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Australian Energy Regulator (AER)

Sent via email: NetworkPolicy@aer.gov.au

9 December 2022

Submission to the AER Regulatory Framework for Flexible Export Limits – Issues Paper

SolarEdge Technologies (Australia) PTY LTD (SolarEdge), Enphase Energy Australia (Enphase), Tesla Motors Australia, Pty Ltd (Tesla), sonnen Australia Pty Ltd (sonnen), Redback Technologies (Redback), SMA Australia Pty Ltd (SMA), and Fronius Australia Pty Ltd (Fronius), are jointly writing today to respond to the AER on its Flexible Exports – Draft Issues Paper.

Together Solar Edge, Enphase, Tesla, sonnen, Redback, SMA, and Fronius represent a significant portion of the Australian and global markets for residential solar and battery inverters. Collectively we have more than 85m solar inverters installed globally and more than ~400,000 residential batteries. We employ >100,000 globally and over 700 in Australia, as well as support a very large proportion of small businesses operating as approved solar retailers across the whole of Australia.

Australia is in a unique and world-leading position in respect of the current penetration of rooftop solar. Australia already has more than 15GW of installed rooftop PV, with this number expected to double by 2030 and grow to more than 53GW by 2050. At the same time, AEMO also assumes that by 2050 more than 60% of Australia's storage needs will be served by smart, orchestrated, behind the meter residential storage.

As the manufacturers and providers of most consumer energy products (CER) installed in Australia, we are firmly of the view that the best outcome for Australia – in respect of both achieving renewable energy and climate goals, and in reducing wholesale energy prices – is for this solar to be used, not curtailed. We should be taking advantage of Australia's unique position, not seeking to limit it.

We are happy to engage with the market bodies on all policies that we think are likely to achieve this goal of increasing the total rooftop solar energy used in the Australian market. From a first principles perspective the goal of flexible exports is to increase hosting capacity of NSPs to increase uptake of CER.

From an outcomes perspective, if a network service provider (NSP) designs an approach to flexible exports that opens up additional network capacity, but is ultimately so complicated that it results in increased CER costs reducing customer uptake, or lower customer uptake due to a real or perceived impact on the value gained from their CER, then we should determine that the particular design of

flexible exports has not achieved the intended policy outcome. This means that flexible exports need to be designed in a manner that are **uniform, simple to implement and with clear and transparent customer impacts.**

While we appreciate the chance to provide a response today, it is critical that the voices of original equipment manufacturers (OEMs) and installers are front and centre in respect of these complex policy changes, to ensure that the Australian CER industry continues to grow and be utilised to full effect.

We are concerned that there is an engagement, information and representation asymmetry in consultation work from the regulatory bodies, between the NSPs on the flexible export design side, and the OEM and installer side as the parties that will be responsible for enacting these complex new regulatory changes. We are concerned that if the regulatory bodies are not getting proper feedback from OEMs, resellers and installers of CER on this topic, then it is impossible to fully assess the impacts or effectiveness of particular policies.

These regulatory complexities are also being introduced at a time when Australia has significant renewable energy targets to be met. However, the global renewable energy space is also growing at an astronomical pace. Australia is at risk of becoming one of the more challenging jurisdictions in the world for CER developments, with the risk to customers being that more developers and OEMs exit the market.

Our recommendations to the AER, and the other regulatory bodies operating in the interoperability space, are to:

1. Undertake more **direct consultation on key issues facing CER OEMs** to understand market thinking and current customer sentiment. The AER and other market bodies should directly consult with representative groups of both OEMs and installers and do so separately, so these groups are afforded the opportunity to openly present industry concerns.
2. The approach taken to implementing flexible exports must be **nationally harmonised**. OEMs, installers and resellers cannot continue to manage jurisdictional discrepancies.
3. All flexible export information should be **transparent, accessible and able to be clearly articulated to customers** – i.e. you will have max. export availability for [95%] of the year. This should not be left to interpretation or require analysis of AER guidance material to provide customers with an impact. Customers need to be in a position to verify the value accessed from their CER by doing their own basic due diligence.
4. Flexible exports should enable and **support continued innovation in virtual power plants (VPPs)** and unique customer offerings, not hinder it.
5. **Flexible exports must be opt-in**, and customers should be given optionality in the level of firmness that they are willing to pay for.
6. It is critical that NSP performance is constantly monitored, and the use of CER curtailment does not become a standard alternative to investing in new network infrastructure.

More detail on these points is included in the attachment. We are happy to meet with you to discuss further – please contact Emma Fagan for more information ([redacted] or [redacted]).

Kind regards

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Detailed feedback to AER

Need for an alternative engagement approach with OEMs and installers

As noted above, it is increasingly clear from the ongoing consultation work from the Australian Energy Regulator (AER), the Energy Security Board (ESB) and the Australian Energy Market Commission (AEMC) that there is an information and representation asymmetry between network service providers (NSPs) on the flexible export design side, and the original equipment manufacturer (OEM) and installer side as the parties that will be responsible for enacting these complex new regulatory changes. This is apparent in the fact that only one OEM and no installers responded to the recent ESB interoperability consultation paper, and no installers. From a first principles perspective, the flexible export work is being undertaken to enhance NSP capability to host more CER. If the regulatory bodies are not getting proper feedback from OEMs, resellers and installers of CER on this topic, then it is impossible to assess whether these reforms are going to achieve their stated goals.

This asymmetry creates significant market risks. Each NSP in Australia has a team, if not many teams, that are dedicating time and effort into designing their own unique approach for how flexible exports might be developed. OEMs and installers are the parties that are ultimately responsible for implementing these highly complex regulatory changes, and there seems to be a clear preference at the moment to providing NSP flexibility at the expense of creating a consistent national framework.

The more flexibility that is provided to DNSPs, the more expensive, administratively onerous, and convoluted Australia becomes as a market to operate in. We need to ensure that a more collaborative approach is taken to designing and testing these solutions, with all voices being equally heard, to avoid unworkable solutions being implemented – leading to poor customer experience, industry shut-downs or significant decline in the uptake of CER.

The current, reactive approach to consultation, is leading to disengagement and providing the market bodies with a false sense of industry positioning on critical topics.

Consistency of approach and transparency of information is critical

Allocation of capacity

We agree with the AER that allocation of capacity is going to be a critical point that needs to be resolved. While we agree that this space is still emerging, allowing for varying methodologies of capacity allocation will be confusing both for customers and resellers. The more flexibility that is provided to DNSPs, the more expensive, administratively onerous, and convoluted Australia becomes as a market to operate in.

It will be important that flexible exports are structured in a clear manner that is simple for all CER resellers to articulate to their customers. Flexible exports need to be simple enough that resellers can calculate system pay-back periods/ returns (which is necessary for reseller compliance with the New Energy Tech Consumer Code (NETCC)) and that customers are able to do their own due diligence in a simple manner to confirm the value that has been described to them.

The following points are relevant for all CER customers, including those who are a part of a VPP:

- Uniformity of approach is critical. Allowing significant NSP discretion in the design and implementation of flexible exports will create jurisdictional variances and add costs.
- Optionality is important – customers should have choice in the level of export they want – including the firmness of this export, and the annual costs per year should be transparent.
- The expected export thresholds should be fixed, not within a wide range, and clearly articulated. Allowing NSPs to use AER methodologies, like the *Customer Export Curtailment Value (CECV)* will not provide enough transparency for CER resellers to provide clear guidance to customers on the economic benefits they will get from the purchase of their CER.
- Further work needs to be done to assess the additional benefits that networks received from including residential batteries in the scope of flexible exports as well as passive solar. Particularly where these systems are not part of a VPP and are set-up to provide self-consumption benefits.
- New requirements like dynamic **imports or generation** should not be included in any network connection agreement without a thorough cost benefit analysis. We support the AERs approach of starting with flexible exports before imports are considered, but CSIP-Aus already creates the mechanism to include flexible exports and allow networks like Energy Queensland to include it within their dynamic connection standard[1]. The fact that this can be done without any cost-benefit analysis on the value that a network receives from, for instance, dynamically reducing a battery charge rate, demonstrates some very clear and worrying gaps in the current regulatory framework on flexible exports.

As such we are supportive of the AER building up their existing regulatory framework to better manage how the NSPs implement flexible exports. This is considered below, both in respect of how the NSPs should be regulated, as well as how the role of the AER needs to fit into a broader regulatory framework.

Uniformity of process

It is critical that all NSPs should adhere to nationally consistent methodologies for determining network capacity and for capacity allocation. Flexible export limits should be monitored throughout the early development period of its implementation. This includes stakeholder consultation and clear transparency in the determination of limits by the DNSP and how those limits may be modified with time. Given that all NSPs are introducing flexible exports in different time scales, there is sufficient time for iteration and creating a best practice methodology that suits both industry and NSPs. Australia is too small a market to manage jurisdictional discrepancies.

[1] Refer Table 5 - https://www.ergon.com.au/__data/assets/pdf_file/0012/962778/STNW3511-Dynamic-Standard-for-LV-EG-Connections.pdf

Transparency and accessibility of information

Transparency and accessibility of information is critical – with simple information available to CER resellers, installers, OEMs, VPP developers, and most importantly customers.

The AER suggest that "*We expect that the capacity allocation methodology for flexible export limits should be documented in a DNSP's CER integration strategy as outlined in our DER Integration Expenditure guidance note*".

It is unreasonable to expect small CER resellers or installers to locate each DNSPs CER integration strategy on the AER website, analyse it and make an assumption on what the customer implications are going to be from this information. Information needs to be available in a single portal, and easily digestible in a short period of time.

Cost benefit analysis

An additional regulatory gap that currently is exists is the lack of detailed cost-benefit analysis approach requirements for the development and setting of new CER technical standards and network requirements. As has previously been covered in the responses to the Australian Energy Market Commission (AEMC) on the CER Technical Standards Consultation Paper, and to the Energy Security Board (ESB) in response to the "Interoperability for Consumer Energy Resources Directions Paper", CER technical standards can be set by a number of bodies:

- By Standards Australia and adopted into state-based legislation,
- By State Governments as a minimum requirement for voluntarily accessing state-based incentives
- By State Governments as mandatory requirements (i.e. the South Australian Smarter Homes framework).
- By NSPs as a condition of connection and embedded into connection standards.
- By the federal government as a minimum requirement of accessing STCs.
- By AEMO or the AEMC – included in the National Electricity Rules (NER)

A key theme in the majority of these processes is that most processes listed above do not require a detailed cost-benefit analysis. New standards can be introduced to solve specific network technical concerns without considering the broader costs to customers, or to the industry in respect of compliance. This is more of an issue when industry has to comply with jurisdictional variances, which pushes cost of compliance up significantly.

There are immediate steps that the AER can take to better consider the cost-benefits of new network set technical requirements.

We suggest that the AER will need to take a more holistic view to the costs of one proposal when compared to another. As more and more emphasis is put on using CER as an alternative to traditional network expenditure, the AER cannot just consider the costs to the individual NSP. There are a range of other costs that should be considered into the assessment of each individual NSPs approach to implementing flexible exports:

- The market opportunity cost (i.e. being curtailed an extra 15% of the year might result in lost market value of $10m to a VPP operator, if this is the lowest cost of generation in the market this impact needs to be accounted for).
- The costs to industry for compliance – this should include a consideration of the costs of inconsistency. Each NSP that introduces their own approach to implementing flexible exports will increase costs for all compliant OEMs and aggregators.
- The costs to individual consumers for the lack of functional use of their CER for the period that it is curtailed.

In addition, where NSPs include other forms of dynamic operation (i.e. flexible imports or flexible generation) into their connection agreements, this should be supported by a robust cost-benefit justification. The fact that CSIP-Aus enables this operationally does not provide enough of a justification to include it into a network connection standard.

Interaction with other CER policies

From a first principles perspective, the goal, and justification, of the introduction of flexible exports has always been to increase network hosting capacity for CER. It will be critical for the AER to be consistently reviewing how effective flexible exports are, in effect, in achieving this end-goal. This should also consider the complexity in design. If an NSP designs an approach to flexible exports that opens up additional network capacity but is ultimately so complicated that it results in increased CER costs reducing customer uptake, or lower customer uptake due to a real or perceived impact on the value gained from their CER, then we should determine that the particular design of flexible exports has failed in the stated policy outcomes.

There are a number of overlapping CER policy priorities that have been proposed or implemented in the last 24 – 36 months that have the same proposed goal of increasing network hosting capacity. The AER should be considering the interplay between the introduction of flexible exports and these other policies, to ensure that each proposed new policy or requirement independently creates value and is assessed in accordance with the cost-benefit principles above. The following areas need strong consideration in respect of interplay with flexible exports to ensure that they are not all solving for the same problem and adding consumer cost with no additional benefit.

<u>Curtailment of solar exports vs pricing signal</u>

A significant market reform from the last couple of years is the network access and pricing review which was initiated with the goal of optimising existing, and incentivising additional hosting capacity for CER, was the allowance of export pricing.

The AER should be considering the role that pricing signals can play as an alternative to curtailing solar exports, by providing commercial signals that incentivise the uptake of more behind the meter storage or time shifting loads like EV charging, hot-water or air conditioning.

Compliance with technical standards

Inverter compliance with the appropriate grid code settings will also play a role in improving network outcomes, and AS4777.2:2020 was designed to address a number of local NSP concerns with inverter behaviour to improve hosting capacity. Ensuring that the correct grid codes are applied will improve network outcomes and may reduce the need for curtailment.

Implications of overlapping policy priorities

The AER should be considering each NSPs plans on a holistic basis. Adapting to both flexible exports and export pricing will be years of work for installers and OEMs to change product settings, develop software and firmware capabilities, build installer training materials and work with the peak bodies to completely retrain the existing CER workforce. Similarly, compliance with Australian Standards requires at least 12 months of development, testing and product listing work. The overlapping policy priorities has a number of implications:

- The NSPs and regulatory bodies need to come up with a roadmap of changes and consider what is actually feasible for industry to comply with. This is why direct consultation is so important.
- If there are jurisdictional discrepancies with competing timelines, these will not all be able to be met. This will lead to industry shutdowns and terrible customer experience.
- If policy reforms become redundant within the space of 12-18 months (see for instance the introduction of Emergency Backstop Mechanisms) these sunk costs should be considered within the broader cost benefit analysis. More importantly the regulatory bodies should consider the complex and uncertain regulatory environment as a tax in doing business in Australia.

Regulation of NSPs

Given the rapidly changing regulatory requirements and expectations from customer owned assets in the Australian market, the AER will also need to play an enhanced regulatory role including:

- Ensuring that NSPs are subject to a clear and transparent reporting framework on flexible exports. It will be important that the level of curtailment is reported on each year both within each network and across the different networks, so that customers and industry have a point of comparison as to what is national best practice. We note that it may be challenging for the AER to compare performance of the NSPs if all NSPs are provided complete flexibility in how they implement flexible exports.
- If customers are not given a fixed export threshold, there should be a clear and transparent methodology that is published by networks as to how hosting capacity is applied across customers. As noted above, all NSP information should be readily available on a single landing page, and available in a form that is able to be easily digestible by a reasonable CER customer with no energy market experience or understanding.

- A level of equity must be maintained across customers. This will apply to a number of areas:
    - There should be a level of consistency in how customer export access is set and published.
    - Customers within a network should expect the same outcomes as other customers in the same network regardless of where they are located. Applying flexible exports is not an alternative to investing in distribution network infrastructure and customers should not have to worry about being constrained down to 1.5kW 45% of the time while their neighbours are at 10kW export 95% of the time.

Need for national technical regulator

In addition to the enhanced role of the AER, there is also the need for enhanced national technical regulator powers to be introduced to ensure that all NSPs are technically introducing flexible exports in a similar manner.

A national technical regulator should also play the role of being an adjudicating body that can address any concerns or queries that industry may have on network connection standards or Australian Standards for CER.