ARENA

DEIP DYNAMIC OPERATING ENVELOPES WORKSTREAM: CONSUMER PERSPECTIVES WORKSHOP

SUMMARY NOTES
22 OCTOBER 2020

Australian Government
Australian Renewable Energy Agency

INTRODUCTION

The Distributed Energy Integration Program (DEIP) is exploring the value that dynamic operating envelopes (DOEs) could offer to the energy transition. This workstream aims to:

- build a shared understanding of the opportunities and challenges
- share insights on approaches currently under investigation
- identify reforms that could be implemented to establish dynamic operating envelopes.

The workstream is led by a DEIP Working Group consisting of representatives from the Australian Renewable Energy Agency, Energy Security Board, Australian Energy Market Operator, Australian Energy Regulator, Australian Energy Market Commission, Australian National University and SA Power Networks.

On 22 October 2020, the Working Group brought together over 100 participants from across the industry – consumer groups, networks, research organisations, market bodies, retailers, aggregators and other organisations – to discuss consumer perspectives on DOEs.

Participants discussed what is needed to make DOEs a positive consumer experience and considered important criteria for fair and equitable DOE allocations. This document summarises those discussions.

WORKING DEFINITION

Participants provided feedback on the draft working definition for DOEs, which the Working Group incorporated into the below definition:

"Operating envelopes represent the technical limits within which customers can import and export electricity.

Dynamic operating envelopes vary import and export limits over time and location based on the available capacity of the local network or power system as a whole."

THEMATIC SUMMARY OF GROUP DISCUSSIONS

THEME 1: CAPACITY ALLOCATION PRINCIPLES

There was a strong consensus that capacity allocation should be based on clear and transparent principles that reflect consumers' broad interests in the electricity system, including economic efficiency and social equity outcomes. There were a wide range of views regarding how this could be achieved.

IDEAS WITH STRONG SUPPORT	OTHER POINTS RAISED
› Capacity allocation should be based on clear, consistent and transparent principles › Capacity allocations should (in some way) factor in the installed capacity at the customer premises › Capacity allocation principles should be simple to explain to the general public › Capacity allocation could have a fixed and a variable component (widely but not universally supported) › Allocations should be based on net exports rather than total generation	› Capacity allocations could: • be issued to aggregators • be issued to NMIs • be set individually • be set as locally uniform (e.g. across a feeder) • be set as regionally uniform (e.g. for a DNSP) • be set for each trading interval • be based on customer choice • be based on universal allocation principles • be based on negotiated allocation principles • be based on DER type (solar vs batteries) • be technology neutral • be based on customer size • be shared equally between DER and non-DER customers • be based on total generation • be based on net generation (exports) • be simple and intuitive • be prorated based on installed capacity • be based on social equity/fairness principles • apply only to active DER (e.g. batteries) • be based on the time of installation (early bird gets the worm) • be based on contribution to costs (e.g. premium tariffs / firm access right) • be based on the community value of the service being provided • maximise benefits for all consumers rather than focussing on individual winners and losers • have bespoke arrangements determined at the community level • be different for residential and C&I • be different for greenfield vs. brownfield networks (with legacy issues) • provide for customers without an internet connection (e.g. timer-based constraints) › Allocation principles could be different for import and export › Envelopes for load should be targeted at specific flexible technologies (e.g. EVs, pool pumps, water heaters) and not impact general appliance use. › Total allocations could increase for short duration services (like FCAS) where networks have an overloading capability. › Principles should be evidenced-based. For example, when making efficiency-simplicity trade-offs. › There could be a range of offerings from simple to complex rather than a one-size-fits-all approach.

THEME 2: REGULATION AND GOVERNANCE

Overall, there was a view that DOEs could have a material impact on consumer interests, especially in the longer term, and that they warranted continuing oversight by an independent regulatory body so ensure they comply with allocation principles. Network regulatory frameworks should also ensure networks are incentivised to fully allocate available capacity. Transparency and accountability were seen as important principles to build trust between customers and networks, which was generally perceived as low.

IDEAS WITH STRONG SUPPORT	OTHER POINTS RAISED
› Transparency is required in how capacity allocations are developed and how they are operating in practice › Oversight of DNSPs is required to ensure capacity is fully allocated, principles are adhered to and actual or perceived conflicts of interests are managed › Allocation principles should be set by an independent body (not the DNSP), through a consultative process.	› Frameworks for negotiating connection agreements need to be efficient and networks must negotiate in good faith › DOEs seen as an opportunity to review the connection agreement process › DOE cost recovery should be subject to tariff review process › Safeguards should be in place to protect consumers from over recovery › Impacts of the Regulated Asset Base should be minimised (to avoid bill inflation)

THEME 3: INFORMATION PROVISION

Consumers and aggregators require quality accessible information to inform their investment and operational decisions. Static operating envelopes are seen as a simple 'set and forget' system that requires little customer knowledge, whereas DOEs may require the consumer/DER owner to engage with increased complexity.

IDEAS WITH STRONG SUPPORT	OTHER POINTS RAISED
› Customers will need to know the likely nature and extent of constraints to inform their investment decisions › Connection agreements should be easy for customers to interpret › Forecasts should allow customers and aggregators to prepare for constraints	› Consumers need to understand what they can do to increase their capacity allocation › Capacity allocations should be transparent and published openly › Issues that create constraints should be publicly reported on › Customers need to understand when and why their systems are constrained and enabled › Need to carefully manage data and privacy issues

THEME 4: FAIRNESS, EQUITY AND SOCIAL LICENSE

Workshop participants raised a range of social license issues that need to be carefully considered in the design and communication of any reforms - for example, DER owner aversion to any sense of being controlled or curtailed. Consultation and clear communication in the development and implementation of DOEs were seen as critical.

IDEAS WITH STRONG SUPPORT	OTHER POINTS RAISED
› Even if DOEs are technically complex, they need to be able to be explained on clear and simple terms that people understand › The overall benefits of DOEs need to be made clear › There is a need to consider the community dynamics associated with DOEs (consumers competing for scarce network resource) and not promote a scarcity mentality › The economic and community benefits of DOE need to be clear to consumers › There should be an option to opt-out of DOEs	› New customers will see legacy customers as free riders › How will customers understand the complicated physical characteristics that give rise to capacity allocations › Judgements of fairness will take into account capacity allocations and tariffs › The perception of fairness is just as important as actual fairness › Need to consider, manage and be ready to communicate the distribution of impacts across DER and non-DER owners › The changes will require political leadership/support › Capacity allocations should be based on future state rather than being progressively reduced › There are diverse definitions of equity e.g. for some equity is everyone getting the same and for others it might be having a consistent minimum service › The community needs to understand why DOEs are better than other alternatives › Non-DER owners should be able to trade off their capacity entitlement › Whether or not network charges for non-DER customers go down will be impacted by whether network utilisation goes up or down › It will be important to work through and respond to any adverse impacts on vulnerable customers and the implications for government policies (concession arrangements etc.) › Vulnerable groups may need extra information and decision support tools › Design must avoid wealth transfers from poor to rich › Need to consider if DOEs can create a new type of vulnerable customer (the network constrained customer) › No one should be worse off › Vulnerable customers should not have to think/worry about DOEs if they don't want to › Capacity sharing could facilitate sharing of benefits with vulnerable customers

THEME 5: COST RECOVERY, PRICING AND INCENTIVES

There was a consistent view that DOEs and network tariffs should be considered as connected in terms of efficient investment and operational decisions and perceptions of fairness. There were different views as to how they should be linked.

IDEAS WITH STRONG SUPPORT	OTHER POINTS RAISED
› Network tariffs are an important complementary tool (there needs to be alignment of incentives) › DOEs should promote load shifting and self-consumption. Need to consider the broader implications for demand side participations. › Costs recovery should be cost or benefit-reflective (or a mix of both) for both generation and load › There should be incentives for legacy systems to transition to DOEs	› We need to make sure the benefits implementing DOEs outweighs the cost › Larger systems should face a higher cost, so everyone is paying proportionally to the capacity they receive › Need to avoid creating a financial barrier to adoption of DOEs › Cost recovery should target those who receive the benefit however this can be the broader market, not just for the DER owner › Recovery should be cost reflective › There may need to be different tariffs for static versus dynamic operating envelopes › There should be a mechanism for consumers to contribute to network upgrades that increase hosting capacity and gain a level of firmer access to that capacity › Costs that result in net market benefits should be recovered from load charges (not generation) › Retailers could be prevented from passing costs on to customers › Need to consider how to ensure DOEs are not used as a covert form of demand response (without compensating customers) › The market should support capacity sharing (such as peer-to-peer trading) › Costs should recovered through tariffs rather than at connection › Use of legacy hosting capacity should be free › Renters and others without the ability to access DER should not have to pay for DOE › Increased upfront costs for hardware and communications › Where constraints are high this should be reflected in the local price of energy

Further information is available at
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