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Australian Energy Market Commission

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Draft Rule Determination – Access, Pricing and Incentive Arrangements for Distributed Energy Resources (ERC0311 and RRC0039)

Essential Energy welcomes the opportunity to provide a submission to the Australian Energy Market Commission (AEMC) on its *Draft Rule Determination – Access, Pricing and Incentive Arrangements for Distributed Energy Resources* (the Draft Determination). Energy Networks Australia has also made a submission to the Draft Determination, which Essential Energy supports.

The electricity supply chain is currently undergoing a fundamental transformation. Left unaddressed, Distributed Energy Resources (DER) will impact security, reliability, equity and affordability outcomes for consumers across Australia's many networks. These issues are particularly relevant for Essential Energy, because we are at the forefront of the energy transition having:

- > over 800 megawatts (MW) of large-scale renewable generation connected to our network and over 2,300MW in the pipeline between the connection enquiry and construction; and
- > 1,102 MW of small-scale renewable generation – 24% of Essential Energy's customers (25% of residential and 11% of small business), have small-scale renewable energy generation systems, mainly solar, connected to our network.

Putting these numbers into perspective, Essential Energy's all time maximum demand is around 2,600MW, with average demand approximately 1,400MW.

The scale and pace of this transition is such that, the earlier 'fit for purpose' regulatory reforms can be integrated across the National Electricity Market (NEM), the more the benefits of DER investments can be realised across all energy system users. Essential Energy welcomes the AEMC's Draft Determination as a critical step in this regulatory reform process.

In particular, Essential Energy supports the AEMC's Draft Determination to recognise export services as part of the 'distribution service' provided by distribution network services providers (DNSPs) to customers, and to remove from the National Electricity Rules ('the rules') clause 6.1.4, which explicitly prohibits the charging of export tariffs. These changes are critically important to facilitate investment in the network to support DER exports, but also to ensure that this expenditure is cost-effective, and that customers are incentivised to operate their DER resources in a manner which maximises the economic benefit for all stakeholders. Essential Energy agrees with the analysis undertaken by the AEMC demonstrating that any potential tariff reform is unlikely to significantly reduce the overall benefits from the DER investment.

Essential Energy also supports the development of an incentive scheme in relation to export services, and the AEMC's decision to defer the responsibility for the incentive scheme design to the Australian Energy Regulator (AER), to be progressively developed over time. This approach is preferable to the incentive scheme being explicitly prescribed within the rules, particularly in light of any incentive

scheme needing to overcome a number of practical challenges – including network visibility (which currently varies significantly across networks).

Issues around network visibility are also such that the proposed new reporting requirements with respect to DER will prove challenging. However, Essential Energy appreciates that a greater focus on the role of distribution networks, in managing the two-way flow of energy to the benefit of all consumers, is supported by consumers. We suggest that there is value in the AEMC considering whether the AER should be responsible for the identification of reporting obligations (rather than the prescriptive approach in the Draft Determination) to ensure that the specific metrics reflect customer preferences (since consumers will ultimately bear the costs of the reporting obligations) and DNSP capabilities.

We also note that the Draft Determination requires the AER to review, amend (if necessary) and publish new documents to reflect the proposed rules. It is imperative that these reviews occur within the nominated timeframes because they will inform our assessment of DER expenditure in our upcoming regulatory proposal, which is due soon after the AER's deadline.

Finally, Essential Energy is currently undertaking a dedicated engagement program with small customers and stakeholders to co-design acceptable tariffs to take to trial. Some of these trials include “sun soaker” and “export charging” tariffs, used to manage growing solar energy exports across the network. Whilst significant work is still to be undertaken as part of these tariff trials, the engagement program was highly rated by the customers who participated and resulted in trials that were wholly supported by Essential Energy's independent Tariff Advisory Panel in the first instance. We have attached a summary of our engagement approach undertaken as an addendum to this submission in hope that it provides insights into the types of preparatory activities Essential Energy would expect to undertake as part of broader tariff reforms arising from this rule change.

The issues canvassed above are explained in greater detail below. If you have any questions in relation to this submission, please contact me directly via phone 0406 534 682, or Mr Anders Sangkuhl, Regulatory Strategy Manager at anders.sangkuhl@essentialenergy.com.au or via phone 0409 968 326.

Yours sincerely



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Essential Energy Submission to AEMC Draft Determination – Access, Pricing and Incentive Arrangements for Distributed Energy Resources

Recognising exports as a distribution service enables DNSPs to incur efficient expenditure reflecting customer needs and service expectations

Essential Energy supports the AEMC's draft determination to explicitly recognise export services as part of the distribution service provided by DNSPs to customers.

The rapidly growing prevalence of rooftop solar, batteries and the emergence of new participants such as aggregators providing demand response capabilities is transforming the role of the distribution network of the future to one based on bi-directional flows and real time communications. These changes pose significant challenges to the existing regulatory framework. Further, because each DNSP across Australia is at a different state of DER penetration and capability, it is imperative that the rules are flexible to accommodate change and continue to evolve with emerging technologies for the provision of export services.

The existing regulatory framework is not equipped to manage these challenges because it does not recognise or provide clear guidance for many of the services DNSPs now provide and how these services should be incorporated into planning functions. The existing regulatory framework therefore creates ambiguity as to customers' rights to export services.

In our opinion, explicitly recognising export services as part of the distribution service provided by DNSPs to customers is the appropriate way to address these challenges.

This is because the definition of a distribution service forms the basis of the services that customers have a right to access from DNSPs. In particular, expanding the definition of a distribution service to incorporate exports:

- > flows through to subsequent requirements to meet or manage customer demand and deliver service performance consistent with customers' willingness to pay (which would apply directly to export services under the proposed changes); and
- > leads to export services being treated through the AER's determined standard or alternative control service classification process of ex ante or ex post regulatory allowances, guided by the identified need for expenditure to support the provision of export services.

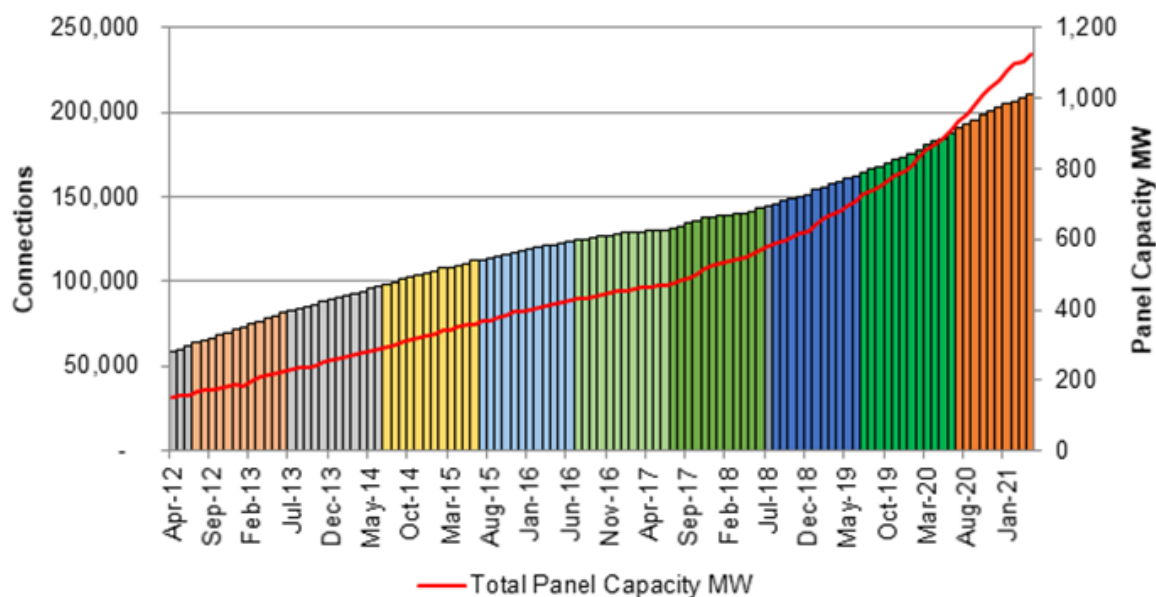
Taken together, these enhancements in definitional certainty regarding the recognition of export services would allow Essential Energy and other DNSPs to incur efficient expenditure on the network to provide export services, as determined by customers' identified needs and service expectations.

Without an appropriate framework for bi-directional pricing arrangements being established customer export limitations may be required

Household DER creates a number of positive opportunities for customers, including the ability to sell surplus energy and participate in a "two-sided market" of the future. Increased DER penetration also strategically aligns with wider environmental policy objectives such as emissions reductions activities and increased network resilience. As such, it is a high priority for Essential Energy to enable the infrastructure that facilitates DER bi-directional flows.

Nonetheless, Essential Energy's distribution network was fundamentally designed for consumption services and has a finite DER hosting capacity limits. Over the last decade Essential Energy has experienced near four-fold growth in small-scale renewable energy generation systems, which now comprise 24% of Essential Energy's customers, approximately 1,102 MW of small-scale renewable

generation. Putting these numbers into perspective, Essential Energy's average daily demand is approximately 1,400 MW.



This increasing levels of DER connected to the network is giving rise to specific areas reaching their thermal limits, that now require augmentation if more hosting capacity is to be established.

For instance, one particular village on Essential Energy's network in the mid-north coast of NSW has seen a significant uptake of rooftop solar systems in the past few years, which is now reaching the networks' maximum thermal limitations. In late 2020, the village experienced two unplanned outages due to solar systems within the village operating above approved export limits, with the wider local network having a limited ability to absorb these solar exports.

To ensure community safety and reduce the risk of further unplanned power outages, Essential Energy was required to temporarily disconnect all identified non-complying solar systems within the village. Extensive customer engagement was undertaken in this village on this issue to limit adverse customer outcomes. Nonetheless, exports from some identified solar systems have been limited to zero to ensure the safety of Village residents and the broader community, until a long-term solution increasing capacity is implemented over the next 9-12 months.

The example outlined above, demonstrates that the current regulatory framework results in a "first come, first serve" basis, requiring the application of export limits being applied as a last resort option which financially penalises DER households that are prevented from exporting.

Without improved incentives for distribution businesses to invest in the network to promote and enable efficient levels of export rights, the customer experiences will be adversely impacted through the counterfactual scenario of export limitations being applied.

Removing the prohibition on export pricing will promote efficient investment in, and usage of, the distribution network

Essential Energy supports the AEMC's draft determination to remove the prohibition on DNSPs charging for exporting energy into the grid, or reward customers for actions that better use the distribution network or its operations (eg, using their own supply during periods of excess demand for network export services or shifting their exports to periods of high network energy consumption).

The increasing penetration of DER is expected to create new drivers of network expenditure to account for bi-directional power flow. How these export related costs for network services are recovered has been raised as both a growing equity issue, as well as a technical limitation issue.

In our opinion, removing the prohibition of charging for export services and also allowing DNSPs to reward DER customers for exports at times of network constraints, will enable DNSPs to efficiently provide export services whilst minimising the costs of providing network services across all customers. In particular, export pricing will:

- > help ensure that future expenditure of export capacity is cost-effective, because price signals facilitate customers making informed DER investment and operational decisions by reference to the costs they impose on the network; and
- > incentivise customers to operate their DER resources in a manner which maximises economic benefit for all stakeholders, because price signals facilitate customers shifting their usage patterns in a manner that reduces their own costs, as well as their contribution to future network costs.

Reflecting this, Essential Energy supports the draft determination to remove the prohibition on charging an export tariff because:

- > the circumstances DNSPs are facing today are substantially different from those when clause 6.1.4 was included within the rules, when there was minimal solar PV penetration and when the principal purpose of tariff reform was to combat growing peak demand;
- > consistent with the AEMC's 2014 pricing principles guidance, tariffs should be based on the long run marginal cost of providing the service to which it relates to that retail customer – this principle implies allowing customers to be incentivised to operate DER systems in a manner which is efficient to all network users;
- > DNSPs should be able to send price signals to customers of export services as a method of mitigating network congestion at select times, as well as rewarding customers who store their energy and export it at a time where it provides optimal value to the network (and therefore lowers costs to all network customers); and
- > there is a well-established body of evidence that cross-subsidies currently exist through costs being imposed on the network by DER exports, which cannot be recovered from only those customers with DER installations – a situation that would likely increase in materiality over time absent export pricing.

We agree with the AEMC that it is important to highlight that the Draft Determination does not mandate export pricing. Rather, the removal of the prohibition enables export pricing options under the regulatory framework – both charging and rewarding customers. Customer engagement and preferences will be central to these export tariff decisions.

Indeed, as discussed above, Essential Energy has already undertaken consultation with its customers with a view to initiating an export tariff trial. Essential Energy will continue to engage with individual DNSP customer advisory groups and jurisdictional stakeholders to manage the transition towards export pricing. Such engagement will enable us to develop a range of offerings that ensure customers have access to a level of export service that reflects their preferences and what they are willing to pay.

An AER-led process for incentive scheme design is appropriate

Essential Energy supports the AEMC's draft determination to require the AER to undertake a review to consider arrangements to provide incentives for DNSPs to maintain and improve performance in relation to export services. Essential Energy supports an effective incentive scheme with respect to exports, and sees value in the flexibility provided by the approach adopted in the Draft Determination as opposed to prescribing an incentive mechanism in the rules.

Flexibility is critical in the potential application of a performance incentive scheme to export services. We understand from the Draft Determination that the AER's review may include extending the Service Target Performance Incentive Scheme (STPIS) to exports. While Essential Energy agrees that inclusion of export services in the STPIS will provide an incentive to maintain and improve service performance metrics for export services, DNSPs do not currently have clear visibility on the extent to which their individual networks currently constrain DER exports. Consequently, it will be challenging to estimate STPIS baseline targets, address issues of unequal network access and measure DER outcomes. Alternative incentive arrangements will also be impacted by the network visibility challenge.

Accordingly, this flexible approach whereby the AER will progressively establish the incentive scheme for exports over time is preferred. Further, an iterative approach will enable a more complete and

considered understanding of the practicality, costs and timeframes in which a performance incentive scheme for exports could be implemented.

Reporting requirements should be developed through a customer orientated consultation process

Essential Energy agrees with the AEMC that the recognition of export services under the regulatory framework warrants enhanced transparency on export service performance. Indeed, Essential Energy's view is that implementing reporting obligations is a reasonable first step in addressing the challenges and opportunities for networks and communities arising from the energy transition. However, we query whether it is appropriate at this time for the Draft Determination to prescribe export service metrics to be reported by DNSPs, especially as the metrics against which DNSPs should be assessed must be useful, rather than encompassing every desirable measure. In this regard, metrics should be agreed in conjunction with stakeholders and DNSPs to ensure only valid measures are required and provide consistency in reporting.

Additional reporting is not costless, and these costs will be borne by all customers. By way of example, Essential Energy cannot currently capture the volume of DER not produced because of insufficient hosting capacity, because we do not have visibility behind the meter or of energy not exported. Sufficient smart meter saturation is likely ten years away. In the meantime, the business would need to develop an appropriate approach to report such a value and this could be a resource intensive process simply to produce an estimated value that may not actually be useful in measuring a DNSPs merits, given DER constraints and the associated investments are very localised.

Essential Energy suggests that any expected investments in additional reporting in the Distribution Annual Planning Reports should be commensurate with the value of the information to customers, and the use of the information to leverage benefits for future change. Accordingly, our opinion is that there is value in a more flexible and iterative approach to developing the metrics to be reported on to reflect customer preferences and DNSP capability. Such an approach would involve the reporting requirements being developed through a customer orientated consultation process to ensure any obligations reflect what customers are willing to pay for. A natural place for this to occur may be through its inclusion as an extension to the proposed AER review of the performance incentive arrangements that may apply to export services.

Although the reporting requirements in the Draft Determination draw on those proposed under jurisdictional obligations (such as the Independent Pricing and Regulatory Tribunal's (IPART's) review of distributor reliability standards), these processes are not yet complete and have not to date involved a substantive customer consultation component focused on the reporting metrics. Furthermore, IPART's proposed DER reporting requirements are contained within a reporting manual which provides IPART with more flexibility to deal with changes in requirements. Absent any detailed feedback from customer groups on the value of the proposed metrics (informed by the costs that will be incurred in the information provision), we believe it would be prudent to adopt a more flexible approach to determining the DER reporting obligations.

Adopting a flexible and iterative approach will help facilitate consistency across the numerous national and jurisdictional reviews regarding DER integration. Consistency across these reforms is imperative to avoid duplication – thereby minimising regulatory burden and costs borne by consumers for substantively similar but differentiated reporting obligations.

Further, a flexible approach will ensure that the reporting requirements also reflect the capability of DNSPs. At this time, Essential Energy is unable to readily provide all of the required information set out in the Draft Determination, and to become compliant will require significant investment in network visibility. A flexible and consultative approach that centres around customer preferences will ensure our investments in network visibility correspond to what customers are willing to pay for.

Completion of AER reviews by the nominated date is imperative in light of the timing of the NSW regulatory reset process

We understand from the Draft Determination that the AER is required to amend and publish new documents to reflect the proposed rules. Of particular relevance to Essential Energy in the context of our next regulatory proposal are the AER's:

- > review and possible amendment of the Expenditure Forecast Assessment Guidelines; and
- > development and publication of the customer export curtailment values (CECV) methodology and initial values.

These documents will form a core foundation of our assessment of DER expenditure in our upcoming regulatory proposal, which is due in January 2023. Under the proposed rule, the AER is required to complete its review on these matters by 1 July 2022. In light of the short lead time between the AER's completion of its review and the deadline for our regulatory proposal, it is imperative that the reviews occur within the nominated timeframe.

Export Tariff Transition Strategy

Essential Energy strongly supports the requirement for comprehensive stakeholder engagement prior to any implementation decisions being made through the development of a "export tariff transition strategy".

In our view customer engagement and preferences and protections are central to DER tariff decisions (and tariff reform more broadly) and as such the requirement to provide a "overview paper" in conjunction with existing TSS processes will be an important engagement activity. This requirement will enable DNSPs to ensure customers have access to a level of export services that reflect their preferences and what they may be willing to pay for increased export service levels.

Subsequently these preferences will dictate how DNSP businesses maintain and invest in the network. As discussed above, Essential Energy continues to undertake consultation with its customers with a view to potentially initiating an export tariff trial and will continue to engage with wider customer advisory groups, regulators and jurisdictional stakeholders to manage preferences and expectations of this issue prior to any proposed future implementation date. The attached summary of our engagement approach undertaken provides insights into the types of preparatory activities Essential Energy would expect to undertake as part of any future transition strategy.

Additional policy options

It is worth noting that Essential Energy does not support other policy options which have been actively canvassed by some stakeholders since the publication of the AEMC's draft determination. In particular, Essential Energy does not support:

- the grandfathering of existing small-scale renewable energy generation systems, i.e. any future export charges would only apply to newly connecting customers. Such an arrangement would materially curtail the benefits of the rule change and affect the pace of the transition, to the detriment and cost of all network users. Such an option would also raise practical system issues for DNSPs in having to manage multiple tiers of rules for customers.
- the contemplation of delayed implementation timelines. As outlined in the Draft Determination, significant network wide customer benefits and efficiencies exist in progressing with the access, pricing and incentive arrangements for DER rule change. Any contemplation of delayed implementation timelines would contribute to a diminishment of those benefits over time, whilst simultaneously worsening the overall scale of current difficulties identified.

Customer & stakeholder views on export charges

- > Essential Energy recently conducted a series of customer and stakeholder workshops to co-design tariffs to trial over the remainder of the 2019-24 regulatory period. The engagement workshops were led by Woolcott Research.
- > Determining an acceptable form of export charge for a trial comprised part of the engagement.
- > Three options to recover export related costs were put forward:
 1. A Time of Use export charge
 2. A kW Based Capacity export charge
 3. A Green Network Contribution charge (effectively just a levy).
- > The kW Based Capacity Charge was the most favoured type of export charge, though paying customers to export during the evening peak (5pm to 8pm) was considered to be a nice counterbalance to the implementation of such a charge.

This document summarises the round 2 engagement findings in relation to export charge discussions undertaken with Essential Energy's residential and small business customers and stakeholders as part of Phase 1 of the business' Tariff Trials project. This project phase involved working with customers and stakeholders to co-design acceptable tariffs to trial.

Each section of the findings contains feedback from three groups:

- > Qualitative feedback from Residential and Small Medium Business (SMB) customers, who participated in two rounds of detailed engagement workshops
- > Quantitative feedback from Residential and Small Medium Business (SMB) customers who participated in an on-line survey
- > Qualitative feedback from relevant stakeholders who participated in two rounds of detailed engagement workshops. Stakeholders consulted were: Total Environment Centre, Alternative Technologies Australia (ATA), Council of the Ageing (COTA), St Vincent de Paul, Public Interest Advocacy Centre (PIAC), Red Energy, Origin Energy, Enova Energy, Australia Energy Council, NSW Farmers, Cotton Australia, Tesla, Research and Innovation Division University of Newcastle and Collaboration on Energy and Environmental Markets (CEEM) UNSW.

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Summary of feedback on export charges

- > Similar to the findings in Round 1, both small customers and stakeholders had polarised views regarding the general concept of export charges (level of support: Small Customer Workshop 63%, Residential Survey 51%, SMB Survey 46%, Stakeholder Workshops N/A).
- > Support for taking an export tariff to trial varied significantly between solar and non-solar customers in the residential survey (30% solar, 60% non-solar) and SMB survey (36% solar, 48% non-solar).
- > There were mixed views about whether an export charge, if it were to be introduced, should be locational. Forty-three per cent of residents in the survey indicated that the whole network should pay, while 41% felt that payments should only be applied in areas where the network is experiencing problems. For SMBs these proportions were 46% and 35% respectively.

1. Time of Use Export Charge

- > There were mixed views on the Time of Use export charge (level of support: Small Customer Workshop 57%, Residential Survey 51%, SMB Survey 44%, Stakeholder Workshops 11/20)
- > It was seen as simple, balanced and would be effective at reducing solar exports, but hard on solar customers who feel they have 'done the right thing' in switching to green energy and are trying to recoup their investment costs.

2. kW Based Capacity Export Charge

- > This was the preferred export charge option in all engagement activities (level of support: Small Customer Workshop 71%, Residential Survey 54%, SMB Survey 49%, Stakeholder Workshops 13/20)
- > Although it was seen as being slightly more complex than the other options it was seen as 'more palatable' for solar customers due to the free threshold, and would encourage purchase of 'right' size system to avoid charges for future solar customers.

3. Green Network Contribution

- > This was the least preferred option in all engagement activities (level of support: Small Customer Workshop 49%, Residential Survey 25%, SMB Survey 17%, Stakeholder Workshops 6/20)
- > Although the facilitation of green energy was supported, the continued cross-subsidisation related to this option was seen as unfair and it was not expected to solve the network issues.

Detailed feedback on export charges

- > Similar to the findings in Round 1, both small customers and stakeholders had polarised views regarding the general concept of export charges (level of support: Small Customer Workshop 63%, Residential Survey 51%, SMB Survey 46%, Stakeholder Workshops N/A).
 - Support for taking an export tariff to trial varied significantly between solar and non-solar customers in the residential survey (30% solar, 60% non-solar) and SMB survey (36% solar, 48% non-solar).
- > Of the three export tariff options put forward, Kilowatt (kW) Based Capacity Charge had the highest level of support – by the end of the workshops over two-thirds of customers (71%) and most stakeholders supported it (13/20), as well as over half of residents (54%) and almost half of businesses (49%) in the surveys.
 - Although considered slightly more complex, participants were more favourable towards this option because it was thought to be more palatable for solar customers and would encourage the purchase of the most 'suitable' sized system to avoid charges.

General Concept of an Export Charge

Small customer workshops

Small customers, both residential and SMB's, presented polarising views about the general concept of an export charge. Even so, 63% supported the idea overall. Many were surprised to hear about the problems that solar exports cause the network, and this resulted in confusion as to why the government is still incentivising solar uptake.

"The government was encouraging people to get solar. I think they are still providing a subsidy, so it seems odd that Essential Energy are now saying it's an issue. Why is the government encouraging it if it's a bad thing? If it's causing an issue, they need to discourage solar." Residential Customer (In-depth telephone interview)

However, although they understood the issues, many were reluctant to endorse the idea of an export charge as it seemed to go against the overall push towards renewable energy. Those without solar were more supportive and felt that it was 'fair' for these customers to be paying to cover their share of network costs.

"I think it's pretty fair actually. I mean, we don't have solar anyway because we rent, but yeah, I just think it's fair." Residential Customer (North Coast Region)

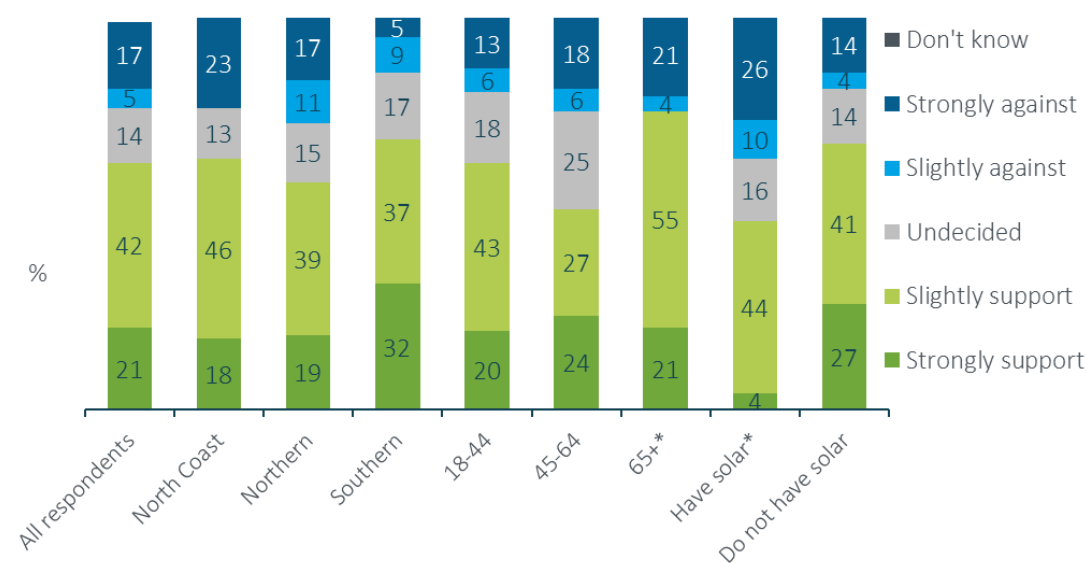
"If you don't have solar, you're not paying the extra for people that do have it." Residential Customer (North Coast Region)

Although it was made clear that exporting customers will still obtain the feed-in tariff from retailers, these customers were still unfavourable towards the idea that they would be getting less return for their investment.

Future uptake was also taken into consideration with mention that the introduction of export charges may put people off getting solar panels.

Polling during the workshop (see Figure 1) identified nearly two-thirds of these small customers strongly supported the inclusion of an export tariff in at least one of the trial options (63% total support overall). The Southern Region and those who did not have solar were more likely to be strongly in favour of supporting this trial (69% and 68% respectively). Those with solar were most likely to be against this proposal (36% against either slightly or strongly).

Figure 1: Support for inclusion of an export tariff in options taken to trial (Small customer workshops)



How supportive are you of Essential Energy including an export tariff in at least one of the tariff options taken to trial?

Base: All small customer workshops respondents (n=85); North Coast (n=31); Northern (n=31); Southern (n=23*), 18-44 (n=39), 45-64 (n=31), 65+ (n=15*), Have solar (n=20*), Do not have solar (n=65)

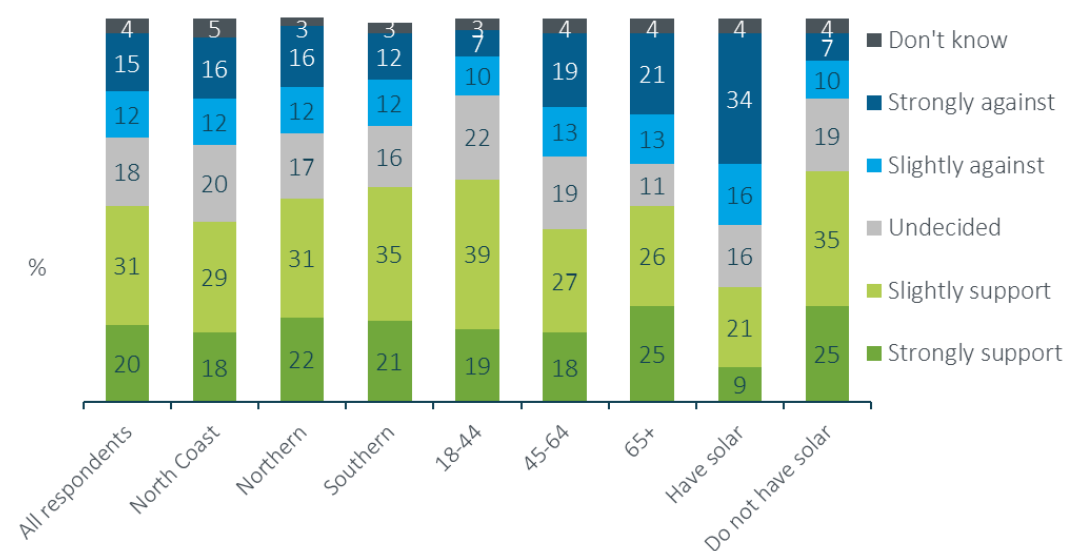
*WARNING: Small base size

Small customer surveys

The small customer survey also asked both residents and SMBs about their support for an export tariff option to be taken to trial. Support was slightly lower than seen in the workshops, with around half of residents (Figure 2) and SMBs (Figure 3) showing support (51% and 47% respectively).

Those without solar indicated stronger levels of support for taking an export tariff to trial (Residents 56%, SMBs 60%) while respondents who had solar only indicated around a third support (Residential 30%, SMB 36%), with half or more (Residents 50%, SMBs 54%) indicating they were against the proposal.

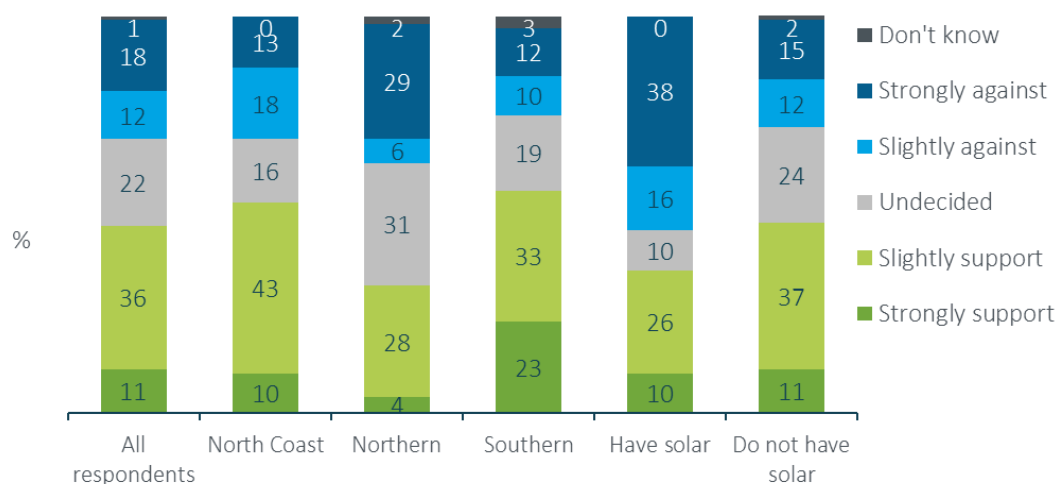
Figure 2: Support for inclusion of an export tariff in options taken to trial (Residential survey)



How supportive are you of Essential Energy including an export tariff in at least one of the tariff options taken to trial?

Base: All residential survey respondents (n=617); North Coast (n=210); Northern (n=189); Southern (n=218), 18-44 (n=232), 45-64 (n=197), 65+ (n=188), Have solar (n=244), Do not have solar (n=373)

Figure 3: Support for inclusion of an export tariff in options taken to trial (SMB survey)

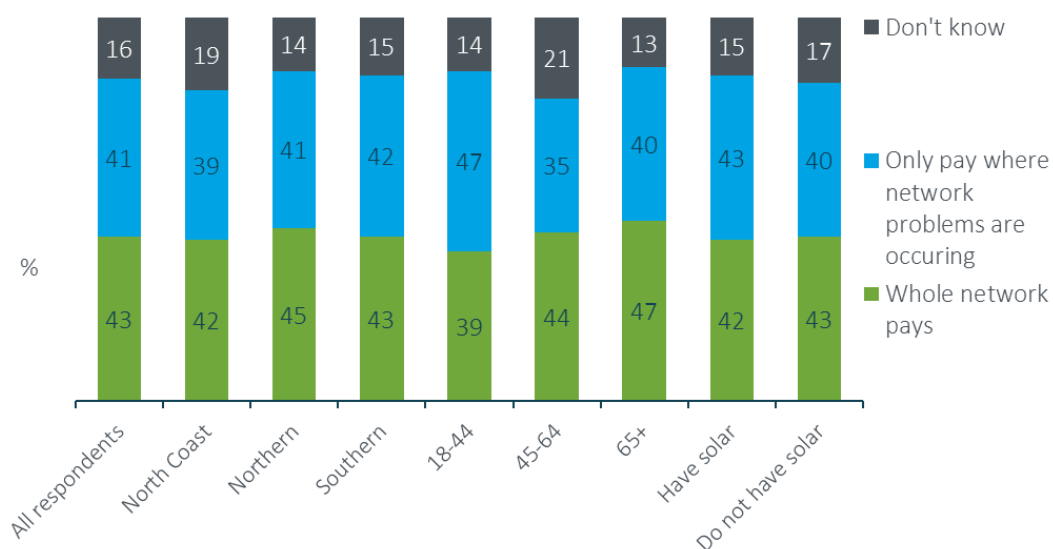


How supportive are you of Essential Energy including an export tariff in at least one of the tariff options taken to trial?

Base: All SMB survey respondents (n=162); North Coast (n=78); Northern (n=47); Southern (n=37), Have solar (n=30), Do not have solar (n=131)

There was some disagreement around whether export charges should be locational (see Figure 4). 43% of all resident respondents in the survey indicated that the whole network should pay, while 41% felt that payments should only be applied in areas where the network is experiencing problems. This divide was seen across all demographics. Younger residents (aged 18-44 years) were slightly more likely to indicate a preference for problem areas paying (47%), while older residents (aged 65 years and older) were slightly more likely to indicate that the whole network should pay (47%).

Figure 4: Preference for who pays export tariffs on the network (Residential survey)

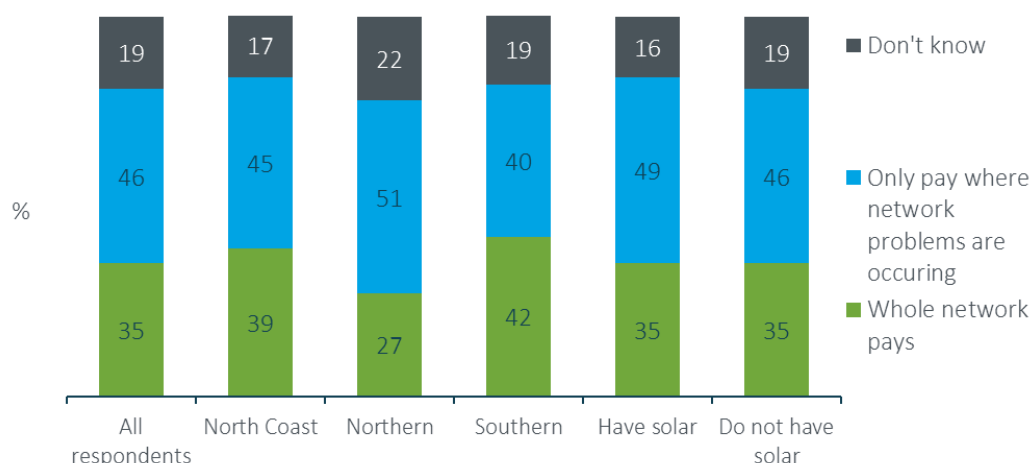


If this charge was to be introduced, do you think it should it only be paid by customers in locations where network problems are already occurring, as a result of solar exports being so high, or across the whole network?

Base: All residential survey respondents (n=617); North Coast (n=210); Northern (n=189); Southern (n=218), 18-44 (n=232), 45-64 (n=197), 65+ (n=188), Have solar (n=244), Do not have solar (n=373)

SMB respondents were slightly more likely to say that only those customers in areas where network problems are occurring should be impacted by export charges (46%) rather than the whole network (35%).

Figure 5: Preference for who pays export tariffs on the network (SMB survey)



If this charge was to be introduced, do you think it should it only be paid by customers in locations where network problems are already occurring, as a result of solar exports being so high, or across the whole network?

Base: All SMB survey respondents (n=162); North Coast (n=78); Northern (n=47); Southern (n=37), Have solar (n=30), Do not have solar (n=131)

Stakeholder workshops

Stakeholders held similar polarised views to small customers, and while they all understood and accepted the network issues, they felt it would be very difficult to introduce an export charge, particularly because many solar customers are already aggrieved that the feed-in tariff keeps being reduced.

“Currently, as things are, it is so difficult for people to understand why they have to pay double the price for the energy they use compared to what the retailers pay them when they export. So it’s hard for them to understand why the value they get is different when they are buying energy than selling it.” Stakeholder

In response to this, the importance of a strong education campaign was stressed, regardless of whichever export option was chosen.

Stakeholders highlighted the importance for customers need to feel they are being ‘brought along on the journey’ rather than being told to change their behaviours because they are ‘doing something wrong’.

“When you start to introduce change and people understand it, then they buy into it, rather than seeing it as an imposition.” Stakeholder

There is no awareness and understanding of the network issues amongst the community so Essential Energy would first have to enable people to understand and accept the network issues (which will be hard in itself), before even trying to convince solar customers that export charges should be introduced to solve those issues.

Some felt that a stronger case needs to be made that an export charge is needed, as opposed to a different solution such as incentives to encourage customers to use energy differently.

“If you can prove its more valuable than incentivising customers to use energy in the way that you want, & it is equitable to charge solar customers some sort of charge, then I’m ok with that, but I don’t think you’ve (or anybody) made that case yet. So that’s a challenge in trying to decide which best option to do when we haven’t answered the first question yet.” Stakeholder

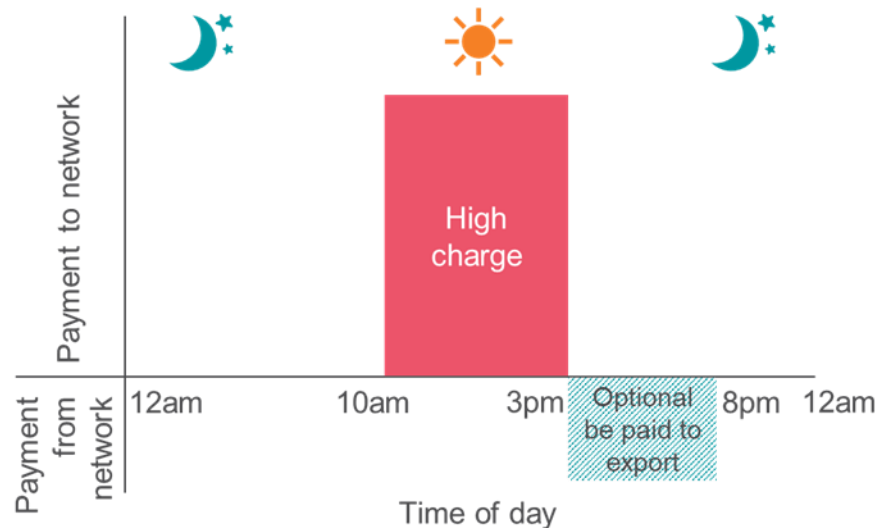
Feedback on the options for recovering export related costs

1. Time of Use Export Charge

The first specific option for an export charge that was put to customers was the 'Time of Use' export charge.

It was explained that only customers who export energy into the network would pay/receive this charge. It aims to encourage them to use (or store) the electricity they generate between 10am and 3pm.

Customers with solar panels would pay a charge for exporting electricity across the middle of the day (10am to 3pm) but on the other hand, customers could be paid by the network to export electricity during the evening peak (5pm to 8pm) when there is the demand for it. Exports from customers with solar panels outside of these times would incur no charge at all. Other network tariffs would be reduced to account for this charge.



Small customer workshops

The small customer workshops presented mixed views on the Time of Use export charge with 57% supporting taking this to trial. Although it was seen as quite simple and balanced, it was also perceived to be hard on customers who have invested in solar ('doing the right thing') and are trying to recoup costs. It was thought that it would encourage solar customers to self-consume to avoid the export charge.

"If I was a solar user than I think it would be nice to reap the rewards and get some money for my investment." Residential Customer (Northern Region)

"I suppose we put solar on for the right reasons. Knowing, thinking you're doing the right thing and it's a fair investment. But I suppose it probably would encourage me if I'm going to be penalised to, I probably shouldn't say this, but to turn on my air con during the day, just to use the excess. Even if there's no one home to use it. It seems wasteful. It seems to be driving the trend the wrong way." Residential Customer (Northern Region)

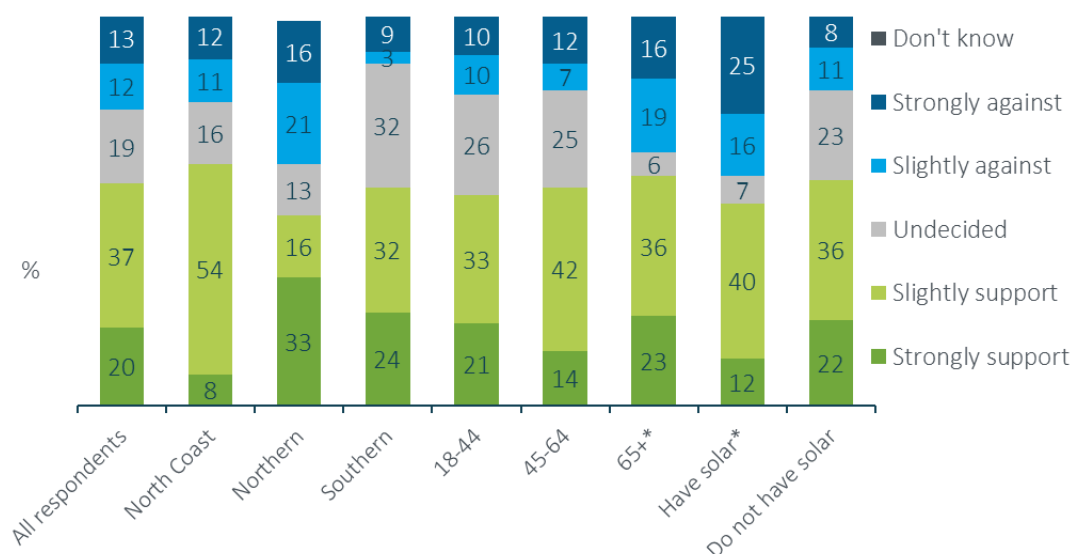
"They're (customers with solar panels) using the system to export electricity which is currently being charged to me who doesn't export. So, it creates more of a user pays type of system. I like the idea of it." Residential Customer (Northern Region)

There was general support for the balanced approach of customers paying to export during the daytime period and being paid to export during the evening peak. However, solar customers were less supportive of this option, particularly those who would find it harder to self-consume during the daytime. It was also recognised that solar customers would have to purchase a battery to obtain the payment in the evening which was thought to be cost prohibitive currently.

"You would really need battery storage to make use of that payment from 3pm to 8pm." Residential Customer (Northern Region)

Most thought that the 10am-3pm window should be longer in the summer months to take account of the longer solar generation period, although there was a concern that it might confuse people if the times change between seasons.

Figure 6: Support for the Time of Use export charge to be taken to trial (Small customer workshops)



If an export charge were to be included, how supportive are you of Essential Energy taking the time of use export charge to trial?

Base: All small customer workshops and in-depths respondents (n=85); North Coast (n=31); Northern (n=31); Southern (n=23*), 18-44 (n=39), 45-64 (n=31), 65+ (n=15*), Have solar (n=20*), Do not have solar (n=65)

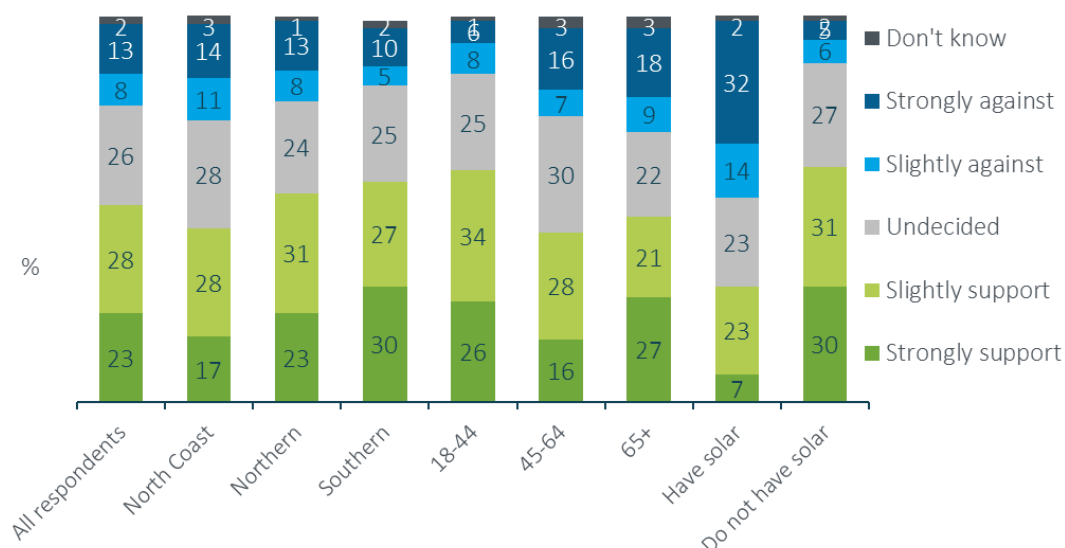
*WARNING: Small base size

Small customer surveys

Residents and SMBs were also asked about their support for the Time of Use export tariff in the surveys.

For residents there was a similar trend as seen in the small customer workshops (see Figure 7). Overall, just over half were supportive (51%), however over one quarter were left undecided (26%). Those with solar were less supportive overall (30% support), with only 7% strongly supporting this type of export tariff. Comparatively, those without solar presented much stronger support (61% overall) and were more likely to say they strongly supported (30%).

Figure 7: Support for the Time of Use export charge to be taken to trial (Residential survey)

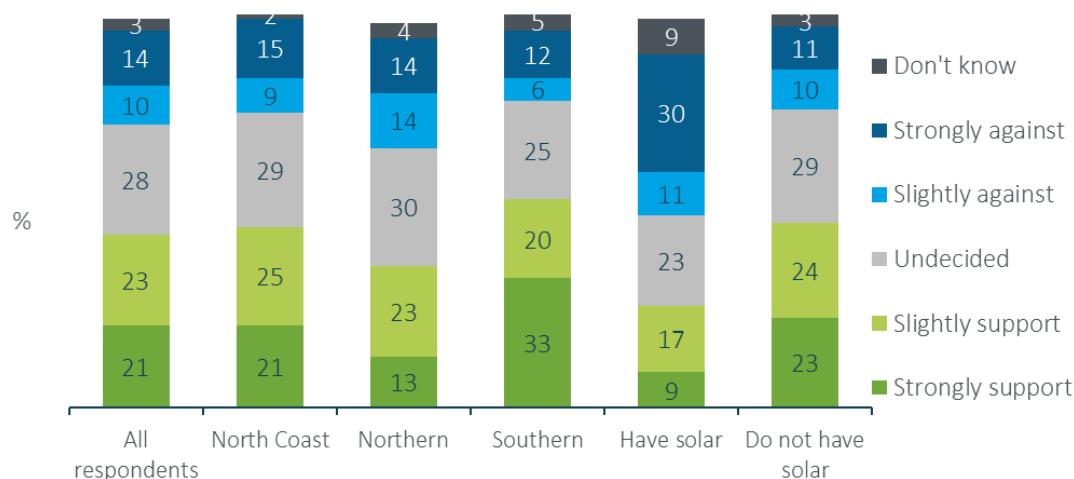


How supportive are you of Essential Energy taking the Time of Use Export Charge to trial (remembering that only customers who export energy into the network would pay/receive this charge/payment)?

Base: All residential survey respondents (n=617); North Coast (n=210); Northern (n=189); Southern (n=218), 18-44 (n=232), 45-64 (n=197), 65+ (n=188), Have solar (n=244), Do not have solar (n=373)

Small and medium business customers were slightly less positive with just 44% supporting a Time of Use export charge going to trial and 28% undecided. Again, businesses with solar were more negative with just over a quarter (26%) supporting this option and 41% against. Those without solar were comparatively more positive with 47% supportive and 21% against.

Figure 8: Support for the Time of Use export charge to be taken to trial (SMB survey)



How supportive are you of Essential Energy taking the Time of Use Export Charge to trial (remembering that only customers who export energy into the network would pay/receive this charge/payment)?

Base: All SMB survey respondents (n=162); North Coast (n=78); Northern (n=47); Southern (n=37), Have solar (n=30), Do not have solar (n=131)

There were a variety of perceived positives regarding the Time of Use Export Charge, including fairness, affordability, simplicity and support for battery use. However, many did not think there were any positives (Residents 21%, SMBs 22%) and there were a fairly high number of respondents who said they didn't know or felt they needed more information (Residents 17%, SMBs 14%).

Table 1: Perceived positives of the Time of Use Export Charge

Perceived positives of the Time of Use Export Charge	Total Residential (n=617) %	Total SMB (n=162) %
It seems fair/will work for everyone/no one is punished	10	14
Affordable/Can save/earn money	9	4
Good for those with batteries/Encourages use of batteries	9	5
Will help take pressure of the network/protect it	8	7
Simple/Easy to understand/Makes sense	7	10
Its good/seems good/I like it /it will help/seems better NFI	6	7
Reflects economic/logistic reality	3	3
Change behaviour/Encourages people to save/not waste electricity	3	2
Offers choice/more control	2	1

Perceived positives of the Time of Use Export Charge	Total Residential (n=617) %	Total SMB (n=162) %
It will be good for the environment/saves energy/sounds green/supports solar energy	2	3
Other	10	13
I don't know/need to know a lot more/have questions	17	14
Nothing	21	22

What do you dislike about the Time of Use Export Charge?

Base: All Residential and SMB survey respondents (as shown)

The most common negative identified was that the Time of Use export charge was unfair to those with solar panels (Residents 23%, SMBs 22%) although around a quarter did not feel there were any negatives (Residents 25%, SMBs 23%). Again, there were a considerable number of respondents who felt they didn't know or needed further information to comment (Residents 19%, SMBs 21%).

Table 2: Perceived negatives of the Time of Use Export Charge

Perceived negatives of the Time of Use Export Charge	Total Residential (n=617) %	Total SMB (n=162) %
Not fair for/penalises those with solar/Discourages use of sustainable energy	23	22
The lot/everything/it's a money grab	9	8
Need to remember to reduce usage/inconvenient/difficult for some people/businesses	9	6
Could be expensive/result in bill shock	9	10
Its unfair/it might be unfair NFI	3	3
That EE is not working out your own problems/get your own batteries/sort out infrastructure	2	4
Other	6	7
I don't know/I need to know more/Not answered	19	21
Nothing	25	23

What do you dislike about the Time of Use Export Charge?

Base: All Residential and SMB survey respondents (as shown)

Stakeholder workshops

The stakeholder workshops also presented mixed views. While there was recognition that the Time of Use export charge would assist with network problems, it was perceived that it may provoke a backlash from solar customers. For stakeholders, this was the 'second-best' option with 11 out of 20 supporting time taking it to trial.

"Makes sense from the principle, [that you] want to feel that it's cost reflective and it's being attributed to the customers who are creating stress for the network. However, it does come across as anti-solar, it's a difficult message to pass to customers." Stakeholder

Stakeholders perceived it would be a 'hard sell' to introduce a Time of Use export charge as:

- > Solar customers will feel they are being 'penalised for their principles' as they believe they have 'done the right thing' and proactively invested into a sustainable energy solution
- > Solar customers already don't understand why there is such a discrepancy between the price they pay for electricity (high) compared to the price they receive for exports (low).
- > It is predominantly a punitive approach in that it tells them what they can't do

Stakeholders also felt that if a Time of Use export charge was to be introduced that clear and simple messaging would be key for its success.

"There would be a transition period which the industry would have to go through in order to educate the customers. It probably depends how you message this tariff as well." Stakeholder

There was support for exporting customers being paid in the evenings as well as being charged in the daytime.

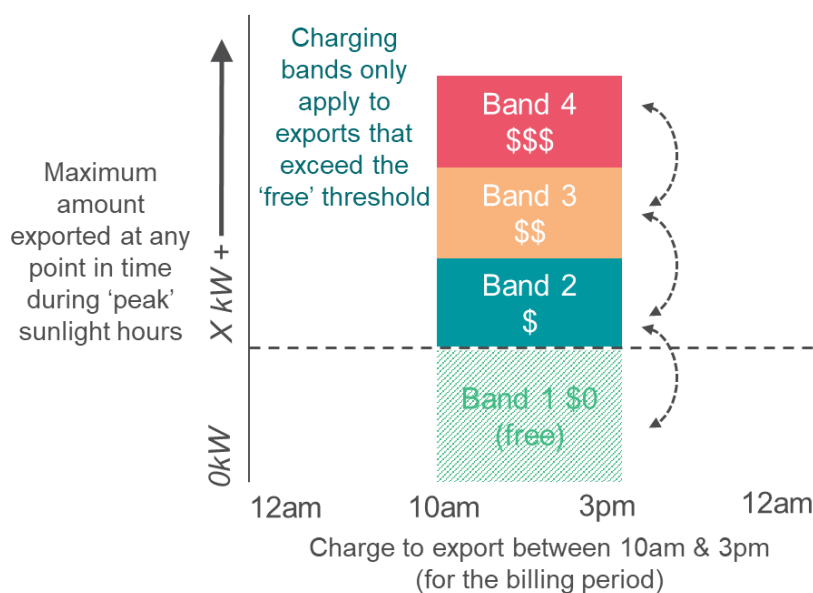
"Solar customers would be much more receptive to export charging if it went both ways to reflect this is where the solar is causing a bit of a problem, and this is actually when solar is helping the problem (being paid in the evening to export)." Stakeholder

2. kW Based Capacity Export Charge

The next export charge option presented to customers and stakeholders was a kW Based Capacity export charge.

This charge would only be paid by customers with solar panels who export large amounts of energy into the network between 10am and 3pm. It was explained that everyone with solar panels would be allowed to export a set amount of energy (say 5kW) into the network between 10am and 3pm for no charge at all, but different payment bands would apply to exports above this 'free' threshold level (only between 10am and 3pm).

This option would continue to give everyone something for free and would encourage those customers who currently export a lot of energy into the network over the middle of the day to use (or store) more of the electricity they generate. Other network tariffs would be reduced to account for this charge.



Small customer workshops

The kW Based Capacity export charge option was the preferred option for small customers with 71% supporting it (see Figure 9), and was felt overall to be more palatable and 'fair' for solar customers.

"This might be a bit of an easier sell to those that already have solar panels." Residential Customer (Southern Region)

As a whole this option was perceived to be a bit more complex than the Time of Use export charge as it involved different prices depending on the amount exported.

However small customers felt that this option might encourage people to get the right size system for their requirements, rather than a much larger one, which was seen as a positive outcome and wouldn't put people off getting solar.

"It would definitely make people think about just stopping at that five-kilowatt system so they don't incur any losses." Residential Customer (Southern Region)

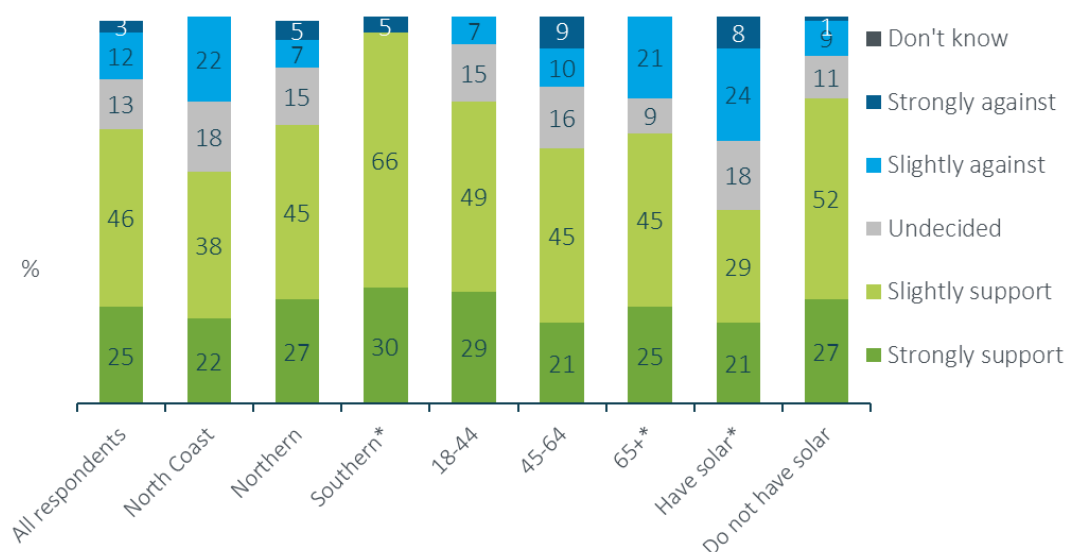
If you say anything under five kilowatts, we're not going to charge you for, then it encourages you still to go green, but not go overboard with green (i.e. not get a very large system)." Residential Customer (Northern Region)

However, since most solar customers only have a 5kW system it was thought that this option may not impact many residents, only small businesses with slightly larger systems, so may not even be effective in terms of solving the network issues relating to solar exports.

There were some questions and concerns about how much the charge would differ between the bands and whether it would be affordable for solar customers exporting larger amounts.

A seasonal or time of day variation was not thought to be as important in this option.

Figure 9: Support for the kW Capacity Based export charge to be taken to trial (Small customer workshops)



If an export charge were to be included, how supportive are you of Essential Energy taking the kW capacity based charge to trial?

Base: All small customer workshops respondents (n=85); North Coast (n=31); Northern (n=31); Southern (n=23*), 18-44 (n=39), 45-64 (n=31), 65+ (n=15*), Have solar (n=20*), Do not have solar (n=65)

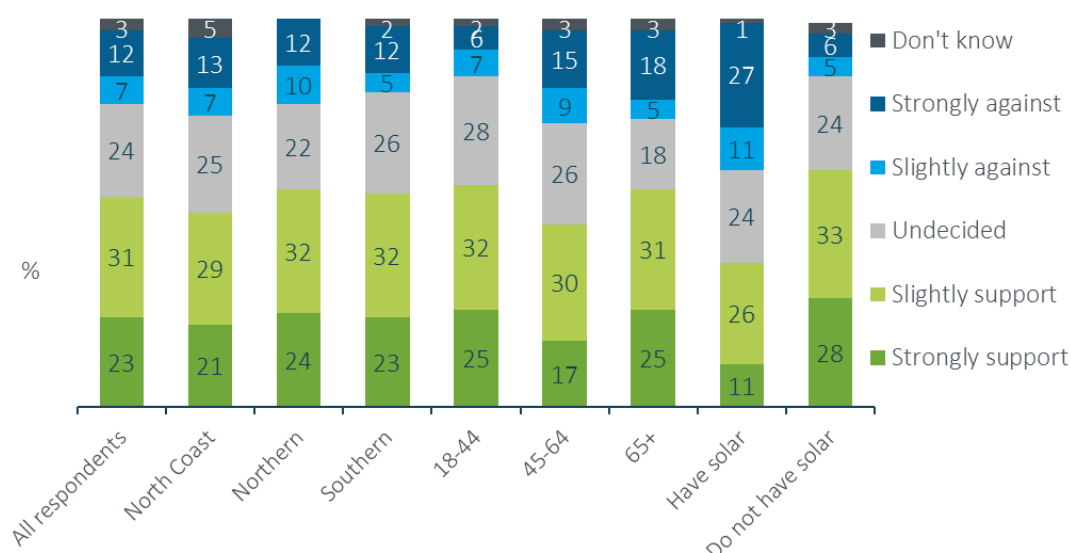
*WARNING: Small base size

Small customer surveys

When posed to residents in the online survey, the kW Capacity Based export charge was also the most preferred of the three options, however support was not as strong as seen in the workshops (see Figure 10). Overall, 54% of residential survey respondents indicated support for this tariff option (either slightly or strongly).

While support was low amongst residential survey respondents with solar (37% support, 11% supporting strongly), it was still the highest level of support given for any of the three export tariff options measured (compared to 30% overall support for Time of Use and 26% overall support for the Green Network Contribution).

Figure 10: Support for the kW Capacity Based export charge to be taken to trial (Residential survey)

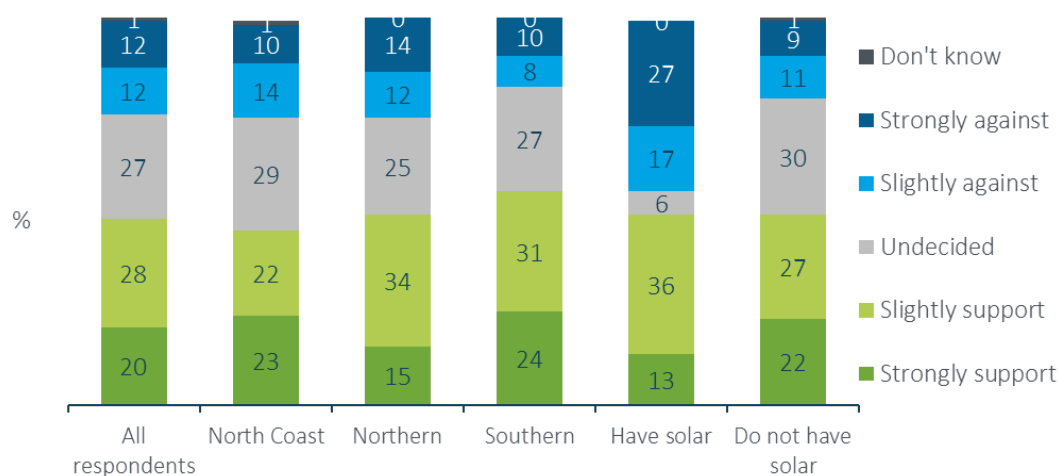


How supportive are you of Essential Energy taking the kW Capacity Charge to trial (remembering that it would only be paid by customers with solar panels who export energy above the 'free' threshold)?

Base: All residential survey respondents (n=617); North Coast (n=210); Northern (n=189); Southern (n=218), 18-44 (n=232), 45-64 (n=197), 65+ (n=188), Have solar (n=244), Do not have solar (n=373)

Amongst SMB survey respondents just under half were supportive of taking this option to trial (48%) overall, with a similar number of those with solar being supportive (49%) - the preferred export charge option amongst SMBs with solar.

Figure 11: Support for the kW Capacity Based export charge to be taken to trial (SMB survey)



How supportive are you of Essential Energy taking the kW Capacity Charge to trial (remembering that it would only be paid by customers with solar panels who export energy above the 'free' threshold)?

Base: All SMB survey respondents (n=162); North Coast (n=78); Northern (n=47); Southern (n=37), Have solar (n=30), Do not have solar (n=131)

Many online respondents regarded fairness as a positive aspect of the kW Based Capacity export charge (Residents 14%, SMBs 20%) as well as being affordable (Residents 16%, SMBs 7%). As with the Time of Use export charge, a number of residential and SMB online respondents did not know or wanted more information (Residents 18%, SMBs 12%) or could not identify any positive aspects of this export charge (Residents 20%, SMBs 23%).

Table 3: Perceived positives of the kW Based Capacity Charge

Perceived positives of the kW Based Capacity Charge	Total Residential (n=617) %	Total SMB (n=162) %
Affordable/Can save/earn money	16	7
It seems fair/will work for everyone/no one is punished	14	20
Its good/seems good/I like it /it will help/seems better NFI	7	5
It is flexible/fluid/based on usage	5	3
Reflects economic/logistic reality	4	6
Good for those with batteries/Encourages use of batteries	4	7
Simple/Easy to understand/Makes sense	3	3
Will help take pressure of the network/protect it	2	2
Offers choice/more control	2	2
It will be good for the environment/saves energy/sounds green/supports solar energy	1	8

Perceived positives of the kW Based Capacity Charge	Total Residential (n=617) %	Total SMB (n=162) %
Other	7	10
I don't know/need to know a lot more/have questions	18	12
Nothing	20	23

What do you like about the kW Based Capacity Charge?

Base: All Residential and SMB survey respondents (as shown)

As with the Time of Use export charge, the most common negative factor mentioned for the kW Based Capacity export charge was that it was unfair for those with solar (Residents 17%, SMBs 29%). Over a quarter said there was no negative aspects of this export charge (Residents 32%, SMBs 27%) and over a fifth wanted more information (Residents 22%, SMBs 20%) in order to make a judgement.

Table 4: Perceived negatives of the kW Based Capacity Charge

Perceived negatives of the kW Based Capacity Charge	Total Residential (n=617) %	Total SMB (n=162) %
Not fair for/penalises those with solar/Discourages use of sustainable energy	17	29
Could be expensive/result in bill shock	9	8
The lot/everything/it's a money grab	6	2
Need to remember to reduce usage/inconvenient/difficult for some people/businesses	4	1
That EE is not working out your own problems/get your own batteries/sort out infrastructure	3	3
Low threshold/5Kw is not a lot	2	0
Its unfair/it might be unfair NFI	2	3
Other	7	9
I don't know/I need to know more/Not answered	22	20
Nothing	32	27

What do you dislike about the kW Based Capacity Charge?

Base: All Residential and SMB survey respondents (as shown)

Stakeholder workshops

The kW Based Capacity export charge was also the preferred option for stakeholders with 13 out of 20 supporting this. This option was liked as it was thought that it would encourage customers to purchase a system that suits their electricity needs, rather than a larger capacity model. Most stakeholders also supported the fact that everyone would have an allowance that did not incur a charge (i.e. up to 5kW). However, it was seen as being a bit harsh on those who have already invested in larger systems as they would have to pay a higher charge.

"I agree it's a little bit better because it encourages people to size their systems properly but we have to remember that many have already bought their systems and it's a bit cruel for them to go and slap on another charge." Stakeholder

Some stakeholders challenged the assumption that this is 'fair' as some exporting customers 'causing' the issue would still not pay anything if they only export within the free limit.

“I would challenge the concept that that’s fair. Everyone who is exporting should be paying, they should be paying a set amount for that access. They’re getting that access to the grid for nothing. I really don’t think that’s fair, it may reflect the current rules, but it’s not fair.” Stakeholder

There was a suggestion that this option could be volume based rather than capacity based as it might be easier for customers to understand. Retailers were also concerned about the complexity of this option and whether customers would be able to understand it.

3. Green network contribution

The last option presented to customers and stakeholders was really an alternative to an export charge. The option involved recouping the costs of managing solar exports into the network through a Green Network Contribution which would be paid by all customers on the network, not just exporting customers.

It would involve a small flat fee to facilitate the investment required for the continued take-up of green energy and is based on the concept that every customer might be prepared to pay a little bit to facilitate the move to a green energy future. It was explained that this option would not resolve the network issues caused by solar exports, so it will cost customers more in the long-run than the other two options. Other network tariffs would be slightly reduced to account for this charge.

Small customer workshops

The Green Network Contribution option was the least supported option within the small customer workshops (with only 49% supporting either slightly or strongly, see Figure 12).

On the positive side participants thought that many would be happy to pay a small amount to facilitate green energy, particularly as it would only be a couple of dollars a month. It was also thought to be the simplest option and would not discourage solar uptake.

"I'm pretty passionate about the environment and sustainability and stuff, and \$20 a year isn't that much. It's not even \$2 a month." Residential Customer (Northern Region)

"I think that's the overall goal – is a green network. That's the goal and this encourages a green network. The other two options don't really." Residential Customer (Northern Region)

"I'd be happy to pay a small fee to get more people to take it up. Last thing I really to want to see is reversing the current trend." Residential Customer (North Coast Region)

"It all depends on how it's marketed I suppose. It's going to annoy some people, but some people won't care. Yeah, I think it's going to annoy people less though, than people that have already spent heaps of money on their solar systems... finding that they're getting penalised for them." Residential Customer (Southern Region)

However, this option was not favoured because it was not seen as solving the network issues, it could just lead to further problems down the track, and the charge would probably increase over time.

"I don't like the way this one will increase as time goes by. As there is more and more stress on the network the price just goes up. It doesn't actually help with the cause of the stress." Residential Customer (North Coast Region)

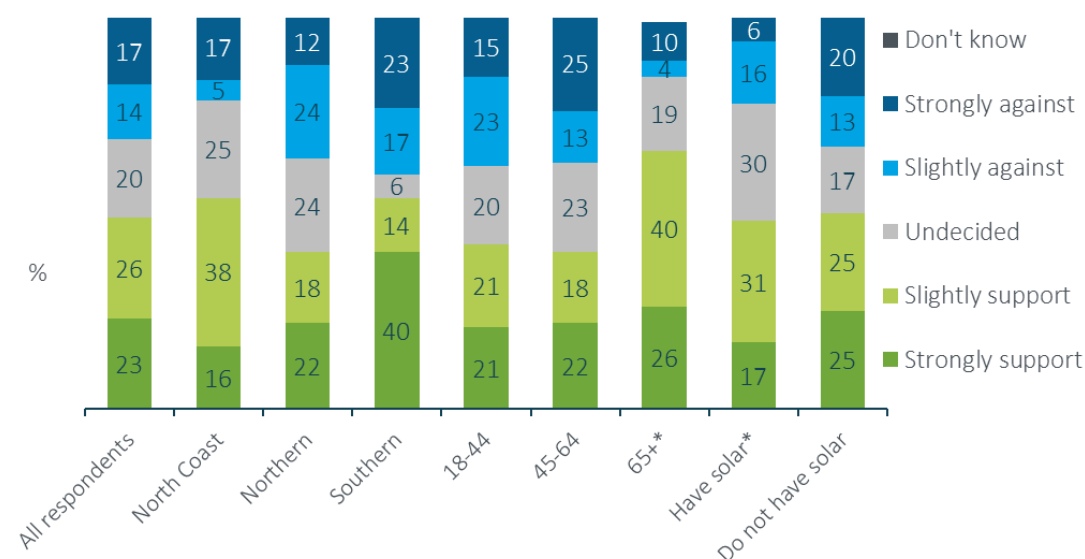
"Does seem like a bit of a band aid fix. If you're not actually addressing the issue, moving forward, well, then it's, it's only a band aid and the issues are still going to be there moving forward. That's the way I looked at it anyway." Residential Customer (Southern Region)

Some also thought it wasn't as 'fair' as the other options, in that exporting customers who are causing the problem are not paying more to fix it.

"Don't like it as it is an extra cost for everyone." Residential Customer (Northern Region)

"I feel like this one's a bit unfair. I'm going to have a huge system, but poor old Betty down the road doesn't need to be paying my bill for me, so to speak." Residential Customer (Southern Region)

Figure 12: Support for the green network contribution charge to be taken to trial (Small customer workshops)



If an export charge were to be included, how supportive are you of Essential Energy taking the green network contribution charge to trial?

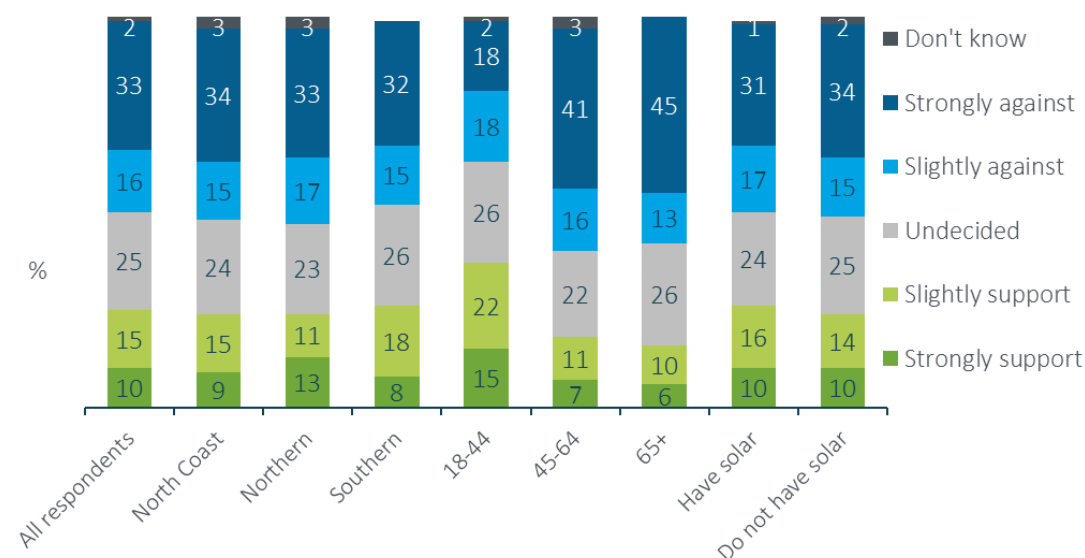
Base: All small customer workshops respondents (n=85); North Coast (n=31); Northern (n=31); Southern (n=23*), 18-44 (n=39), 45-64 (n=31), 65+ (n=15*), Have solar (n=20*), Do not have solar (n=65)

*WARNING: Small base size

Small customer surveys

Similarly, in the residential survey the Green Network Contribution saw the lowest levels of support (25% supporting either strongly or slightly). Both those with and without solar electricity indicated low levels of support (26% and 24% respectively). The highest levels of support were seen amongst the younger demographic (aged 18 to 44 years), with over one-third supporting the tariff option (37%), 15% of them in strong support.

Figure 13: Support for the green network contribution charge to be taken to trial (Residential survey)

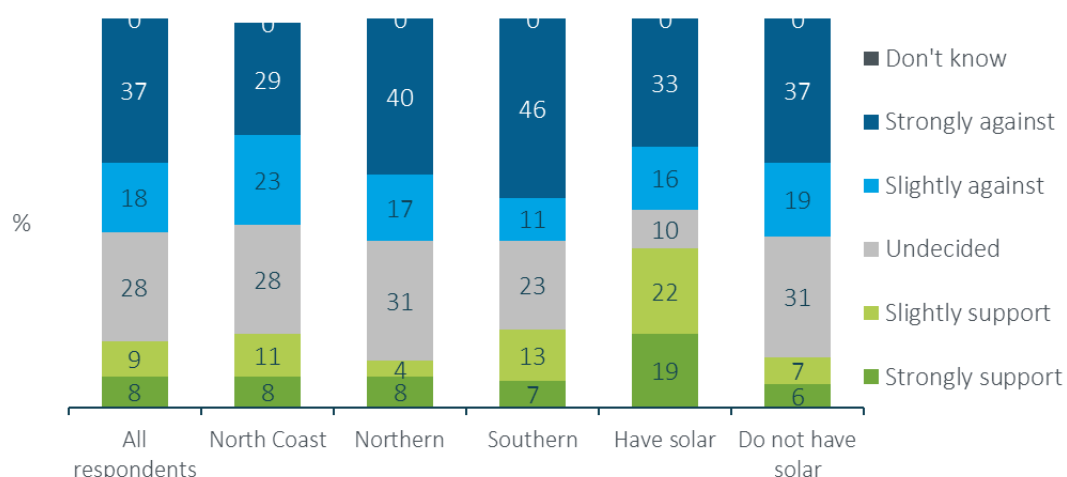


How supportive are you of Essential Energy taking the Green Network Contribution to trial?

Base: All residential survey respondents (n=617); North Coast (n=210); Northern (n=189); Southern (n=218), 18-44 (n=232), 45-64 (n=197), 65+ (n=188), Have solar (n=244), Do not have solar (n=373)

Small and medium businesses with solar were a lot more supportive of this option than those without solar (41% and 13% respectively). However, overall this was the least preferred option by business respondents with over half stating that they were against taking it to trial (55%).

Figure 14: Support for the green network contribution charge to be taken to trial (SMB survey)



How supportive are you of Essential Energy taking the Green Network Contribution to trial?

Base: All SMB survey respondents (n=162); North Coast (n=78); Northern (n=47); Southern (n=37), Have solar (n=30), Do not have solar (n=131)

Many online respondents felt that this option would be good for the environment and/or support solar energy (Residents 19%, SMBs 17%). However almost half said there were no positives of the Green Network Contribution (Residents 45%, SMBs 45%).

Table 5: Perceived positives of the Green Network Contribution

Perceived positives of the Green Network Contribution	Total Residential (n=617) %	Total SMB (n=162) %
It will be good for the environment/saves energy/sounds green/supports solar energy	19	17
Cost is spread	8	3
It seems fair/will work for everyone/no one is punished	6	10
Affordable/Can save/earn money	3	5
Its good/seems good/I like it /it will help/seems better NFI	3	4
Other	5	7
I don't know/need to know a lot more/have questions	16	12
Nothing	45	45

What do you like about the Green Network Contribution?

Base: All Residential and SMB survey respondents (as shown)

The most common negative aspect of the Green Network Contribution that online respondents identified was that it could be expensive (Residents 38%, SMBs 32%). Some thought it was unfair (Residents 13%, SMBs 14%) although a similar number could not think of any negative points of this option (Residents 15%, SMBs 11%).

Table 6: Perceived negatives of the Green Network Contribution

Perceived negatives of the Green Network Contribution	Total Residential (n=617) %	Total SMB (n=162) %
Could be expensive	38	32
Its unfair/it might be unfair NFI	13	14
It won't solve the problem/just a Band-Aid	9	7
The lot/everything/it's a money grab	8	8
Not fair for/penalises those with solar/Discourages use of sustainable energy	5	6
That EE is not working out your own problems/get your own batteries/sort out infrastructure	4	4
It only benefits those with solar/no benefit to others	0	8
Other	6	7
I don't know/I need to know more/Not answered	15	12
Nothing	15	11

What do you dislike about the Green Network Contribution?

Base: All Residential and SMB survey respondents (as shown)

Stakeholder workshops

Stakeholders demonstrated the least amount of support for the Green Network Contribution option also, with only six out of 20 in favour.

The lack of support was due to the stakeholders' view that this option is a continuation of cross-subsidisation and that it would not really solve the network issues. Some questioned whether this is just delaying resolution of the issue – with the introduction of electric vehicles it is not just a solar issue that needs to be tackled but a DER issue.

Retailers were not keen to implement another line item on the already complex bill, particularly because it would just look like a tax (without any obvious direct benefits to customers).



If you have any questions, please contact:
Natalie Lindsay, Head of Regulatory Affairs on 0408 681 355.

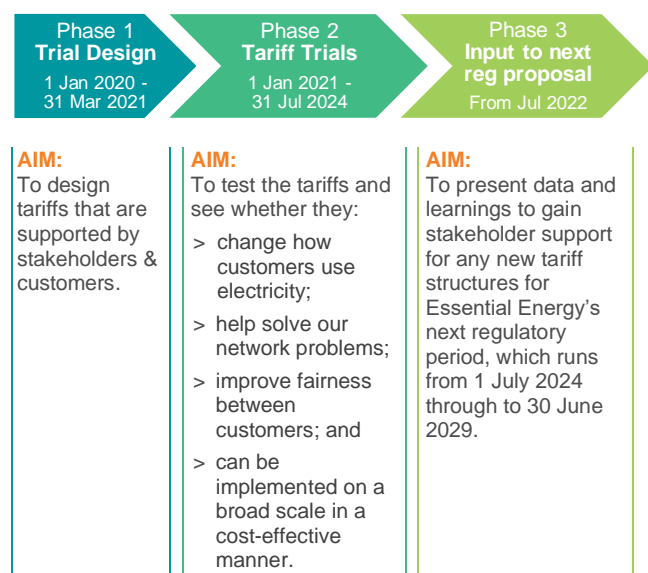
Essential Energy's Tariff Trial Project

Summary of the 'Trial Design' phase

- > Essential Energy undertook a dedicated engagement program with small customers and stakeholders to co-design acceptable tariffs to take to trial.
- > In the wake of Covid-19, the program was successfully conducted on-line using the Essential Engagement website and the Zoom application and has resulted in five customer and stakeholder supported concepts to take to trial
- > Essential Energy would not have landed on these concepts in the absence of such an engagement process.
- > The engagement program was highly rated by the customers who participated and resulted in trials that were wholly supported by Essential Energy's independent Tariff Advisory Panel in the first instance.

Overview of the tariff trials project

In its 2019-24 Tariff Structure Statement, Essential Energy committed to undertaking tariff trials to ensure any fundamental changes to tariffs were properly assessed from a customer response and impact perspective. The tariff trials will take place across three phases:



Ahead of the engagement process, Essential Energy defined the network problems that tariffs may be able to help solve. These are shown in the following table. The relative success of the associated tariffs in solving these network problems will be a key measurement outcome from the trials.

The network problems that tariffs may help 'solve'

	Issue	Potential tariff solution
1.	Some areas of our network suffer from voltage and/or thermal constraints	Pay customers to provide support services to the network to address: <ul style="list-style-type: none"> > the widening of the voltage envelope; and > capacity issues
2.	The level of replacement capex will cause issues <ul style="list-style-type: none"> > Costs to replace ageing assets will push the Regulated Asset Base (RAB) value higher > Postage stamp pricing means there is cross-subsidisation between high and low cost-to-serve customers 	<ul style="list-style-type: none"> > Transition uneconomic customers to Stand Alone Power System (SAPS) solutions with efficient SAPS pricing (part of a separate SAPS tariff trials project) > Locational tariffs - but recognising that our stakeholders are against this proposal consider semi-locational like urban/rural, climatic zones or nodal pricing.
3.	Our network experiences demand peaks and troughs – utilisation is uneven	Reward customers for shifting demand to other times of the day or for reducing demand at peak times
4.	We are not able to make efficient use of customer's Distributed Energy Resources (DER)	<ul style="list-style-type: none"> > Reward DER customers for providing network support > Facilitate customers participation in peer-to-peer trading & virtual net metering

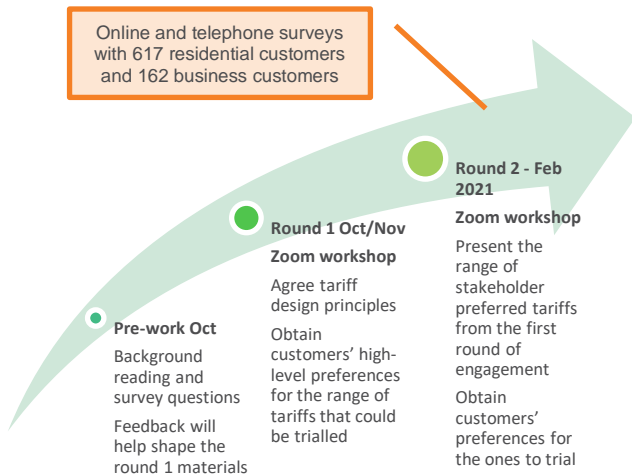


If you have any questions on Essential Energy's Tariff Trials project, please contact Justine Langdon, Regulatory Transformation Manager at Essential Energy on 0435 259 360.

Engagement approach

Woolcott Research & Engagement facilitated the Tariff Trial Design engagement program in adherence with the Research Society and International Association of Public Participation (IAP2) Core Values and Codes of Ethics and the techniques spanned the range of the IAP2 engagement spectrum.

Overview of the 'Trial Design' engagement phase



A **Tariff Advisory Panel** consisting of a sub-set of stakeholders (retailers, customer advocates, industry groups and the AER as an observer) was assembled to assist with:

- > Developing the content for the pre-workshop 'Talking Tariffs' engagement website
- > Shaping and refining the workshop agendas and associated materials
- > Interpreting customer and stakeholder feedback.

Ahead of the Round 1 workshops, small customers were directed to pre-read the material on the Essential Engagement 'Talking Tariffs' web pages. The materials queried customers as to what principles they thought were important to consider in designing tariffs, introduced the concept of an export tariff and presented the five innovative tariff concepts and gathered initial views on each one.

Round 1 of the engagement program included three Zoom workshops with 96 small customers, including observers from the Australian Energy Regulator (AER) and the Australian Energy Market Commission (AEMC). There were also eight small customer in-depth interviews. In addition, 17 one-on-one Zoom meetings were held with key stakeholders and Essential Energy's Customer Advisory Group (CAG).

The Round 2 engagement consisted of three small customer Zoom workshops (with 82 of the original 96 small customer participants) and a joint stakeholder workshop, as well as surveys from 617 residential customers and 162 small business customers.

The workshops consisted of a mix of presentations from Essential Energy staff with participants given the chance to ask questions, 'breakout' discussions facilitated by Woolcott to ensure that everyone's views were heard and captured, and polling sessions with participant's responses captured in real-time.

The objectives for each engagement phase were:

Pre-work	<ul style="list-style-type: none"> > Query customers as to what principles they thought were important to consider in designing tariffs > Introduce the concept of an export charge > Present five innovative tariff concepts and gather initial views on each one
Round 1	<ul style="list-style-type: none"> > Agree on the principles that customers and stakeholders think Essential Energy should consider when designing tariffs for the future > Gain reactions to the idea of an export charge > Gain reactions to the five innovative tariff options > Gather ideas for other tariff options
Round 2	<ul style="list-style-type: none"> > Communicate the revised pricing principles that customers and stakeholders think Essential Energy should consider when designing tariffs for the future > Gain reactions to the idea of taking an export charge to trial and three options for such a charge > Gain reactions to four innovative tariff options developed from the Round 1 feedback > Gather ideas for other tariff options

Summary of Round 1 engagement

TARIFF TRIAL DESIGN PRINCIPLES

Using feedback gathered through the 'Talking Tariffs' web pages, five tariff design principles: Fair, Simple, Affordable, Adaptable and Efficient were presented to participants in the Round 1 workshops.

Overall, there was general agreement with the principles presented and it was considered that they were on the right track and required only minor wordsmithing.

Of the five principles presented, 'Fair' was one that created much discussion as it was thought to be quite subjective and perhaps 'Equitable' was a better term. Some of the principles were also thought to be more relevant to retailer tariffs ('Simple' and 'Affordable'), whereas others were more network focussed ('Adaptable' and 'Efficient').

'Affordability' and 'Simplicity' were considered the most important principles from, a customer perspective.

Closing the loop – tariff trial design principles






Based on feedback, the main changes to the principles were:

- > The principles are shown in descending order of importance to customers and stakeholders.
- > 'Affordable' was changed to 'Avoid bill shock' to better represent what 'Affordable' means to customers in terms of changing network tariffs.
- > 'Simple' was changed to 'Easy to understand'. This factors in the role of technology in interpreting tariffs and helping customers to make behavioural changes and recognises that retailers are ultimately responsible for setting prices that are 'Simple'.

- > 'Fair' has been maintained over the use of the word 'Equitable'. Whilst 'Fair' can mean different things to different people, 'Equitable' was thought to be more confusing and less 'plain English'. The term 'suitably cost-reflective' now also sits under this principle.
- > 'Adaptable' has been changed to "Facilitate green energy" to reflect customer and stakeholder views on what 'Adaptable' means to them.
- > 'Efficient' has been changed to 'Effective' to more accurately summarise the intent of this pricing principle.

The final agreed tariff trial pricing principles are shown below.

Tariff Trial Design Principles (in order of importance to customers and stakeholders)

Principle	This means:
 AVOID BILL SHOCK	> Tariffs minimise the risk of bill shock for customers (especially vulnerable customers)
 EASY TO UNDERSTAND	> Tariffs minimise the risk of bill shock for customers (especially vulnerable customers)
 FAIR	> Customers pay their fair share of network costs (tariffs are suitably cost-reflective)
 FACILITATE GREEN ENERGY	> Tariffs accommodate changing technology, energy flows and greener customer choices
 EFFECTIVE	> Tariffs do the job - they solve network issues and do not create new ones

EXPORT CHARGES

In terms of export charges, it was explained that such a charge reflects the network investment required to accommodate exports and that the network could also pay customers for their exports, when those exports have a value that will help to lower network costs e.g., helping to manage the network in times of excessive exports or assisting with managing peak demand.

There were mixed reactions from participants on this concept. Export tariffs were a divisive topic with political and societal perceptions and expectations clashing with pricing fairness and the increasing role of two-way energy flows within the distribution network.

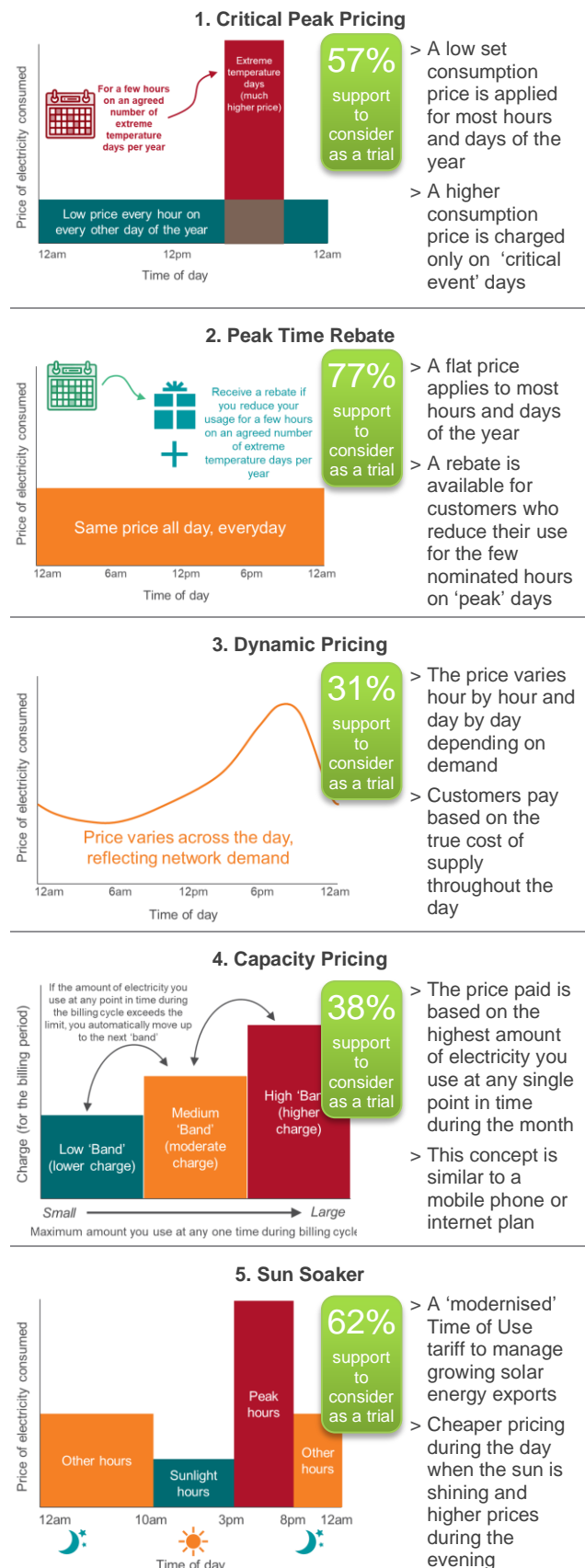
More detail on the feedback in relation to export charges can be found in the [Export charge findings from the 'Trial Design' phase](#) summary document.

Closing the loop – export charges

Given their clearly divisive nature, Essential Energy sees merit in trialling an export charge. Tariff trials will provide the opportunity to gather data to assess the true dollar and behavioural impact of an export charge on customers. This approach will allow for evidence, rather than perceptions or beliefs, to determine whether an export charge delivers a better and fairer customer outcome.

PROPOSED TARIFF OPTIONS

Five tariff options were presented in detail to participants. These concepts are shown below, along with the associated level of customer support they each received.



Most customers and stakeholders agreed that tariffs need to change and that a choice of tariffs is preferable to suit different types of customers.

There was a high level of support from participants for the Peak Time Rebate and Sun Soaker pricing. The Peak Time Rebate was appreciated for being a 'carrot' rather than 'stick' approach and the Sun Soaker was seen as being one of the easiest tariffs to implement.

There was a moderate level of support for Critical Peak Pricing, with many concerns alleviated if it was to be an 'opt-in' tariff.

There was low support for the Capacity and Dynamic Pricing options. Capacity Pricing was seen as being complex and anxiety provoking, and Dynamic Pricing was really seen as a tariff for the future.

The need for consumer education was also widely raised, and a proposition was raised as to whether simple messaging and education may provide sufficient behavioural change without the need to overly complicate network tariffs.

Closing the loop – Response to tariff options

Given the lack of support from all engagement groups to Dynamic Pricing and Capacity Pricing, neither of these tariffs was taken forward beyond Round 1 consultation.

Based on the strong support from all engagement groups, both the Critical Peak Pricing and the Sun Soaker tariff were taken forward to round 2 consultation.

Whilst Critical Peak Pricing was not as palatable a tariff to small customers and retailers, it was still generally supported by most stakeholder groups. Some stakeholders and the CAG also saw it as a good complement to the Peak Time Rebate.

On this basis, Essential Energy will take the Critical Peak Pricing through to Round 2 consultation but in an alternative form - overlaid on a Sun Soaker with just two charging windows in line with stakeholder suggestions to make the Sun Soaker tariff easier for customers to remember.

In addition, the concept of a trial based on simple messaging and education will also be included in Round 2 consultation.

Summary of Round 2 engagement

IDEA OF AN EDUCATION TRIAL

Participants were asked to what extent they agreed or disagreed that Essential Energy should include a trial to test whether simple communication and education material results in sufficient behavioural change without the need for significant changes to network tariffs.

There was overwhelming support for such a trial.

Support for a simple communication and education trial

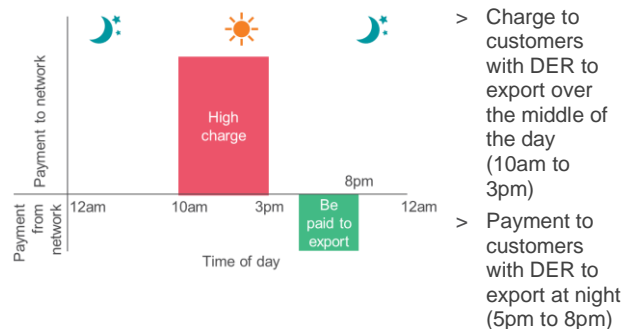
Small Customer Workshop	Residential Survey	Small Business Survey	Stakeholder Workshop
85%	74%	85%	16/17 (94%)

Small customers and stakeholders also believe that broader community education is required to teach customers about high energy use appliances and how customers can use these appliances differently to reduce their bills as well as how customers' energy use impacts network costs and customer bills.

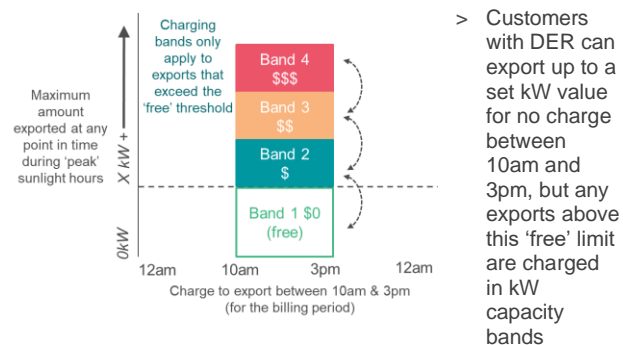
EXPORT CHARGES

In this round, three different concepts to recover the costs related to Distributed Energy Resources (DER) were presented to customers and stakeholders, along with their relative alignment (pros and cons) to the agreed tariff trial design principles and an overview of the bill impact on different types of customers.

1. Time of Use export charge



2. kW Based Capacity charge



3. Green Network Contribution



- > Not an export charge, but an alternative means to fund the network costs required to facilitate customers' DER
- > A fixed fee paid by all network users, regardless of whether they have DER.

Export charges remained a contentious and divisive topic in the Round 2 engagement. Even after the network issues were understood, many customers and stakeholders remained reluctant to endorse export charges given such a charge goes against the societal push towards renewable energy and may deter people from installing solar panels.

In general, those *without* solar were more supportive of export charges and felt that it was 'fair' for exporting customers to be paying to cover their share of network costs whilst those *with* solar were against export charges, even after it was made clear that any export charge would be only a portion of the current feed-in tariff customers receive from retailers.

The level of support across the different engagement touchpoints is shown in the following table.

Support for the proposed options to recover network costs related to exports

Charging option	Small Customer Workshop	Residential Survey ⁱ	Small Business Survey ⁱ	Stakeholder Workshop
1. Time of Use export charge	57%	51%	44%	55%
2. kW Based Capacity Charge	71%	54%	49%	65%
3. Green Network Contribution	49%	25%	17%	30%

REVISED TARIFF OPTIONS

Four tariff options based on the Round 1 feedback were also discussed with customers. These options were designed to assess whether there was a preference for a rewards-based approach (rebate) over a penalties-based approach (extreme prices during critical peaks).

Table 1: Support for the proposed tariff options

	Small Customer Workshop	Residential Survey ⁱ	Small Business Survey ⁱ	Stakeholder Workshop
1. Flat Rate + PTR* overlay	66%	56%	51%	94%
2. Flat Rate + PTR + Export Charge overlay	67%	32%	34%	66%
3. Sun Soaker	56%	43%	50%	100%
4. Two window Sun Soaker + CPP** overlay	72%	28%	23%	78%

* PTR: Peak Time Rebate

** CPP: Critical Peak Pricing

Of the four tariff options presented, the 'Flat rate + PTR overlay' had the highest level of support amongst customers and stakeholders. It was seen as being easy to understand and respond to as well as low risk to customers (a reward rather than a punishment).

The 'Sun Soaker' also had quite a good level of support across the engagement, particularly amongst small and medium businesses with 9am-5pm working hours. It was thought to be a simple tariff but not easy for some residents to take up if they are out during the day and use most electricity during the evening. It was also viewed as a bit one dimensional as it only really tackles one of the network issues.

There were mixed views regarding the other two tariff options, namely 'Flat Rate + PTR + Export Charge overlay' and 'Simplified Sun Soaker + CPP overlay', with those in

the workshops being far more receptive to these options than those in the surveys. These two options were more complex than the others presented and, therefore, likely harder for survey respondents to grasp given they did not have the benefit of Essential Energy staff presenting them or the ability to have any of their questions answered.

CLOSING THE LOOP

Based on criteria set in Essential Energy's letter to the AER advising the intention to make use of sub-threshold tariffs in the 2021-22 year, the following criteria were used to determine the tariffs to trial.

Criteria used to determine the tariffs to take to trial

	Customer & stakeholder feedback	Alignment with the tariff trial design principles	Ease of trial
Form of export charge	60%	40%	-
Tariffs to trial	45%	45%	10%

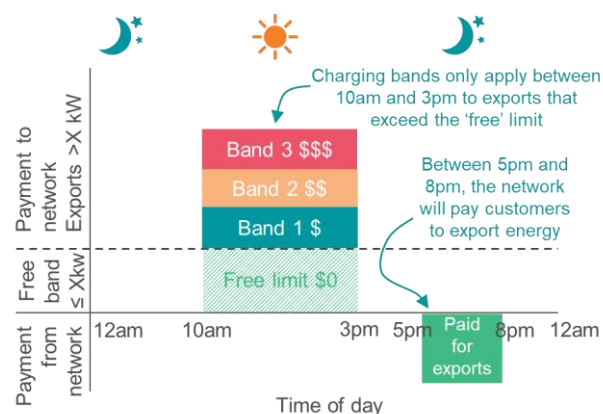
- > 60% weighting on customer and stakeholder feedback
- > 40% weighting based on alignment with the tariff trial design principles.

Export charges

Despite its divisive nature, Essential Energy still sees merit in trialling an export charge, especially given the recent draft determination from the AEMC in relation to [Access, Pricing and Incentive Arrangements for DER](#) that will allow networks to charge customers for exports.

Considering customer and stakeholder feedback and alignment to the tariff trial design principles, the proposed form of export charge to take to trial is the 'kW Based Capacity Charge' with the additional overlay of the network paying customers for exports into the network during the evening peak period (5pm to 8pm) from the 'Time of Use' export charge option.

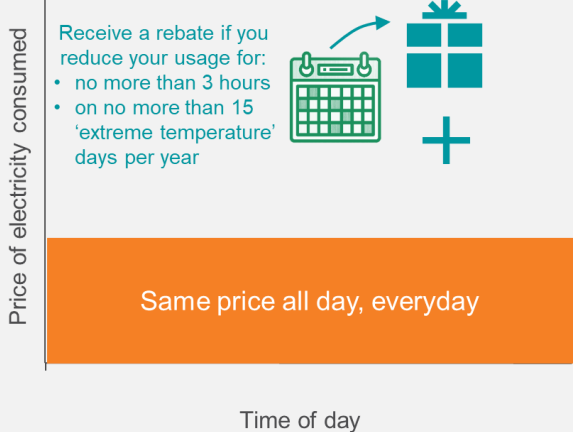
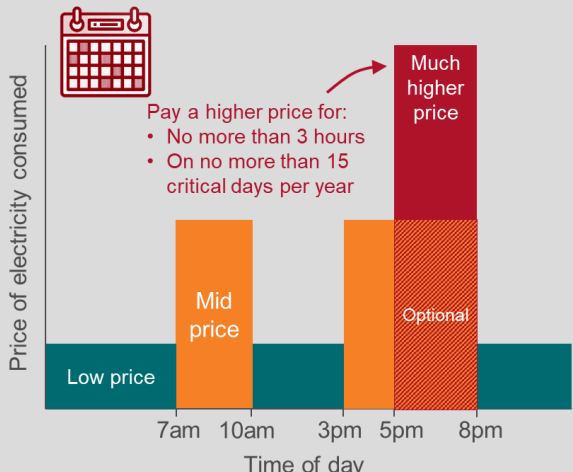
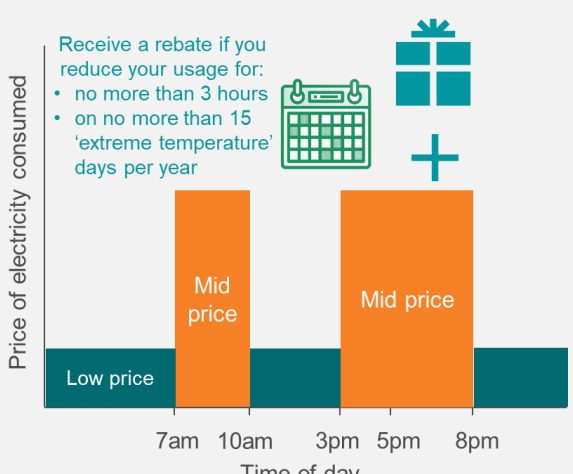
Preferred form of export charge to take to trial



Tariffs to take to trial

Recognising customer and stakeholder preferences, but also considering alignment with the tariff trial design principles and, to a lesser degree, the ease of undertaking of the trial the four proposed tariffs to be scoped for trial are shown in the following table.

The tariffs to be scoped to take to trial

Proposed Tariff	Rationale	
1. Flat rate with PTR overlay	<p>This tariff option garnered the highest level of support from customers and stakeholders. Despite having the lowest alignment with the Tariff Trial Design Principles, especially the Effective one, it is still a more cost-reflective tariff than the existing Flat Rate tariff.</p> <p>Most importantly, it will allow the customer response and bill impacts of a PTR to be separately identified. In this respect, it is acting more as a control tariff for the trials.</p> <p>This tariff is also fairly easy to implement, with only the rebate calculation requiring manual intervention.</p>	 <p>Price of electricity consumed</p> <p>Same price all day, everyday</p> <p>Time of day</p>
2. Simplified Sun Soaker + CPP (+ export charge overlay for customers with DER)	<p>This was the second most supported tariff option and it scores highly against the Tariff Trial design Principles, particularly the Effective principle as it helps with solving all four network problems.</p> <p>The visual of this concept has been adjusted since it was presented in the Round 2 engagement materials to recognise that the existing overnight off-peak period would remain, with the Sun Soaker effectively introducing a new 'middle of the day' off-peak period.</p> <p>The Sun Soaker part of this tariff is very easy to implement for a trial, though applying the CPP price would be a manual operation.</p> <p>Applying the export charge for customers with DER directly picks up on suggestions from customers and stakeholders.</p>	 <p>Price of electricity consumed</p> <p>Low price</p> <p>Mid price</p> <p>Optional</p> <p>Much higher price</p> <p>Time of day</p> <p>7am 10am 3pm 5pm 8pm</p>
3. Simplified Sun Soaker + PTR (+ export charge overlay for customers with DER)	<p>This was a suggested tariff from a number of workshop participants and picks up on stakeholder suggestions that trialling a CPP and PTR tariff together would be interesting as it is likely that different customer types will prefer one over the other.</p> <p>This tariff would score equally with the above option against the Tariff Trial design Principles and it will also help with solving all four network problems.</p> <p>The results from this trial will provide a useful comparison to the 'Simplified Sun Soaker + CPP' noted above with the data informing whether customers really do prefer 'rewards based' tariffs to 'punitive' tariffs, but also whether each tariff can actually deliver the desired level of customer response.</p> <p>Once again, the Sun Soaker part of this tariff is very easy to implement but calculating whether a rebate applies and paying the rebate would be more difficult.</p>	 <p>Price of electricity consumed</p> <p>Low price</p> <p>Mid price</p> <p>Mid price</p> <p>Time of day</p> <p>7am 10am 3pm 5pm 8pm</p>
4. Time of Use (ToU) (+ export charge overlay for customers with DER)	<p>Essential Energy stated throughout the tariff trials engagement that the preferred form of export charge would be applied to both the existing ToU tariff structure, as well as an innovative tariff option.</p> <p>Applying an export charge to an existing suitably cost-reflective network tariff will allow the customer response and bill impacts of applying an export charge to be determined.</p>	

SIMPLE MESSAGING AND EDUCATION TRIAL

The Round 2 feedback demonstrated overwhelming support for a trial based on simple messaging and education with the aim of testing whether sufficient customer response can be achieved without the need to over-complicate network tariffs.

As such, a simple messaging campaign consisting of three key messages around energy use will also be trialled. These messages are:

1. Use energy when the sun is shining (generally between 10am and 3pm)
1. Reduce energy use between 5pm and 8pm
2. Don't ever put your health at risk to reduce your electricity bill

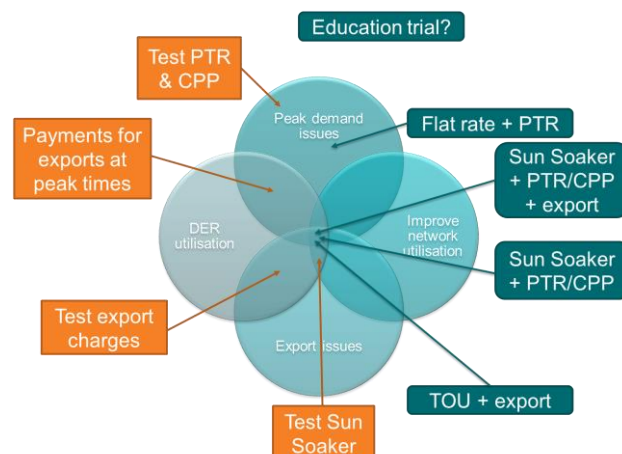
In addition, educational materials will be developed around:

- > Customers high energy use appliances, and how to use them differently to reduce costs
- > How customers can understand their energy use
- > How customers energy use impacts network costs and bills.

Such a trial will take place in set locations around the network (outside of the proposed tariff trials) and the results will be determined by comparing smart meter data prior to the trial with smart meter data after the trial to determine whether an average customer response was observable. Customer demographic and values data will also be gathered and used in assessing the results of the trial on customer types and their bills.

PROPOSED TRIALS ALIGNMENT WITH THE NETWORK PROBLEMS

Each of the proposed trials will test customer how customers respond to the price signals of the various tariff components. The figure below indicates the network problems the proposed tariff components aim to address as well as the network problems the proposed trials should help alleviate.



KEY:

● The network problems are summarised in the blue circles. The problems do overlap with each other.

■ The orange boxes and associated arrows highlight the tariff components and the various network problems they target.

■ The Teal boxes and associated arrows indicate the network problems that each should help alleviate.

NB. The impact of the Education/simple messaging trial is not yet known so it has not been aligned with any of the network problems.

Next Steps

The next phase of the project entails Essential Energy working with trial partners (retailers, university researchers and consultants) on the implementation of the trials themselves. This will entail:

- > detailed scoping and refinement of the tariff concepts and developing the associated charges
- > identification and recruitment of customers
- > locations for the trials
- > development of the trial education and simple messaging materials
- > determining the framework to measure the trials success, including the triggers that will give rise to any refinements
- > implementation of processes to manage and report on the trials through to 30 June 2024.

ⁱⁱ In assessing feedback, the results from the residential and small business surveys were given less weight than the feedback received from customers and stakeholders who participated in the workshops. This is because survey participants only had access to summarised information from the workshops and the on-line survey offered no ability to ask questions. This resulted in a much higher percentage of 'Undecided' ratings in assessing the various options, relative to those small customers who attended and participated in the workshops.

Interestingly, a similar level of indecision was experienced from the small customers who completed the pre-reading and engagement materials on the Essential Engagement 'Talking Tariffs' website, ahead of the Round 1 workshops. However, after participating in the workshops, listening to staff presentations, having the ability to ask questions and being involved in discussions and deliberations with other customers, the level of 'Undecided' ratings from these customers was markedly lower.

The findings from these different engagement streams (qualitative and quantitative) demonstrate the important role of education in 'bringing customers along on the tariff journey' - ensuring customers understand why network prices need to change and what any tariff changes mean for them cannot be overlooked and will be imperative to gaining customer support for any changes. Essential Energy will need to provide education through a range of mediums and strike the right balance between 'short and simple' and providing enough detail, such that very few customer questions remain unanswered.