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Dear John

Issues Paper: Stand-alone Power Systems Review

AusNet Services is pleased to have the opportunity to make this submission in response to the Commission's Issues Paper on the development of the regulatory framework to accommodate stand-alone power systems.

The AEMC has previously reached the conclusion that there may be situations where it would be efficient to allow Distribution Network Service Providers (DNSPs) to offer off-grid supply. The Finkel Review and the ACCC, in its retail electricity pricing inquiry, have subsequently recommended the development of the regulatory framework to allow DNSPs to develop off-grid supply arrangements where efficient.

Throughout the Commission's earlier review of this potential supply solution for existing network customers, i.e. the rule change proposal by Western Power¹, AusNet Services expressed strong support for enabling this supply option for DNSPs. When deployed to maintain services to customers in environments where service costs are high, the option has the potential to deliver improved customer outcomes by reducing network costs (and therefore customer bills) whilst maintaining service quality and reliability.

In that review AusNet Services also presented a model whereby the provision of network services via off-grid assets would allow customers to preserve the same electricity supply services as those that are conventionally grid-connected. This includes access to retail competition, service reliability and consumer protections. Our objective in developing this market solution was to avoid any concern by customers that they may face different and perceived less favourable, service terms through being transferred to a stand-alone power system. We note that the Issues Paper identifies customer protections as a key aspect of the framework to be resolved, and identifies the AusNet Services proposal as a potential solution. In our view, such an approach will facilitate customer acceptance and enhance the likelihood that off-grid solutions can be deployed by DNSPs.

COAG Energy Council's prioritisation within the terms of reference for the review, for priority to be given to the DNSP led service offering, reflects recognition that opportunities to improve the efficiency of distribution services are being prevented. We support the priority placed on this stream for the review and the review should consider how potential framework arrangements may best lead to a timely commencement.

¹ Alternatives to Grid-Supplied Network Services, AEMC Reference ERC0215

Our attached submission addresses the broader range of matters covered in the Issues Paper.

We look forward to engaging further with the Commission in the course of the review. Please do not hesitate to contact us if we can assist with any inquiries related to this submission.

Yours sincerely,



Kelvin Gebert
Manager Regulatory Frameworks

AusNet Service Submission: Review of the Regulatory Frameworks for Stand-alone Power Systems

1 Introduction

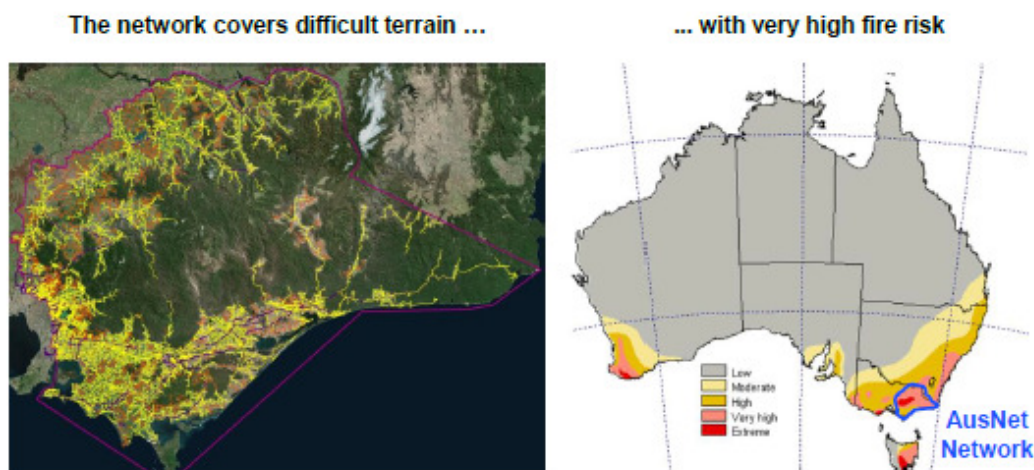
The ability for DNSPs to adopt stand-alone power systems in addition to grid-connected network services could enable significant cost savings, in those locations where customer density is very low, and in areas of high bushfire risk. In Victoria, DNSPs have obligations to replace bare-wire powerlines with insulated powerlines within prescribed geographical areas to mitigate bushfire risk. The cost savings from transferring customers to stand-alone power systems, where this is efficient for the on-going provision of distribution services, will benefit all of the DNSPs customers.

The following sections provides further context on how stand-alone power systems could find application in serving customers in areas of AusNet Services network. This is in large part an extract from our July 2017 submission into the consultation phase of the Western Power Rule Change process.

1.1 Characteristics of AusNet Services Network

AusNet Services' distribution network extends from the northern and eastern suburbs of Melbourne eastward to Mallacoota, and north to the Murray River, covering heavily forested and mountainous areas, as well as the low lying and coastal regions of Gippsland (as shown in Figure 1). Over 90 per cent of AusNet Services' network (by line length km) is located in rural areas. More than 80 per cent of this is located in high bushfire risk areas (HBRA).²

Figure 1: AusNet Services' network



In this context, there are circumstances in which it is likely that an off-grid system could have a lower lifecycle cost than maintaining or replacing grid assets. These circumstances include:

- providing a network service to existing edge of grid customers in remote areas; and

² As determined by the Country Fire Authority in accordance with Section 80 of the Electricity Safety Act 1998 which require the assigning of a fire hazard rating for an area of 'high' or 'low'.

- customers in bushfire areas, including those defined in the Victorian Electricity Safety (Bushfire Mitigation) Amendment Regulations 2016³.

AusNet Services obligations in relation to bushfire mitigation areas are explained in further detail below.

1.2 Victorian Powerline Bushfire Safety Program

AusNet Services has key responsibilities for delivering the Victorian Government's Powerline Bushfire Safety Program aimed at reducing the risk of Victorian powerlines causing bushfires. The objective and elements of the program are described below.

Victorian Powerline Bushfire Safety Program

The Victorian Powerline Bushfire Safety Program consists of 5 projects:

- Powerline Replacement Fund (\$200 million): this program contributes funds to replace powerlines in the highest risk bushfire areas with insulated overhead, underground powerlines or new conductor technologies. Under this program Victorian distributors are replacing Single Wire Earth Return (SWER) powerlines and 22kV powerlines with insulated and underground cabling, and other technologies. The program timeframe was set for mid-2019 completion.

AusNet Services had been hopeful that the Western Power Rule Change process may have enabled adoption of stand-alone power systems within this program, however this has not been possible. There is however an on-going obligation to continue replacement of bare overhead powerlines within geographical areas that have been prescribed within regulations. The Powerline Replacement Fund has committed funds to initiate replacement of powerlines within a small proportion of these areas.

- Network Assets Project (\$500 million): requires distribution businesses including AusNet Services to install new network technologies to better control faults such as remotely controlled Automatic Circuit Re-closers and Rapid Earth Fault Current Limiters (REFCLs).
- Network Operations Project: rules for each bushfire season that informs how electricity distributors control their networks on Total Fire Ban days.
- Research and Development Project (\$10 million): allocates funds to priority research and development such as bushfire mapping and modelling and improved powerline technology.
- Local Infrastructure Assistance Fund (\$40 million): provides for back-up generators to be installed in residential care facilities throughout rural and regional Victoria.

As part of the response to the Victorian Bushfires Royal Commission, the Electricity Safety (Bushfire Mitigation) Regulations 2013 were also amended to specify acceptable powerline construction technology for the highest fire risk areas. The provisions require any new or replacement powerlines (4 spans or more) within identified geographical areas (the *electric line construction area*), to be constructed with insulated technology. The two options currently available (in the absence of ability to adopt stand-alone power systems) are using covered conductor on overhead powerlines or undergrounding of the powerlines.

1600km route length of AusNet Services high voltage powerlines are located in the *electric line construction area* defined in the Victorian Electricity Safety (Bushfire Mitigation) Amendment Regulations 2016. This accounts for approximately 5% of AusNet Services total high voltage powerlines.

³ Under the Regulation, the defined areas are referred to as an *electric line construction area*.

AusNet Services is also subject to the Victorian f-factor Incentive Scheme which has established reporting obligations and economic incentives to improve bushfire safety associated with the operation of the network and to optimise new enhanced protection technology.

The remainder of our submission addresses the considerations outlined in the Commission's Issues Paper.

2 Transition to Off-Grid Supply

Jurisdictional opt-in provisions

The main drivers for deployment of standalone power systems may differ across the jurisdictions. We have outlined in the sections above that in Victoria, bushfire safety is a key driver. Efficient provision of electricity services to remote communities may be the predominant driver in some other jurisdictions. The different drivers, and their importance, may reflect in a different sense of urgency for adoption amongst the jurisdictions, and hence for aligning their related instruments necessary to adopt a national framework for stand-alone power systems.

The above factors are benefits from allowing DNSPs to adopt stand-alone power systems, which it is expected would be broadly supported. A key consideration for jurisdictions then, is the customer protections framework that would accompany this service option for DNSPs. We do not think that a parallel customer protection framework, or parallel service level obligations and incentives, are needed for stand-alone power systems which are DNSP led. AusNet Services has proposed a model which integrates stand-alone power systems as standard control services and seamlessly into the NEM market framework. This is set out in detail later in our submission.

If an approach such as proposed by AusNet Services is viable, then there should be very few material issues to be resolved through jurisdictional instruments. However, the circumstances may be entirely different for non-DNSP led off-grid solutions, both for the national framework and jurisdictional provisions. We therefore recommend that the Commission approach the development of the framework in the first instance, as applicable to a DNSP led service specifically, which would be consistent with the prioritisation set by the COAG Energy Council.

For the DNSP led scenario then, there should be no need for a jurisdictional opt-in. This may mean that DNSPs are constrained from adopting stand-alone power systems until any related matters in jurisdictional instruments are resolved, however achieving this in timely manner is in the mutual interests of the DNSP jurisdiction to progress.

Efficiency pre-condition

The economic regulatory framework has a joined up and comprehensive set of disciplines and incentives to lead DNSPs to the most efficient solution. These include the Regulatory Investment Test (the RIT-D). In assessing the merit of adopting a stand-alone power system, the DNSP would include the options of continuing with a grid connected supply, transferring some customers to an off-grid supply, potentially a hybrid solution where the network is switched out on critical fire risk days, and any other solutions that may be identified either by the DNSP or stakeholders.

We envisage that in a DNSP led stand-alone power system framework, the DNSP would be the proponent of the stand-alone power supply option as well as the traditional network solution. This is because the DNSP itself has identified this option as its most effective and efficient way to serve some customers, typically at fringe of grid where the cost to serve is high, relative to the average cost to serve, and thereby reduce the cost base for all customers. In conducting a RIT-D we envisage that the DNSP would itself identify the cost for this system to achieve the service reliability required for comparison between the options.

The function of the RIT-D is to explore the options, including those put forward by stakeholders. There is the possibility that providers could propose direct solutions to customers, or service solutions to the DNSP. Providers may also want to offer to the DNSP the stand-alone power system option proposed by the DNSP, however this would be the subject of implementation considerations subsequent to the determination of preferable solution via the RIT-D.

There are likely to be situations where the DNSP would identify significant benefit, i.e. lower investment cost, in transferring a single customer to a stand-alone power system. In this circumstance it is likely that the RIT-D threshold of \$6M would not be reached (unless a program of line replacement works exceeds this threshold, when the RIT-D would be invoked in any case), and then the broader incentives in the economic regulatory framework, which seek to advance efficiency in the DNSPs provision of services, would drive the DNSP to choose the most efficient solution, i.e. potentially a stand-alone power system in lieu of maintaining traditional network. The prospect of an additional efficiency test specifically for stand-alone power system investment (explored in the Issues Paper) would be inconsistent with the incentive arrangements more generally applicable to DNSP provision of services, and we think it would be unnecessary.

Customer consent provisions

As noted in the Issues Paper, while transition to a stand-alone power system model of supply may make sense from a market-wide economic perspective, customers may value their connection to the grid for other reasons. An integration model as proposed by AusNet Services would minimise the scope of other reasons that customers may have for preferring a traditional supply format, and facilitating acceptance and potentially even preference for the stand-alone power system solution.

Since the DNSP will be responsible for providing this utility standard service for a long time to come, the DNSP has every reason to engage with customers and seek their support on the service format. In the case of an individual power system for a customer, the facility will likely be located on the customer's land. Our conclusion is that engagement between DNSP and customers will occur without explicit obligations. However, if the Commission and customers see that engagement obligations would aid the process, and provide reassurance, then we would support further consideration.

Even so, AusNet Services considers that transfer should be subject to an acceptance criterion. A practical option would be to apply a majority consent model discussed in the Issues Paper, which applies for the formation of embedded networks. In the case of an embedded network, the customer faces a range of service changes, which would not be the case for the DNSP led model under discussion here. In fact no change in the customer's services is envisaged. We understand that the AER's exemption framework for establishing embedded networks actually applies a two thirds majority consent, and this should be the maximum acceptance level consideration for DNSP led stand-alone power systems.

Individual negotiations would be necessary with customers however, to agree the size of the energy system required to meet the needs of the customer. Provisions may be needed to ensure that the DNSP can deploy a power system aligned to the actual and reasonable energy usage of the customer.

Regulatory oversight role

As discussed in the previous section, it is unlikely that a stand-alone power system could be implemented without close customer engagement, and support. In addition, where the proposal involves the establishment of a micro-grid it will soon reach the RIT-D threshold, and so a high level of transparency of the proposal will arise. It can be reasonably expected that if a DNSP is conducting a RIT-D for a specific proposal, then the effected customers would be engaged.

It is accordingly not clear that there is a need for a formal regulatory oversight role in the establishment of a system. As discussed in the Issues Paper, the AER is already responsible for monitoring, investigating and enforcing compliance with various aspects of the energy laws and rules. Conducting reviews using these powers would be an appropriate way for the AER to gain confidence in the DNSPs processes and actual experience in establishing stand-alone power systems.

Grid connection precondition

The objective of a DNSP led off-grid solution, as we see it, is to improve the efficiency of maintaining the distribution services it provides, including through providing effective solutions in response to bushfire risk mitigation drivers. The focus is accordingly on maintaining service obligations to the existing customer base. As discussed previously and in the Commission's Issues Paper, this will reduce distribution service costs to all customers. It should be recognised however, that the stand-alone power system itself will be utility standard, capable of delivering to the DNSPs service obligations, and likely a more expensive off-grid solution than energy users would consider a viable solution if they themselves had to fund the full cost of the system.

Accordingly, if new connections are able to access the arrangements then there is potential for increasing cross-subsidisation to develop. Theoretically a property owner located within the DNSPs region, but far from an existing network, could seek access to this service. Currently this energy user would deploy its own power system, or could pay for extension of the distribution network. This energy user clearly has commercial options to serve its energy needs. Having access to the DNSP off-grid service would increase service cross-subsidisation, and this does not appear to be a desirable way forward.

In the circumstances of an isolated community supply however, the situation is different. Customers connecting within the bounds of the community should be granted access to the supply, as this will drive down the average customer cost invested in that system. Our conclusion is that the distinction between the two circumstances is clear, and could form the basis for connection rights to established DNSP operated stand-alone power systems.

The DNSP led off-grid solution has the potential to support supply to remote locations even if the DNSP does not provide the service. The technology developed for DNSP deployment, could be captured in commercial service solutions, advancing the competitive offering of services. Subsidies on the cost to remote customers for this service may be the subject of separate government support schemes.

Right of reconnection

Once the connections to the grid have been broken, restoration could be expensive. The DNSP would have de-energised and likely removed unused network elements to reduce maintenance costs and improve safety. In Victoria, and depending on the region, replacement line may require covered conductor power line construction.

Reconnection to the grid may therefore not be an entirely practical option for the customer. Further, the DNSP would be subject to the service standards for supply (refer section in our submission on 'Efficiency pre-condition'), and therefore has the obligation to provide a satisfactory level of service. Provided service levels are met, customers should not be able to request reconnection at the expense of the DNSP.

The question may therefore be one which the DNSP itself has to address in the fullness of time, rather than the customer, i.e. whether it (the DNSP) is in fact able to continue to provide the desired service level at efficient cost, compared to reconnection.

3 Allocation of Roles and Responsibilities

Defining the stand-alone power system

There are already various models for stand-alone power systems in operation in NEM states. These typically do not interact with the NEM framework. AusNet Services operates one such stand-alone power system, serving the Mt Baw Baw Alpine Resort.

This service is currently subject to a waiver from certain DNSP ring-fencing obligations, and which will expire in 2020. AusNet Services (the DNSP entity) operates the resort power supply, and hence generates, distributes and sells electricity to customers on the mountain. Other than by virtue of the ring-fencing waiver, there is no relationship with the NEM. However the service is subject to jurisdictional electrical safety obligations, overseen by Energy Safe Victoria.

The arrangements at Mt Baw Baw are well documented in AusNet Services [ring-fencing waiver application to the Australian Energy Regulator](#). In summary, The Victorian Alpine Resorts Commission holds a Victorian licencing exemption for electricity supply services, and has a contract with AusNet Services to operate the power system. AusNet Services accountabilities for electricity supply are accordingly subject to this contract.

We do not envisage that all existing stand-alone power systems should be subject to the NEM framework (refer section of our submission on 'Grid connection precondition'). There would be significant work required to determine if this is in the interests of customers. Framework arrangements for future 3rd party stand-alone power systems will be the subject of the Commission's subsequent Priority 2 review.

However, for DNSP led initiatives, which involve existing NEM connections and customers currently subject to consistent regulatory arrangements (a grid connection precondition), a single solution for the NEM should be established. This would minimise confusion for customers and market participants, would enable comparative regulatory oversight, and enable coordinated improvements to the framework over time.

DNSP ownership of a vertically integrated solution

It would be impractical for a DNSP led solution not to include the option of the DNSP owning the assets. There are a number of reasons for this, but in particular, the power supply systems which a DNSP may require to meet the necessary service standards are unlikely to be available 'off the shelf', at least until experience has been gained. Systems will be customised to the DNSPs specification for its customers. Support will be required for a long period. The DNSP would require a high level of confidence in the longevity, capability and resolve of a supplier to maintain the DNSP and regulatory regime set service standards. Suppliers would inevitably need to install the systems and attend to maintenance activities in remote locations.

The incentive-based regulatory framework that applies to the broader set of DNSP activities should be applied. The DNSPs objective in adopting a stand-alone power supply is for the purposes of efficiency improvement. The thought that the DNSP would then not take the efficient service sourcing solution seems somewhat irrational. DNSPs, certainly AusNet Services, have strategies to obtain network support services from a variety of market participants and customers. A contestability test does not seem applicable to the circumstances.

Our conclusion is that the framework should provide for the DNSP to make effective, efficient choices.

Role of the distributor

A NEM model for DNSP led stand-alone power systems would be seamlessly integrated in the national framework if the DNSP's role remains consistent with its current functions. This would be preferable to distinguishing the functions of a DNSP for this specific service, which would lead to further complexities. Neither is reliance on ring-fencing waivers an attractive option, as this indicates a misfit of functions, and waivers do not have permanence.

A seamless integration relies on the market participant roles being retained, and we believe this can be readily achieved.

In the approach proposed by AusNet Services, the DNSP would engage an independent party to sell electricity into the market. This would be similar to the existing NEM role of an 'Intermediary', and would isolate the DNSP from the activity of generation. At the retail end of the supply chain, customers would retain their right to choose their retailer.

The electricity supply to the customer would be metered in the model envisaged by AusNet Services. Stand-alone power system assets would accordingly be 'in front of' the meter, and DNSP ownership (if this is the effective and efficient decision of the DNSP) would be consistent with the Contestability of Energy Services rule change decision by the Commission. However, consideration of the circumstances that the framework developed does not include market integration suggests that the concepts from that rule change may not be relevant. The markets that Distributed Energy Resources (DER) providers can access in the NEM will not (at least initially) exist in a DNSP led stand-alone power system. The opportunities for commercial services would become apparent with experience, but this should not constrain effective implementation of the approach at the outset.

Provision of retail services

In AusNet Services view an approach which retains the features, rights and protections of the NEM relevant to the customer, will facilitate customer acceptance of transfer to a stand-alone power system. This includes the role of the retailer.

In the Issues Paper, the Commission describes the model proposed by AusNet Services into the 'Alternatives to Grid Connected Distribution Services' rule change process. We think the approach is an elegant solution, and integrates seamlessly into the NEM framework. A number of our responses in this submission are based on the attributes of a model such as this being achieved.

An overview of the model proposed by AusNet Services is provided in the appendix to this submission.

Other roles/responsibilities specific to stand-alone power system provision

In the Issues Paper, the Commission identifies a number of stakeholders who would have an interest in the establishment of a stand-alone power system. AusNet Services agrees that there are many stakeholders, and these stakeholders, and their considerations would form inputs to the planning and decision-making processes. Communication of DNSPs plans in advance, will facilitate engagement. The Annual Planning Reports may be the appropriate resource to gather together this information.

Real time operational management of the stand-alone power system, for the microgrid scenario in particular, will require coordination of various energy resources, including those owned by customers, to ensure all resources act to deliver the power system performance requirements. This would be very similar to the operational regime for a trial carried out by AusNet Services in a suburban street in the Melbourne suburb of Mooroolbark in 2017 – 2018. In that trial 14 customers were enlisted to support the integration their DER into a coordinated network

operation which could feasibly operate independent of the rest of the grid for a period. The trial demonstrated this operating mode successfully for in excess of 22hrs. This was achieved with minimal network-side infrastructure, noting that a fully stand-alone power system solution would require corresponding infrastructure uplift. The approach involved the deployment of a local DER-based network stabiliser, distributed customer DER controls, and a network management platform, and accordingly demonstrated some of the features of a Distribution System Operator (DSO) function.

The DSO role in the NEM will become more necessary as penetration of DER increases. Work is proceeding, in particular through the ENA – AEMO Open Energy Networks initiative, to identify the preferred allocation of responsibilities to deliver the most effective integration of DER into the power system. For stand-alone power systems this function becomes immediately triggered. Potentially the process arising from the Open Energy Networks initiative will be applicable for allocating responsibilities in stand-alone power systems, however, whether a division of responsibilities is effective in this case would require consideration.

Treatment of existing market participants

Where DER is deployed by market participants in the fringe areas of the network where DNSP led disconnection is likely it would also be likely that the resources would be serving the local community, and disconnection would not preclude this service being provided into the stand-alone power system. The economic assessment process (RIT-D or other DNSP assessment) would identify the implications for such service providers and treatment in the benefits test.

Roles of AEMO and the AER

There do not appear to be any significant oversight gaps that need to be addressed. Both organisations would maintain their current oversight functions of distribution systems, to include the DNSP led stand-alone power systems. Depending on the prescription set out for the framework in the law and rules, a guideline prepared by the AER may provide further clarity to facilitate DNSP processes to assess stand-alone power systems. However, there does not appear to be any reason for the AER to have a primary role in a project assessment.

3. Application of Consumer Protections

Retail price protections

As has been discussed in this submission, AusNet Services considers that DNSP led stand-alone power systems would be most seamlessly integrated into the regulatory framework if existing retailing arrangements and protections applying to grid-connected customers are retained. The model we have proposed is based on these arrangements being preserved.

However, we acknowledge that this may require jurisdictional instruments to also be amended if this desired outcome is to be assured. We look forward to exploring what may be required together with the Victorian Department of Environment, Land, Water and Planning once the Commission's direction is clearer. We would support existing jurisdictional electricity service consumer protections applying equally to transitioned customers in a DNSP led model.

As noted earlier in this submission, we believe DNSPs have every incentive to engage with their jurisdictions to enable implementation of a national framework.

Other consumer protections

As discussed in the preceding section and in other sections of this submission, AusNet Services agrees that energy specific protections should be retained for customers being transitioned to stand-alone power systems. The model we have proposed is intended to achieve this outcome.

We do not see a need for further protections specific to SAPS customers. In our view, there is a strong need for DNSP engagement with affected customers, as without their support the initiative will not get traction. The benefits would be evident in the proposal, to obtain such support. Experience of DNSPs, including that already being gained by Western Power in Western Australia, should become influential in providing confidence to customers in the performance of utility standard stand-alone power systems. DNSPs would have reporting obligations on the performance of their power systems, for example, in Annual Planning Reports.

Reliability, security and quality of supply

In principle, the service level should be equivalent to that of the grid-connected option. Presenting an inferior supply option to customers would very likely be an unrewarding proposition. Currently, the regulatory regime does not prescribe specific customer reliability levels, and DNSPs set network wide targets, and targets for the different feeder classifications, in conjunction with the operation of the AER's Service Target Performance Incentive Scheme.

An option to apply for the design performance standard for stand-alone power systems would be to base this on the target performance for the network prevailing at the time. This could then also apply as the benchmark for performance reporting.

As stated in the cover letter to this submission, we look forward to engaging further with the Commission in the course of the review. Please do not hesitate to contact us if we can assist with any inquiries related to this submission.

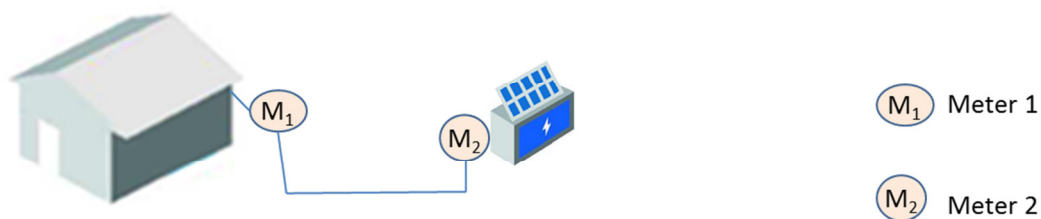
Attachment:**Potential Retail Market Arrangement for DNSP Led Stand-alone Power Systems****Scenario**

The DNSP provides a stand-alone energy system, such as a stand-alone power supply (SAPS), after determining it is the most efficient option to supply a customer or customers in a remote on edge of grid area.

Objective

The objective is to preserve the benefits and protections enjoyed by the customers, via being a customer of the National Electricity Market (NEM)

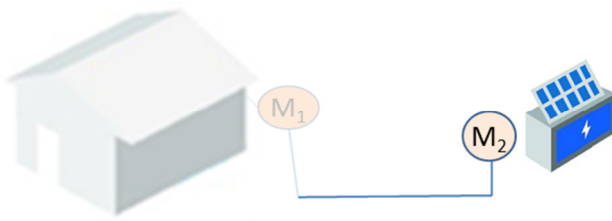
SAPS in a DNSP led scenario



High level Summary

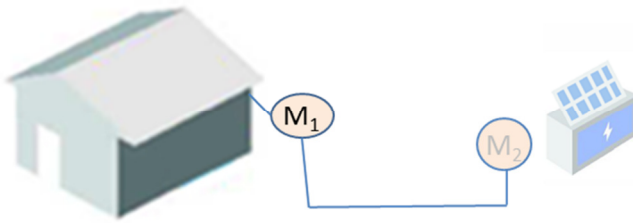
1. SAPS generated energy is metered generation
 - a National Metering Identifier (NMI) is established to register and account for the energy flowing into the NEM.
2. The customer's consumption would also be metered (this is identical to the generation) and form the basis for the customer's retail billing.
3. The DNSP's obligations and customers' rights would not change i.e.:
 - the customer receives the same reliability standards, access to retailer of choice and customer protections as other customers in the network

Generation



1. Generator revenue from NEM settlement offsetting the higher costs of operating the SAPS.
2. The SAPS generator is registered in the Market Settlements and Transfer System (MSATS);
 - the DNSP would procure the revenue collection service from a third party (competitive market participant);
 - the Market Participant would administer and receive revenue from the energy generated;
 - the Market Participant would then compensate the DNSP for the value of the energy (less their fee for administering the energy sale); and
 - any revenues received by the DNSP for the energy would be netted out of regulated revenue as negative opex.
3. Australian Energy Market Operator (AEMO) manages the market settlement process and makes payments to the Market Participant for the generation.
 - Paying the regional spot price for each measured unit of energy in 30 minute blocks; and
 - SAPS generation is not dispatched by AEMO.

Consumption and Regulation



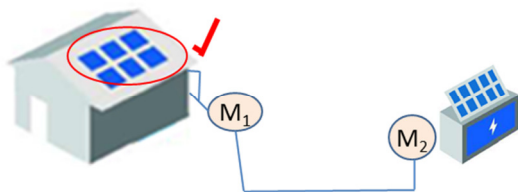
4. Consumer protections and reliability of supply still apply:
 - outage notifications;
 - GSL payments;
 - life support registration; and
 - retail billing conditions
5. Pricing
 - Customers have the same easy access to Retailer of Choice as any other customer
 - The sites supplied by SAPS generation would have any Network Tariff or Retail Tariff available to residential customers.
6. Asset classification and regulatory treatment
 - RAPS assets would be included in the RAB and the costs of operating and maintaining the generation assets included in DNSP opex - all funded by regulated revenues (Network Tariff); and
 - classified to be providing distribution services (e.g. Western Power rule change proposal)

Metering



7. Metering:
 - Generation and consumption must be metered
 - A logical meter or a second physical meter is required.
 - Contestable Metering arrangements can still apply
8. Assign specific Transmission Node Identifier (TNI), Marginal Loss Factors (MLFs) and Distribution Loss Factors (DLFs) for SAPS
 - The SAPS generator provided would be assigned the same DLF and MLF as the consumption; and
 - does not appear to be different to any other site physically connected to the distribution system;
 - Except AEMO can identify them by their TNI indicating a SAPS within a particular network area.

Alterations and Introduction of New Sites



9. Consumer installs additional micro embedded generation:
 - Customers may still deploy additional solar micro embedded generation behind the meter; and
 - SAPS equipment would need to be robust enough to manage this scenario.
10. Increased load
 - SAPS designed to meet customer agreed demand.
 - Distributor to provide customer cost to upgrade SAPS for increased demand.
11. New customer connections
 - Where the cost to customer for a grid connection is high and a competitively provided SAPS could be the economic solution

Comparison with conventional network arrangements

