

Electricity Network Tariff Structure Review

January 2022

Commission for the Regulation of Utilities (CRU)
Irish Solar Energy Association Response

Irish Solar Energy Association (ISEA)
Unit 616 Edenderry Business Campus
Edenderry Co. Offaly

www.irishsolarenergy.org

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1.0 Executive Summary:

The Irish Solar Energy Association (ISEA) was established in 2013 to advance a policy and regulatory landscape promoting solar as a leading renewable energy technology that will decarbonise Ireland's electricity system and contribute to a successful and strong clean economy.

In our view, network tariffs should be structured in such a way to facilitate the installation of more renewables onto the grid at both utility and customer scales. From our perspective, this approach entails network tariffs: incentivising more efficient use of the network; encouraging behaviours that aid the system in times of potential stress; not acting as a barrier for self-consumption and export, especially for smaller consumers

This will enable the solar industry and other renewable technologies to participate more actively in the green transition.

Issues For Consultation

In our view, the CRU should engage with stakeholders via a dedicated Electricity Network Tariff Structure Review stakeholder group. Within this frame, the group should have equitable representation from solar companies as well as representation from large demand users such as data centres and other renewable technologies. Aside from this, the CRU should release further consultations on an ongoing basis to ensure that proposed new tariffs are viable for different industry stakeholders.

We envisage electricity networks in Ireland changing & developing in the following ways:

- I. Increased consumption of electricity in Ireland due to demand increases and electrification.
- II. Connection of larger numbers of utility-scale solar & other renewable assets to the electricity grid.
- III. Increased use of distributed electricity generation from renewables to manage demand-side issues.
- IV. Customer Participation in Networks: Residential & commercial consumers exporting their excess renewable generation to the grid.
- V. Diversification of Renewable Supply: In other words, different renewable technologies will generate at different times during the day and blended together at other times to balance the system

ISEA has reason to believe that consumers will become progressively more responsible for larger and larger amounts of their own self-consumption and will increasingly seek to export. As distributed generation via behind the meter solar grows potentially encouraged by the recently announced policy incentives, more players will join the system on a disaggregated basis, suggesting supply and

demand will be settled in a more decentralised manner. Network tariffs will need to be designed so as to account for this scenario.

It is important that ESB Networks *National Networks, Local Connections* programme is delivered quickly, but we cannot await its results to consider the design of appropriate network tariffs.

In our view, the existing electricity network is not currently set up to facilitate the necessary changes to Ireland's electricity system. To meet Government targets, the volume of renewable electricity needs to triple in volume in the coming years and network infrastructure must be expanded to achieve this. However, we also need to make better use of our network so as to ensure that we are not building unnecessary infrastructure.

The price signals within the current system of electricity network tariffs do not sufficiently affect behaviour or influence use of the electricity network, suggesting scope for their use in a more effective manner. In parallel, we would note that there is spare capacity on the system but n-1 planning standards make it too expensive or cumbersome to access. We would suggest that the planning standards must be overhauled to build capacity onto the network.

Several concepts cited in the Advisors Paper are potentially useful for the Irish market. For example, Italy schedules regular reviews of its tariff structure. This measure would be a welcome change to the Irish market. To implement this, we suggest an interim set of charges is introduced and that subsequent reviews are aligned with Price Review periods. Portugal is using critical peak pricing to create an interim version of time-of-use tariffs in lieu of smart metering; we would suggest that the CRU considers whether aligning network charging with times when the system is under stress to generate an appropriate incentive.

Consideration must be given to the generation use of system charges – which is not currently in the scope of the review. ISEA recognises that there is a degree of complexity to this aspect of the review due to generation use of system charges being an all-island matter under the SEM Committee. That said, to consider largely the demand side of network charging without a corresponding initiative on the supply (i.e. generation) side is to operate on a partial basis and likely to lead to an incomplete incentive. In addition, it increases the potential risk of misalignments within the charging regime.

Next Steps

ISEA submits our response to the regulator. We would welcome the opportunity to discuss the analysis underpinning our response and contents of same.

2.0 Introduction:

The Irish Solar Energy Association (ISEA) was established in 2013 to advance a policy and regulatory landscape promoting solar as a leading renewable energy technology that will decarbonise Ireland's electricity system and contribute to a successful and strong clean economy. As the leading voice for the Irish solar industry, ISEA works closely with stakeholders to advance the solar agenda on behalf of our members. ISEA is committed to delivering 5 gigawatts (GW) of utility-scale solar and 1GW of customer-scale solar in the next ten years to make a significant contribution towards 2030 energy targets and achieve a diverse and clean electricity network. As the trade association for the solar industry in Ireland, ISEA is responding on behalf of our membership of 170 parties currently active in the Irish solar market.

In our view, network tariffs should be structured in such a way to facilitate the installation of more renewables onto the grid at both utility and customer scales. From our perspective, this approach entails network tariffs: incentivising more efficient use of the network; encouraging behaviours that aid the system in times of potential stress; not acting as a barrier for self-consumption and export, especially for smaller consumers.

3.0 Issues For Consultation:

3.1 Stakeholder Engagement:

1. How should the CRU engage with stakeholders over the course of the Electricity Network Tariff Review?

ISEA appreciates the CRU's proposed openness in the context of the Electricity Network Tariff Structure Review given the growing complexity of the electricity system in Ireland. In our view, the CRU should engage with stakeholders via a dedicated Electricity Network Tariff Structure Review stakeholder group. Within this frame, the group should have equitable representation from solar companies as well as representation from large demand users such as data centres and other renewable technologies.

Aside from this, the CRU should release further consultations on an ongoing basis as the review continues to ensure that new tariffs are viable for different stakeholders.

2. If a dedicated Electricity Network Tariff Review stakeholder group is established, would you be interested in participating? If such a group was over-subscribed, how should the CRU limit the number of members?:

ISEA and its members would be very interested in participating in an Electricity Network Tariff Structure stakeholder group in the event one was to be established. It is crucial for the green transition that solar is given due consideration as a renewable technology. When compared to other renewable technologies solar has a distinct and more predictable output profile – but also utilises the energy system differently when compared to thermal and wind assets. Solar, therefore, offers a unique opportunity to reduce demand-side issues on the system.

We accept that there may be a limit on the number of participants in the stakeholder group – ISEA, therefore, believes that engaging directly with trade associations may be a more efficient use of the CRU's time and resources. Within the Stakeholder Group itself, a potential solution to this may be to

have sub-committees in order to ensure the dialogue between stakeholders and the regulator is focused and productive. For example, sub-committees of such a group could include:

- Equitable Network Access Sub-Committee
- Efficient Use of Network Sub-Committee
- Supplier Sub-Committee

3.2 Objectives:

3. Do you agree with the objectives of the Electricity Network Tariff Structure Review? Please state your reasoning.

The objectives of the Electricity Network Tariff Structure Review are cited as follows:

- Fit for Purpose Network Tariffs: *“To deliver network tariff structures that are in the best interest of consumers and are fit-for-purpose for the modern evolving electricity networks.”*
- Low Carbon Future: *“To deliver network tariff structures that help facilitate a low carbon future that is secure, competitive and cost-effective.”*

In principle, ISEA supports these objectives as they align with our view of what the structure of the Irish energy market will be in the future as more renewables connect to the grid. However, it is concerning to us that the objectives do not have key performance indicators or other pre-set standards to determine their success or failure. In this respect, the proposed objectives lack definition. We hope the CRU 2022 Workplan will provide further clarity on this issue once it is released and that this will include completion timelines where relevant.

The CRU’s aim to achieve a low carbon pathway for Ireland while also not threatening ‘security of supply’ is a welcome measure in theory – but in the past this has manifested in the form of hesitancy to connect higher levels of renewables and decommission thermal assets.

4. Should the CRU include any other objectives? If so, please explain your reasoning.

The objectives of the review that are cited by the CRU are a welcome development in terms of decarbonisation and better consumer outcomes. However, in line with the Climate Action Plan and other government initiatives such as RESS auctions, ISEA believes that the ‘Low Carbon Future’ objective should emphasise the delivery of decarbonisation.

3.3 Proposed Principles:

5. Do you agree with the proposed principles of the Electricity Network Tariff Structure Review? Are they clearly defined?

ISEA is broadly supportive of the proposed principles of the Electricity Network Tariff Structure Review, though we would note some potential areas where clarification would be helpful.

We agree with the ‘non-discrimination’ principle: *“Similar network usage should not face any undue differences in network charges.”* However, ISEA is concerned as it would appear that different technologies are already discriminated against based on their capacity factor i.e. as the tariffs are heavily weighted towards capacity (per MW) rather than usage (per MWh).

A shift towards more MWh-based charging would incentivise all users to make more efficient use of the network, buttressing the “Efficiency” principle.

In terms of the ‘Adaptability’ principle, we believe network tariffs should be appropriately flexible to allow for changes in the system such as the connection of a larger number of renewables or changes in use patterns by consumers, especially where consumers export or store electricity.

ISEA approves of Cost Reflectivity, but we simultaneously question who should bear the cost of this and what the mechanics of this should be? We question ‘Cost Recovery’ as a principle – this provides network operators with significant influence on prices for consumers and does not incentivise efficiency in use of the system.

6. In your view, should any further principles be added, or any existing proposed principles be removed? Please explain your reasoning:

ISEA does not believe that any further principles should be added nor that any existing proposed principles be removed. That said, the ‘Cost Recovery’ principle should be qualified in order to ensure that its only function is to recoup costs efficiently.

3.4 Scope of Review:

7. Do you agree with the areas that are identified as in-scope and out-of-scope for the review? Please state your reasoning:

The areas that are defined as in and out of scope of the review are not a major issue for ISEA. Our primary concern is that it is amended in order to include Generation Tariffs – please see our response to Question 8 for more detail.

8. Acknowledging that resources are finite, are there any other areas that should be included in, or excluded from, the in-scope and out-of-scope areas for the review? If so, please explain your reasoning.

In our view, Generation Tariffs should be in scope since demand has been cited as being ‘in-scope’. As generation aims to satisfy demand it would make sense to consider both as relevant areas of the review.

Consideration must be given to the generation use of system charges – which is not currently in the scope of the review. ISEA recognises that this request creates a degree of complexity to the review due to generation use of system charges being an all-island matter under the SEM Committee. That said, to consider largely the demand side of network charging without a corresponding initiative on the supply (i.e. generation) side is to operate on a partial basis and likely to lead to an incomplete incentive. In addition, it increases the potential risk of misalignments within the charging regime.

3.5 Future Developments of the Electricity Networks and their implications for tariff structures:

9. How do you see the use of the electricity networks in Ireland changing and developing in the future?

We envisage electricity networks in Ireland changing & developing in the following ways:

I. Increased consumption of electricity in Ireland due to demand increases and electrification. We believe the prevalence of private wire networks and corporate power purchase agreements (CPPAs) will increase.

II. Connection of larger numbers of utility-scale solar & other renewable assets to the electricity grid. The network structure will need to change in order to manage an increased dependence on asynchronous generation as there is more active participation by renewable technologies in the energy market at the sub-50-kilowatt level and utility level.

III. Increased use of distributed electricity generation from renewables to manage demand-side issues. This approach will involve increasing the capacity of customers to respond to price signals. ESB's National Networks, Local Connections programme may help to serve as a conduit for this.

IV. Customer Participation in Networks. Residential & commercial consumers increasing both self-consumption and seeking to export their excess renewable generation to the grid – remuneration or subtraction from consumer electricity bill as a result i.e., Microgeneration Support Scheme, Deemed Export Quantity.

V. Diversification of Renewable Supply: In other words, different renewable technologies will generate at different times during the day and be blended in a more diverse renewables portfolio at other times of the day. This situation will change how the Irish electricity system responds to demand and should be considered within the network tariff structure.

10. In your view, are there any drivers of change in the future use of the electricity networks that the CRU hasn't covered in this paper? If so, please identify them and explain your answer:

The structure of the wholesale market could change in line with the intended change to 80% renewable electricity, as proposed by EirGrid in *Shaping Our Electricity Future*.

Given the potential contextual changes in the coming years, it is essential that tariffs are reviewed at least every five years in order to incorporate changes to the factors underpinning network tariffs on an ongoing basis.

11. How do you think the roles of different parties/stakeholders across the networks will change in the coming years?

ISEA can see the roles of the following stakeholders changing:

I. Consumers: As behind the meter generation becomes more common, consumers will take a more active role in providing for their own supply needs as well as contributing to the regional supply/national supply needs.

II. Thermal Asset Owners: The role of thermal asset owners will change considerably as more thermal assets generate less power and some are decommissioned. They may be relied on less for energy and more for services to the system. This is necessary to mitigate against the effects of climate change, but there is an opportunity for thermal asset owners to instead install renewable assets on their land portfolios and participate in the green transition – thereby reducing the effects of climate change and minimising job losses through retraining schemes as has been the case with Bord Na Móna.

III. Renewable Asset Owners: Renewable asset owners will become the main delivery partners for energy supply as the green transition progresses – this will require cooperation between stakeholders to ensure climate targets are achieved.

IV. Network Operators: Network operators will continue to be responsible for overseeing the day-to-day operations of the network. This will likely be very challenging during the transition phase to renewables – we encourage the network operators to engage frequently with representative bodies and asset owners during this process. With more distributed generation, the network is likely to become decentralised requiring possible changes to how assets are dispatched. As a result of this, the barrier between the operation of the distribution and transmission systems may become more porous, meaning DSO-TSO interfaces are key and may be managed by technology.

12. How could changes to the electricity network tariff structures facilitate and/or encourage a whole system approach to network investment, network management and system operation? Please explain your answer:

ISEA takes issue with the CRU claiming it is taking a ‘Whole of System’ approach to the Network Tariff Structure Review when generation is out of scope for the review. To take a whole of system approach, a cross-border review of generation & demand network tariffs is necessary.

13. How do you foresee the increasing uptake of behind-the-meter generation for the purpose of self-consumption changing the load profile of electricity consumers, particularly domestic electricity consumers, in the future?

Several considerations influence the load profile in the context of behind the meter solar. In the winter, solar output is somewhat diminished due to the reduced number of daylight hours. This will mean that grid demand will continue to be lower in the summer months, but that winter demand is likely to increase.

Since the current tariff structure was instituted in 2000, solar panel technology has become progressively more efficient as more research & development has been completed by manufacturers. ISEA has reason to believe that this will continue as technology is refined, meaning that consumers will become progressively more responsible for larger and larger amounts of their own self-consumption. We are of the view that self-consumers should not be charged via tariffs for their self-generation – even as the relevant technology improves. To do so would in effect penalise ordinary consumers who are doing their part for the green transition.

As the volume of distributed generation via behind the meter increases, supply and demand may need to be settled on a more decentralised basis. Policy will have a significant impact on the uptake of behind the meter solar. This uptake will increase as self-consumers are offered more incentives under initiatives such as the Government Microgeneration such as the Microgeneration Support Scheme.

14. What are your views on the impacts of future changes identified in this section and their implications for electricity network tariffs?

In ISEA's view, the CRU needs to recognise that increased volumes of network electricity infrastructure can and need to be built to support the green transition. However, it is important to note that different user groups ranging from domestic consumers to commercial users will attempt to use this infrastructure in different ways to suit their own interests. Therefore, use of system charges need to be structured in such a way that encourages efficient use of the network by system users via price signals.

15. Do you think that there are implications or issues that need to be addressed for electricity network tariffs that we have not mentioned in this paper? If so, please explain what these implications are and why they need to be addressed:

Fuel poverty is an aspect of the electricity network tariffs that has not been mentioned in the Network Tariff Structure Review. By increasing the amount of renewables on the electricity system in Ireland, the costs of electricity to consumers are reduced due to a lack of dependence on external commodity markets and other cost reductions.

In effect, the distributional effects of renewable energy self-consumption for disadvantaged communities are considerable – this is particularly important for reducing fuel poverty. Network tariffs, therefore, need to be structured in such a way that facilitates self-consumption and export.

3.6 The Current Network Tariffs:

16. How do you think changes to the electricity network tariff structures could help stakeholders avail of opportunities opening up due to future changes to the electricity networks?

In our view, flexibility needs to be included in the new network tariffs to encourage peer-to-peer trading and other aspects of distributed generation i.e., they should not disincentivise more active use of the network by consumers.

17. In your view, how do the current network tariff structures impact different types of network users? Do any network users have particular challenges or issues with the current network tariff structures? Please explain your answer:

No response.

18. In your view, could the existing electricity network hinder the changes that are necessary for the electricity system in the coming years. Please explain your answer:

Yes. In ISEA's view, the existing electricity network is not set up to facilitate the necessary changes for Ireland's electricity system. As a case in point:

I. Renewable Electricity: The volume of renewable electricity needs to triple in volume in the coming years. The network infrastructure must be expanded to achieve this.

II. Planning Standards: Planning standards must be overhauled to build capacity onto the network. ISEA notes that there is spare capacity on the system but n-1 planning standards make it too expensive or cumbersome to access. We would suggest that the planning standards must be overhauled to allow more effective use of infrastructure and avoid overbuilding the system.

This is essential for ensuring system costs are efficient.

19. In your view, do the price signals within the current electricity network tariffs sufficiently affect behaviour and influence use of the electricity networks? Please explain your answer:

In ISEA's view, the price signals within the current system of electricity network tariffs do not sufficiently affect behaviour or influence use of the electricity network, as they are largely weighted towards the capacity of the connection rather than its usage. Use of system charges do not affect where customers locate on the network, when they use and how they use it. In effect, it functions only as a line item on a customer's bill to help recover network company costs.

3.7 Tariff Considerations:

20. What are your views on the network tariff components and considerations outlined in this paper?

ISEA does not object in principle to the tariff components outlined in the Network Tariff Structure Review, but we feel that a more detailed review process is needed for each of the tariff structures.

21. Are there additional tariff components, structures or options not described above that the CRU should consider? If so, please identify them and provide rationale:

No response.

3.8 International Review:

22. Are there lessons or insights highlighted in our Advisors Paper (CRU/21/123A) that are particularly relevant to this Electricity Network Tariff Structure Review? Please explain your answer:

ISEA views several concepts cited in the Advisors Paper as potentially useful for the Irish market in the context of revising tariff structures to encourage uptake of renewables.

I. Australia:

ISEA is interested in the approach taken in the Australian market, wherein tariffs are based on long-run marginal costs, but the regulator is required to recover revenues that minimise the distortions to market signals while networks are allowed to determine their own cost-reflective tariffs. This is a novel approach, but ISEA would have concerns about the distributional impacts of this in terms of fuel poverty in the event such a measure was implemented in Ireland.

As Ireland begins to introduce more renewables into the electricity system, the regulator needs to control price signals to influence consumer behaviour, but also to offer networks flexibility in how this is executed.

II. Germany:

Germany faces a demand imbalance: *“most wind capacity is in Northern Germany, whereas most demand comes from cities and industrial areas in the South and West of the country.”* Given that different renewable technologies have different spatial relationships with demand locations, ISEA would suggest value in considering locational signals via network charging.

III. Great Britain:

ISEA notes several valuable observations within the Advisor Papers assessment of the GB market, while simultaneously acknowledging the GB market is far more complicated due to multiple distribution systems in operation. That said, ISEA notes efforts made by GB regulator Ofgem to promote decarbonisation at the least possible cost to consumers. Equally, providing consumers with well-defined network access rights to offer a greater degree of choice in terms of how they connect and use the network facilitates greater uptake of renewables while not compromising on consumer choice.

It should be noted that alignment between network storage and flexibility is an important consideration – particularly considering the availability of renewable resources at different intervals. In the case of the Irish market, we would encourage the CRU to consider if network tariffs should have more of a forward-looking element or an incentive in the form of price signals.

IV. Italy:

Italy schedules regular reviews of its tariff structure, with tariffs being set for eight-year intervals. Regular reviews of tariffs would be a welcome change to the Irish market (albeit at more regular intervals than every eight years), as this would facilitate the CRU changing tariff structures to reset price signals in accordance with the needs of the Climate Action Plan targets. As mentioned previously, this could be aligned with the CRU’s Price Review process timings.

V. Portugal:

Portugal’s decision to introduce time-of-use tariffs to *“differentiate between normal peak hours and super peak hours and encouraged industrial consumers to use electricity more efficiently”* after conducting pilots where customers were notified of higher tariffs a few days prior is an interesting measure.

In the event similar measures were introduced in Ireland after pilot studies, this would likely help manage demand as more renewables are connected to the Irish electricity system. A key similarity between the Irish and Portuguese electricity systems is that both markets are behind on their respective rollouts of smart meters – which limits the potential deployment of such measures.

ERSE (the Portuguese regulator) has used critical peak pricing to create an interim version of time-of-use tariffs. We would suggest that the CRU consider a time-based aspect within the network tariff structures e.g., peak, times of stress.

23. Are you aware of any other lessons or insights from these (or other) jurisdictions that may be relevant to this review? Please explain your answer:

No response.

3.9 Interactions with other policies:

24. In what ways could change to the electricity network tariff structures interact with other regulatory policies and arrangements?

I. Renewable Energy Support Scheme (RESS): Tariffs should be more predictable and efficient. In other words, they should be linked to generation as opposed to capacity (MWh vs. MW) to ensure that developers can submit more cost-effective bids at subsequent rounds of RESS auctions. This will help to reduce the cost of adding renewable electricity to the electricity system for the taxpayer and improve societal buy-in of renewables.

II. Clean Export Guarantee: To facilitate self-consumers, tariffs should not be charged on electricity exported to the grid.

III. ESB Networks National Networks Local Connections: As active system management & distributed generation are incorporated as part of the Irish electricity system, changes to the electricity network tariff structures could be used to incentivise demand being met by local generators. The use of system methodology should be used to facilitate this – network tariff methodology should, in turn, be further refined to facilitate demand once the National Networks, Local Connections project is completed.

4.0 Conclusion:

ISEA welcomes the CRU's efforts to review network tariff structures. We look forward to receiving their response to our submission. In closing, we would like to make the following closing remarks:

I. The supply of renewable energy will continue to diversify. In other words, different renewable technologies will generate at different times during the day. This has important implications for how the Irish electricity system responds to demand and how tariffs should be structured to facilitate this.

II. The roles of different stakeholders in the energy industry will change as the green transition progresses. Tariffs need to be structured in such a way that encourages consumers to change their behaviour in line with decarbonisation targets. This can be achieved via price signals, microgeneration incentives, and time-of-use tariffs.

III. We encourage the CRU to continue to observe case studies of other markets as a means through which further innovations can be made in tariff structures in the Irish market.

IV. Network tariffs should send signals for efficient use of the network, so ISEA would like the CRU to consider weighting more of the charges for certain categories of users towards MWh basis rather than MW basis.

V. In our view, Generation Tariffs should be in scope since demand has been cited as being 'in-scope'. As generation aims to satisfy demand it would make sense to consider both as relevant areas of the review. Consideration must be given to the generation use of system charges – which is not currently in the scope of the review. To consider largely the demand side of network charging without a corresponding initiative on the supply (i.e. generation) side is to operate on a partial basis and likely to lead to an incomplete incentive