable technologies enabling them to participate in local flexibility markets.
- Customised local renewable energy notifications.
- Provision of community energy dashboards to provide communities with insights into their community energy system, including live renewable generation insights, demand insights, and community flexibility schemes which reward the community for balancing their local demand and generation.
- Incentivise customers with financial rewards for acting flexibly to shift electricity usage based on the local energy information provided.

We actively support community energy projects through the Enduring Connection Policy (ECP) process via our dedicated community project liaison panel. We have a dedicated community project section on our website which includes a guide to connecting community projects to the distribution system and a frequently asked questions section. We have listened to our customers and are providing dedicated support through single points of contact, working to assist community projects through the connection offer and delivery process. Community renewable projects have a dedicated channel through ECP with less onerous application requirements. Currently approximately one quarter of all ECP applications we are processing are community projects.

Our Small-Scale Generation pilot, along with solutions such as renewable hubs and advance build will also be a key enabler, supporting communities to play their role in the decarbonisation of the electricity sector.

### 3.5.10 Summary of ESB Networks' assessment of the proposed scenarios

In summary, ESB Networks believes that if the proposed principles were to be followed and the governance framework is sufficiently clear and appropriately designed, there are circumstances in which a private, or direct line, connecting new non-network connected renewable generation to a network connected demand customer could be facilitated; as could a private line connecting offshore or onshore wind to onshore electrolysers. ESB Networks would therefore be potentially supportive of the use of private lines in these scenarios, subject to an appropriate governance framework with safeguards being in place.

However, ESB Networks would not be supportive under any circumstances of a policy that allowed for the development of private networks. Such projects would be highly likely to undermine the future efficient development of the network; would likely lead to the inefficient duplication of resources; and would likely result in unfair cross-subsidisation. This would be to the detriment of all customers and would be highly likely to negatively impact on the ability to meet our challenging decarbonisation targets.

## 3.6 Outline framework for permitting private wires

### 3.6.1 Approach to outline framework

Based on the above, ESB Networks has given some consideration to what a legislative/regulatory framework for private wires might look like. This would require further careful assessment in terms of all impacts/consequences, including regulatory impact assessment, but we include it here as a strawman for consideration.

This approach involves setting outer parameters in legislation for the CRU to grant permissions for private lines in the scenarios where the potential benefits could be sufficiently balanced against countervailing risks, subject to appropriate controls and governance. This would be further controlled by enabling CRU, in legislation, to issue such permissions on a case-by-case basis, having due regard to specified criteria and following engagement with the system operators.

In such a regime, it would be essential to set the outer limits in legislation, so that CRU (and the system operators, on consultation) are not overloaded administratively with applications. Additional resources will also be required at the appropriate body to undertake the role of ensuring system operator standards of PW design, construction, commissioning, operation, and maintenance are met.

It is difficult to set absolute rules on issues such as length of private wires or capacity of private wires, as this often depend on the network layout and future network plans in the relevant area. Accordingly, it is important, in addition to setting outer parameters in legislation, to also include the requirement for case-by-case review by CRU within those parameters, in order to ensure that the key criteria outlined in the foregoing sections can be taken into account having regard to the particular circumstances of the application.

We set out below what we see as possible key elements of a statutory and regulatory regime for private lines. It would be critical that there is clarity in any such regime as regards which scenarios fall into each category of limited activity licence, licence exempt activity and/or which activities fall short of requiring a licence or exemption (see sub-section 3.6.4 below). There would also be a requirement for clearly designated roles and responsibilities as between the CRU, the system operators, the system-connected entity, and the private wire owner/operator.

In addition to the implications set out below, more broadly the impacts on related areas such as planning and environmental law, and agencies such as local authorities, the Environmental Protection Agency, An Bord Pleanála, the Health & Safety Authority would also need to be examined as part of any Regulatory Impact Assessment.

### 3.6.2 Direct line permission and limited activity distribution (or transmission) licence (above MV)

- Amend ERA to introduce new, additional circumstances in which CRU may issue permit to construct a direct line.
- The additional permitted scenarios in which a direct line permission might be granted should limited in the ERA as follows:
    - **Permitted Scenario 1:** To permit the connection of an isolated (e.g. non-system connected) generator to a single final customer at MV level or above, provided that the final customer cannot be a domestic customer (DG1 or DG2)

      Note the rationale here is to facilitate direct lines in the limited circumstances and at the level where they may be of benefit such as to balance the potential risks. This reflects the analysis in Section 3.5. Key factors include, for example,

        - the exclusion of domestic customers is intended to ensure continued high degree of consumer protection and easy switching, and to avoid a proliferation of private wires (e.g. due to the potential impact of numerous private lines on the efficient development of the distribution or transmission system);
        - the intention in limiting this to non-system connected generation is that where the generator is connected to the system, the case for a direct line is significantly diminished, with increased potential for duplication of assets; and
        - finally, ESB Networks considers it is vital to limit this to allowing such lines for supply to a single final customer, as allowing supply to multiple customers will raise issues of network asset duplication that cannot be justified when there is a national network.

    AND

    - **Permitted Scenario 2:** To permit the onward connection from one system-connected generator to another generator

      Note, this is intended to facilitate scenarios such as hybrids. The permission in legislation may only be required where it is deemed that there is a distribution activity occurring (for example where one generator supplies another with house load). This triggers the need for a distribution licence or exemption – see further below.

- In deciding whether to grant such a direct line permission the CRU would be obliged amongst other things:

  (i) To have regard to specified criteria (to be set out in the ERA), including the three key criteria, e.g.

  a. Any new line should not adversely impact on the efficient future development of the national distribution or transmission system;

  b. There should be no inefficient duplication of TAO, TSO or DAO network assets;

  c. National network customers should not be required to subsidise users of private wires, and

  (ii) To consult with both the DSO and TSO on the proposal including the route of the proposed private wire.

  (iii) In order to ensure that such lines could be taken over in the future by the DSO/TSO, the CRU should have the ability to prescribe minimum specifications for any direct lines permitted.

- The CRU would need to publish guidance on its approach to direct line permitting and the scenarios that are or are not likely to be permitted.
- In any circumstances where a direct line permission is granted, the holder would also require a new distribution or transmission licence (or exemption), given that these activities are prohibited without a licence. It is suggested this could be a new form of 'limited activity' licence (requiring legislative amendment), that covers only the purpose (and route) for which the permission is granted. A distribution licence exemption would not, in the view of ESB Networks, be appropriate in the above scenarios, as these lines would potentially have significant capacity and it would be important that CRU would have the full toolkit to regulate these lines. As these would qualify as distribution (or transmission) within the meaning of the EU directives, there would also have to be facility for third party access to apply (see further Section 3.6.4 below).
- It would have to be considered whether any associated supply activity would require a licence, or a licence exemption might be introduced (this would require legislative change).
- Clear distinction required in legislation between national distribution and transmission systems and private lines

Changes to the system operator connection agreements and the connection policy would be required to dovetail with any such legislative changes.

### 3.6.3 Further limited categories of licence or distribution licence exemption

Separately, it might be worth exploring whether there is a case for any very limited categories of distribution licence or exemption below MV level. For example, there may possibly be a case for a 'light' distribution licence, or an exemption from the requirement for a distribution (or supply) licence to cover on-premises supply from a generator to a single final customer on that premises. This might cover a scenario where a third party owns and installs generation equipment on a customer site and sells the output to the onsite customer (as compared with an 'auto-producer' scenario where the customer self-generates, in which case the licence requirement may not arise). The limitation to a single customer is intended to preclude industrial park/business park scenarios which would effectively be mini-distribution networks and give rise to the issues outlined in Section 3.5.

Any other limited categories of licence or exemption would require further careful consideration. ESB Networks considers that 'blanket' exemptions (e.g. all private wires below a particular voltage) are not appropriate, as such a broad exemption could lead to a proliferation of private wires to the detriment of the development of the national system. Rather, any exemptions should be limited to specific use cases and the case for any further exemption should be assessed against the criteria set out in Section 3.5.

If licence exemptions are introduced, any licence exemption should be subject to specified conditions (similar to the position for certain categories of generation). If any category of exemption were to be considered for private lines outside of a customer's premises, then as above, it would be essential to ensure there is a process for review by the CRU and system operators of the proposed location of any such private line.

Further, appropriate changes to the system operators' connection agreements and any necessary studies, and Connection Policy may be required to dovetail with the introduction of any such exemption.

### 3.6.4 Third Party Access

In any of the circumstances outlined above, if a licence or exemption is required, then this means the relevant activity is 'distribution' or 'transmission' and as such must be subject to a third-party access regime. As noted above, the EU Citiworks ruling clarified that the requirement to provide for third party access applied in respect of all distribution and transmission systems, irrespective of size, and that it is not open to Member States to exempt certain types of distribution or transmission systems from the requirement. A regulatory framework would be required for such private operators to provide third party

access. We refer, by way of example, to the UK Government consultation and decision on how third-party access rules should be applied for smaller, licence-exempt distribution systems[9].

### 3.6.5 Activities which do not require distribution (or transmission licence) or exemption

The Department has alluded in its consultation and questions to the potential for types of private wire to fall outside of the regulatory regime and has queried whether such private wires should be regulated. ESB Networks considers that there is a need for Departmental or CRU guidance on what constitutes distribution/transmission (based on the statutory definitions) and therefore is prohibited without a licence (or exemption if applicable). In the absence of the above guidance there would be a lack of legal certainty, and scope for different interpretations regarding the obligations that apply to private wire owners/operators. Such guidance would assist industry in understanding the applicable rules/regime for any type of proposed wire. We note that in the UK, DECC has provided such guidance in the context of which arrangements are or are not likely to constitute distribution, and therefore attract rules such as third-party access.

Private wires which do not meet the definitions of distribution or transmission, should nonetheless be subject to minimum levels of regulation and this may require legislative change (e.g. to expand the statutory remit of CRU). For example, for any private wires that are not limited to a customer's own premises, there should be a requirement for notification of the existence of such wires to CRU and they should be reflected in a centralised register (see Section 3.4.3 above).

Further, there should be a requirement to consult either with the CRU (in consultation with the system operators), or directly with the system operators on the location/route of any such private wires in advance to ensure that they will not adversely affect the future efficient development of the distribution or transmission systems.

### 3.6.6 Statutory land access rights

There is currently a statutory regime, pursuant to Sections 48 and 49 of the ERA for private generators to acquire statutory rights to place electric lines in public roads and across third party lands subject to a CRU consenting process. It would be sensible to review the scope and application of this regime in the context of any private wire proposals. If the TAO/DAO are to have the option to take over private lines which are initially developed by private operators, then it would be essential that the statutory

[9] See for example https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/48289/4511-guidance-third-party-access-elec-gas.pdf

wayleave process is used by such private operators to ensure enduring rights to access and, if necessary, to maintain, repair or alter the line into the future. Equally, any such review should be undertaken with a view to ensuring that there are appropriate controls on private operators and mindful of the risk of knock-on impacts of potential abuses of this process for the national system operators.

## 3.7 Network developments that may reduce the demand for private wires

As noted earlier, ESB Networks recognises that there may be circumstances in which customers may wish to develop projects using private wires. We understand that in some cases this may be related to perceptions around the time it will take to connect to the network, the capacity of the network in certain locations or the associated cost of connection. We note that there are a range of drivers of connection time, and that in our experience land access and the planning system are among the key determinants of connection times.

ESB Networks is undertaking a significant programme of work to accelerate connections and increase network capacity in order to meet the CAP23 objectives of increased renewables connections and increased demand from electrification.

However, to the extent that perceptions may exist that a private wire can result in faster connection, and that such perceptions may be a driver of demand for private wires, we consider it is helpful to set out a number of planned network developments that may materially reduce the demand for private wires. These developments can broadly be split between:

- investment to expand network capacity; and
- innovation to allow us to optimise the use of the existing network.

### 3.7.1 Expanding network capacity

In our *Networks for Net Zero* strategy we commit to develop Net Zero Ready Distribution Network by 2040 to enable Ireland's achievement of net zero no later than 2050. We will deliver major investment in network capacity/infrastructure across the distribution network. This will include the development of new distribution and transmission lines and cables, electricity substations and transformers, as well as increasing the network capacity of the existing infrastructure.

ESB Networks will facilitate the connection in the region of 22 GW of renewable generation by 2030. As part of our 'Build Once for 2040' concept, and working closely with EirGrid, Industry and CRU, we have developed a proposal for creating renewable hubs. Renewable hubs will be 110/38 kV and

110/MV substations where clusters of renewable generation will be connected. This should allow more microgeneration, mini-generation, and small-scale generation to be connected to the distribution system. We are working on standardised and modularised solutions that should deliver the infrastructure faster and more efficiently.

We are also exploring advance build network reinforcements so that increased wind, solar, and batteries (including community projects and smaller scale generation customers) can connect safely to the electricity network. To deliver on this target, we will significantly increase our customer engagement to provide guidance on different pathways for connecting renewables. We will also implement smart technologies to enable customers to take part in the energy transition through self-generation and storage, demand management, energy efficiency opportunities, and selling electricity back to the network.

### 3.7.2 Innovating to optimise the network

We are developing a number of innovative solutions in relation to active network management that will help maximise the capacity of the network. This includes, for example:

- **Connections (1):** we are developing flexible connections policies that will allow non-firm connections to the network, allowing capacity to connect and use the network at certain times, when it previously would have not been able to do so.
- **Connections (2):** we are working to develop hybrid connections that meet the needs of our customers. A hybrid site is any project that has multiple generating units or power generating modules which utilise multiple primary energy sources or technology types in generating/storing electricity and is electrically connected behind a single defined connection point to a licensed system operator. Hybrids present an opportunity for both system operators and industry to maximise the use of existing network assets and increase capacity factors, with the potential to improve security of supply. ESB Networks is supportive of developing hybrid connections.
- **Demand side flexibility:** we are seeking to put in place substantial volumes of contracts for demand side flexibility that will allow, in some locations, the connection of significant additional volumes of renewable generation.
- **Smart network investments:** We are investing in a range of smart technologies that will help us operate a more flexible network and optimise use of capacity:
    - Smart control room technologies like forecasting and optimisation, going live in the control room in 2022 and expanded and enhanced from 2023–2030.
    - Smart technology pilots from 2023, including of smart charging, smart inverters, DSO-aggregator customer communications, and interoperability.

  - Smartgrid LTE telecommunications network enabling Ireland to introduce world leading local balancing and flexibility optimisation via a robust LTE smartgrid communications network connecting the customer to the network to the control room from 2023.
  - Local network sensing and monitoring enabling us to locally optimise demand and generation down to the most local, low voltage networks from 2023.
- **Adaptation of system operator standards and policies:** We are working on an integrated planning approach that would facilitate the needs of demand customers, renewable generation requirements and flexibility developers.

ESB Networks would be happy to engage with the Department and other stakeholders further on any of the above initiatives, and the contribution they are likely to make to delivering on national CAP23 objectives.

# 4. Conclusion

ESB Networks supports the development of a policy around the use of private wires, and considers that there may be circumstances in which private lines could play a useful role. We have given the issue of private wires careful consideration and have attempted in this response to engage constructively by setting out at a high level the type of framework that could support the development and implementation of a private wires policy.

We appreciate the opportunity presented by this consultation to provide views to the Department. Considerable further consideration and work will be required by the Department before arriving at any firm proposals. We are eager to continue to work with the Department on this issue and suggest that the views of the system operators and the CRU, alongside other stakeholders, will help considerably to accelerate the development of a policy.