



Demand Side Engagement

Essential Energy Strategy
December 2016



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1 Objective

The objective of Essential Energy's Demand Side Engagement Strategy is to identify non-network solutions that offer credible alternatives to network augmentation, leading to more efficient network investment and lower costs for customers.

2 Introduction

2.1 Demand side management

When demand for electricity approaches the capacity of network infrastructure at peak times, network service providers must act to maintain adequate electricity supply to customers. This can be achieved by increasing the network capacity (supply side management), reducing the peak electricity demand on the network (demand side management) or through a combination of supply and demand side management.

Demand side management is an important part of efficient and sustainable network operations – it can involve either the moderation of customer electricity demand at peak times or the supply of electricity from generators connected at customer's premises or to the distribution network. Effective use of demand side management can reduce costs associated with managing the network and result in lower electricity bills.

There are a range of demand side solutions available for use on electricity networks, including:

- > Shifting appliance or equipment use from peak periods to non-peak periods (for example off peak hot water)
- > Converting the appliance energy source from electricity to an alternative (for example switching from electric to gas heating)
- > Use of more efficient appliances (for example replacing lights with more efficient, lower wattage options)
- > Operating appliances at lower power demand for short periods (for example air conditioner load control)
- > Operation of embedded generators
- > Power factor correction.

When a review of a part of the network is initiated, Essential Energy completes a review of options that include both reducing demand and increasing capacity, with a goal of finding the lowest cost solution that meets the required reliability standards. To ensure a thorough investigation, Essential Energy consults with the community about network requirements and potential demand side options available.

Section 3 of this document outlines Essential Energy's demand side management process, and Section 4 provides additional detail on the community consultation phase and the information required by Essential Energy to properly assess a proposal.

Section 5 provides specific information on how customers may connect embedded generation to Essential Energy's electricity network.

2.2 Peak demand

Peak electricity demand events occur when demand for electricity is significantly higher than average. These events are relatively rare, occurring only 20-40 hours in a year or less than 0.5 per cent of the time (for further detail the listed within the Distribution Annual Planning Report provides the hours above 95% of peak by Zone Substation). As the energy required to heat or cool can be a significant part of home or business energy use, peak events are typically during periods when the weather is very hot or very cold. Peak events that occur in colder weather are called winter peak events, and those that occur in hot weather are called summer peak events.

Winter peak events generally occur on the coldest working weekdays in winter and can be from as early as 5.00pm to as late as 10.00pm. A winter peak event is often primarily driven by the demand for heating of residential homes. The timing and duration of a peak event is a function of the mix of customers served by the network infrastructure.

Summer peak events typically occur on the hottest working weekdays in summer and can happen from as early as 2.00pm to as late as 8.00pm when load from residential customers is influential. Similar to the winter peak, a summer peak event is often driven by the demand for cooling of residential homes.

Figure 1 below displays the correlation between summer peak demand and temperature for a particular zone substation in the Essential Energy distribution network.

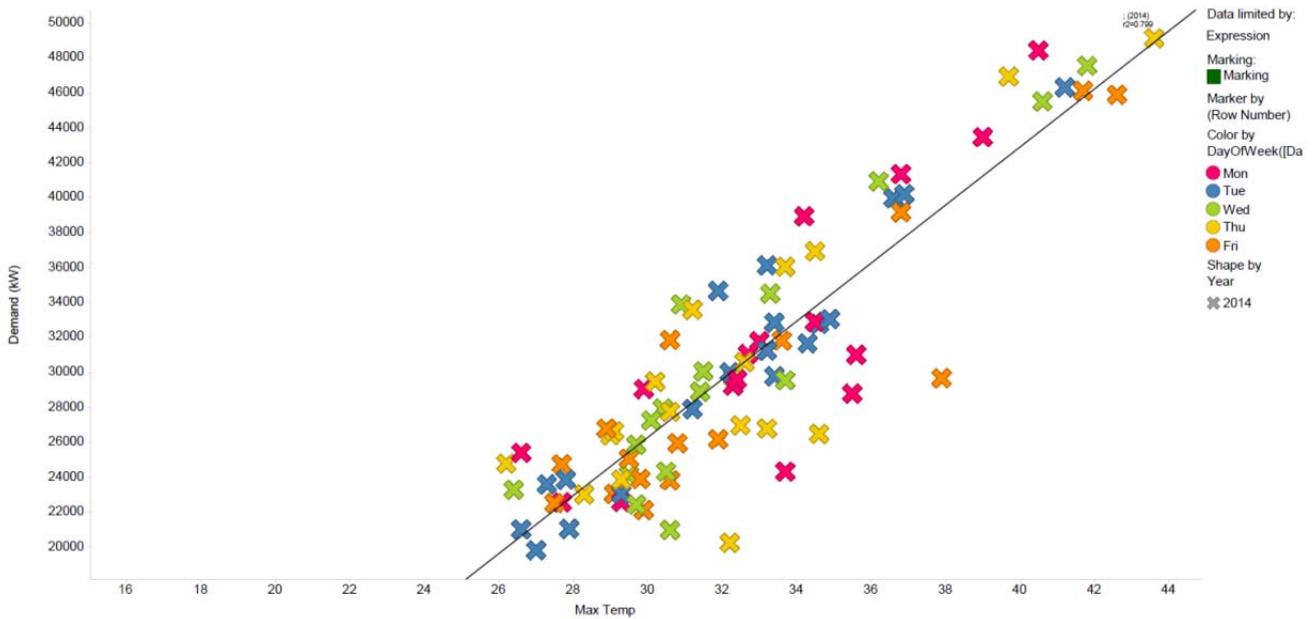


Figure 1 – Essential Energy Zone Substation correlation between demand and temperature

The peak demand event shown in Figure 1 occurred at approximately 6pm daylight saving time as shown in Figure 2.

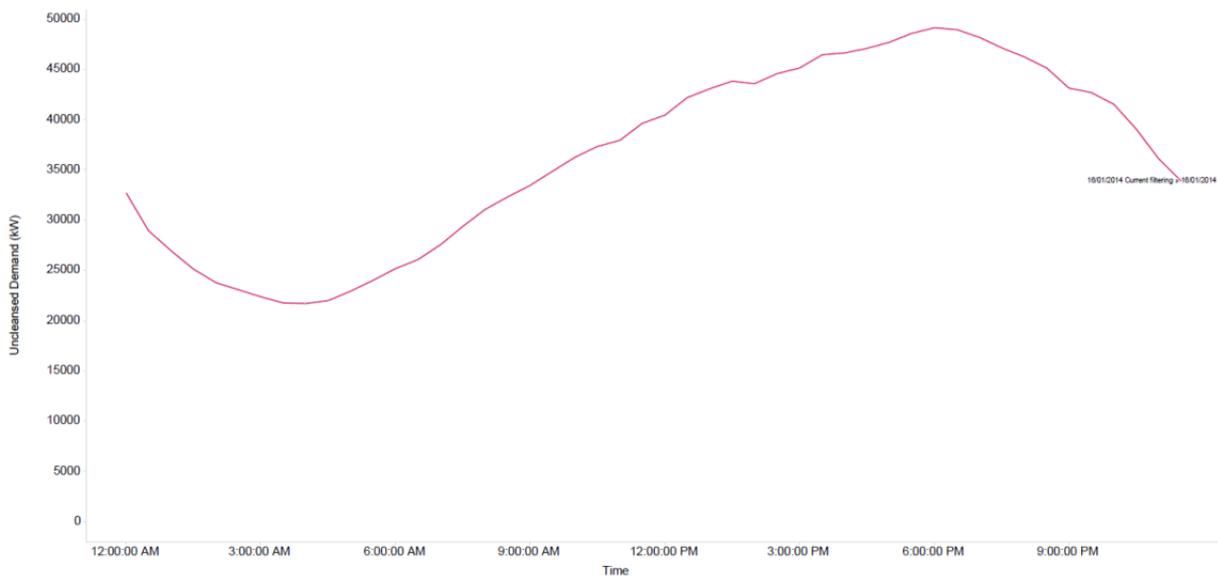


Figure 2 – Example time of peak demand

In the past, Essential Energy’s distribution network was predominantly winter peaking, but in recent years it has shifted more towards summer peaking. This is primarily due to increased use of air conditioners in homes and businesses and the replacement of electric resistance heaters with gas and reverse cycle air conditioners for winter heating.

2.3 Publicly Available Information

2.3.1 Distribution Annual Planning Report (DAPR)

Essential Energy develops demand and capacity forecasts for the electricity supply system as part of the network planning process which are detailed in the Distribution Annual Plan Report (DAPR)).

The Distribution Annual Planning Report describes the Essential Energy network, forecasts for the forward planning period, Essential Energy's reliability performance and other information describing the network's performance and future needs. Copies of these reports are available on Essential Energy's website, <http://www.essentialenergy.com.au>

2.3.2 Network Opportunity Mapping

Essential Energy has worked closely with the Institute of Sustainable Futures (ISF) to publish network opportunity maps. These maps use the Australian Renewable Energy Mapping Infrastructure (AREMI) platform to provide a visualisation of emerging constraints over the next 10 years. <http://nationalmap.gov.au/renewables/>

3 Demand side management process

3.1 Introduction

When forecasts indicate that a demand related issue is emerging and requires a solution, Essential Energy will investigate and, where viable, develop and implement demand management projects to maintain network service standards. The demand management investigation has five stages:

Stage 1: Identify demand related investment from annual reviews

Stage 2: Conduct demand management screening test

Stage 3: Conduct demand management investigation including community consultation

Stage 4: Select preferred option, where viable and cost effective

Stage 5: Implement demand management solution

For projects where the augmentation components of the credible network options have a capital cost in excess of \$5 million, the Regulatory Investment Test for Distributors (RIT-D) process will be utilised to assess non-network solutions.

For projects where the augmentation components of the credible network options have a capital cost less than \$5 million, the likelihood of finding suitable cost effective non-network solutions will be assessed on a case by case basis taking into account the nature of the constraint and the characteristics of the supply area.

3.2 Area plans

In developing strategies for meeting the future electricity needs of the community, Essential Energy reviews network supply adequacy for the areas covered by individual transmission connection points.

Essential Energy's strategy takes into account the relevant planning criteria, asset replacement requirements, network reliability standards and anticipated longer term network needs. The aim is to meet the forecast network needs in the most cost effective manner, while facilitating prudent longer term network investment decisions. Each Transmission Connection Point Supply Area Plan is reviewed annually and revised every two to three years. These plans typically cover forecasts over a ten year network planning period.

Both supply side capacity expansions and demand side options are considered equally in developing the best solution to address the electricity supply requirements of the community. A mix of demand and supply side options may be utilised if this provides a more cost effective solution.

3.3 Demand management screening test

For projects where the augmentation components of credible network options have a capital cost above \$5 million, a demand management screening test is carried out to determine if it is reasonable to expect that a non-network solution could provide a cost effective deferral or avoidance of the network investment.

A screening test is a desktop study and is conducted early in the planning process. The reasons or drivers for the network project are considered, along with the size of the demand that would need to be reduced, the year, time of day, duration and season the reduction is required, the rate the demand is growing and the characteristics of the load to be reduced.

The value of the network investment deferral is determined by calculating the difference between the Net Present Value (NPV) of the base case scenario, where the network infrastructure project is built by the required date, and a deferral scenario where the network infrastructure project is built at a later time. The assessment takes into account the associated market benefits for each option.

A judgment is made about whether it is reasonable to expect to be able to achieve a deferral for the proposed network infrastructure project at a value that makes the deferral cost effective. The deferral value is estimated based on available knowledge and past experience.

Important considerations include the:

- > Amount of demand reduction required
- > Value of deferral
- > Complexity of the demand management requirements
- > Time available for implementation
- > Relationship between the timing of demand reductions needed and likely opportunities.

If the screening test concludes that it is reasonable to expect that a non-network option could cost effectively defer the network infrastructure project, a report on non-network options will be issued and Essential Energy will begin investigating these options.

If the screening test finds that it is not reasonable to expect that a non-network option could cost effectively defer the network infrastructure project, a notice detailing this will be published on the Essential Energy website with a final project assessment report to be published as soon as practicable after that.

An example screening test is shown in in **Appendix A – Example screening test report**.

3.4 Non-network options investigation

The investigation process is designed to identify potential cost effective demand management options that could defer the supply side investment, and to identify the size, timing and budget costs of any feasible options.

Based on the demand reduction requirements identified in the demand management screening test, the investigation stage identifies non-network solutions to achieve the demand reductions. Options are identified by using Essential Energy's existing knowledge, through public consultation, and during field visits to customer sites and discussions with major customers. The investigation identifies the amount available and the likely cost of each non-network option identified.

The various elements for the non-network options report are described in the following sections.

3.4.1 Community consultation

The first formal interaction from Essential Energy to the potential non-network providers is when the non-network options report is uploaded to the website, issued to Australian Energy Market Operator (AEMO) and distributed to the members in the Register of Interested Parties record and other key stakeholders.

The non-network options report provides information on the network need, the geographic area of interest (for example a map outlining the boundary of the area supplied by the constrained asset), a load profile showing the peak time, maximum demand reduction, and duration of the required demand reduction. It also provides contact details for further information if required.

Essential Energy invites submissions on non-network options reports, and these can be sent to the demand management mailbox, dmcoordinator@essentialenergy.com.au.

For projects with an augmentation component less than \$5 million a final project assessment report will be published as soon as practicable following a minimum three month consultation period on the non-network options report

For projects with an augmentation component of \$5 million or more, following the minimum three month consultation period on the non-network options report, a draft project assessment report will be published outlining the nature of the network limitation, the network options considered, submissions received on the non-network options report and advising a proposed preferred option.

After a minimum six week consultation period on the draft project assessment report a final project assessment report will be published to include responses to any submissions received on the draft project assessment report.

A high level flow chart of the consultation process is included as **Appendix D – Consultation process outline**.

3.4.2 Assessment process

Essential Energy will respond to all submissions during the consultation process, outlining if the submission is of interest, or providing details about why it will not be considered further. There are a number of reasons a submission may not be of interest, for example where it is too expensive, is not technically feasible, or does not reduce demand on the constrained asset during the peak period.

If insufficient detail is provided in a submission to allow a reasonable level of confidence in a solution, to determine the impact on the peak demand, or to determine the costs, Essential Energy will contact the potential non-network provider to request further information.

For submissions which are of interest, Essential Energy will begin an engagement process with the potential non-network service provider, typically beginning with a request for more information. Once sufficient information is obtained to assess an option, a deferral cost (\$/kVA) is calculated to allow the option to be compared with other known solutions.

All options identified are then ranked according to the following criteria:

- > Demand reduction (kVA)
- > Cost (NPV and \$/kVA)
- > Market benefits
- > Time of day / seasonality demand reduction available
- > Timeframe for implementation
- > Reliability of demand reduction (risk of non-delivery).

Those options which are determined to offer insufficient confidence of delivery, cannot be implemented in the required timeframe or do not provide demand reductions during the required time period are then excluded.

The remaining non-network options are ranked on cost effectiveness from lowest to highest \$/kVA.

It's important to note that a network infrastructure deferral solution can be made up of a number of non-network solutions, as long as the demand reduction is greater than the volume required, and the total cost is lower than the deferral value.

For example, to defer a new 33kV feeder a 2.5MVA reduction is required. The total project cost for the preferred supply side solution is estimated at \$9m, and has a deferral value of \$900,000 for the first year. A total of six non-network proposals (outlined in the table below) were determined to be viable and were ranked from lowest to highest \$/kVA inclusive of market benefits.

| No. | Proposal | Demand Reduction (kVA) | Option \$/kVA | Option Cost (\$) | Market Benefits (\$) | Option \$/kVA (inc. market benefits) | Cumulative Demand Reduction (kVA) | Cumulative Cost (inc. market benefits) |
|-----|----------------------------|------------------------|---------------|------------------|----------------------|--------------------------------------|-----------------------------------|--|
| 1 | Power Factor Correction | 500 | \$100 | \$50,000 | \$20,000 | \$60 | 500 | \$30,000 |
| 2 | Load Curtailment | 200 | \$310 | \$62,000 | \$1,600 | \$302 | 700 | \$90,400 |
| 3 | Standby Generation | 700 | \$305 | \$213,500 | \$0 | \$305 | 1400 | \$303,900 |
| 4 | Pool Pump program | 200 | \$800 | \$160,000 | \$1,600 | \$792 | 1600 | \$462,300 |
| 5 | Air conditioner cycling | 200 | \$1,000 | \$200,000 | \$1,600 | \$992 | 1800 | \$660,700 |
| 6 | Energy Efficiency Campaign | 100 | \$2,500 | \$250,000 | \$5,000 | \$2,450 | 1900 | \$905,700 |

A combination of the first three options would achieve the required reduction of 2.5MVA at a cost less than the deferral value of \$900,000. In this example, Essential Energy would progress implementation of these three options.

3.4.3 Incentive payment schemes

At present there are no applicable incentive payment schemes for the implementation of non-network options.

If an applicable incentive payment scheme is developed, the Demand Side Engagement Strategy will be updated to reflect this. This information would then be published on the website, issued to AEMO and distributed to the register of interested parties.

3.4.4 Investigation reports

The non-network options report describes the investigation process followed, identifies all demand side options considered, lists the cost and impacts ascribed to each and describes any feasible demand side options to be considered alongside network augmentation options. If necessary, it repeats the demand side requirements and augmentation option details from the screening test with updates due to changes in load forecasts or the default supply side solution. It also provides a summary of the public consultation process and presents results of the comparison of cost to demand management value.

In the event that no demand side options are found to be feasible then this is clearly stated.

Reports are made public on the Essential Energy website. Any parties that made submissions in the consultation, as well as those listed in the Demand Management Register of Interested Parties, are contacted directly.

An example of a non-network options report is attached as **Appendix B – Example non-network options report**.

Where applicable the results of the demand side investigation are included in the draft and final project assessment reports which detail the identified network need and summarise Essential Energy's investigation and final decision on the most efficient solution.

4 Consultation paper

4.1 Register of interested parties

Essential Energy maintains a register of interested parties, who are notified of the publication of relevant documents, including screening test reports, non-network options reports, draft project assessment reports, final project assessment reports and the annually published Distribution Annual Planning Report. Parties are invited to register their interest through the Essential Energy website or by emailing the demand management team at dmcoordinator@essentialenergy.com.au.

4.2 Responding to consultation paper

The public consultation is focused on identifying potential options and uncovering information that is already known (by another party) but otherwise unavailable to Essential Energy. A non-network options report is published seeking information from interested parties on non-network options in the geographical area of the constraint.

The content of the options paper will include all of the following:

- > A description of the identified need
- > The assumptions used in identifying the identified need
- > The technical characteristics of the identified need including the size, location and time period required
- > A map identifying the geographical boundaries of the constrained area
- > A description of the preferred supply side solution
- > Electricity demand profile data for the need
- > The deferral value for the identified need
- > The likely characteristics of suitable non-network options.

Submissions generated from the consultation process should include as much of the following information as is available:

- > Name, address and contact details of the company or person making the submission

- > Name, address and contact details of the company or person responsible for the load or alternate supply (if different to above)
- > Size, type and location of load(s) that can be reduced, shifted, substituted or interrupted
- > Size, type and location of generators that can be used if required
- > Type of action or technology proposed to reduce peak demand / provide alternate supplies
- > Time required to implement these measures and any period of notice required before loads can be interrupted or generators started
- > Approximate total cost to implement these measures and any cost savings that would accrue to the owners / operators of the equipment
- > Approximate cost of any contribution / assistance that Essential Energy may be required to make in order to make use of this measure for demand management
- > Other additional information to assist Essential Energy in investigating and evaluating the non-network option.

An example response to a consultation paper is provided as Appendix C. Responses should be comprehensive, demonstrating clearly the technology providing the demand reduction, the quantity of the potential demand reduction, the effectiveness during the peak period, and giving sufficient background into the potential non-network provider.

Consultation papers may, in certain circumstances be issued with a response template. For example, Essential Energy could be aware of a high number of embedded generators in an area of interest, and during the consultation process specifically target these as potential non-network solutions.

If negotiation is required to further develop a potential non-network option, Essential Energy will engage with the proponent on a case by case basis and update the process outline based on learnings from the completed development.

4.2 More information

More information on the demand management process at Essential Energy, recently completed screening tests and investigations, and current non-network option reports, is available on the Essential Energy website at www.essentialenergy.com.au.

To join the register of interested parties, please use the Essential Energy website.

For general enquiries please contact Essential Energy's Demand Management team by email at <mailto:dmcoordinator@essentialenergy.com.au> or write to us at:

Manager Demand Management
Essential Energy
PO Box 5730
Port Macquarie, NSW, 2444

5 Embedded generation

5.1 Connection to Essential Energy's distribution network

The process under which Essential Energy will provide network services to a generator to enable its generating facilities to be connected and remain connected to Essential Energy's distribution system are detailed in Essential Energy operational procedure CEOP8079 Connection Guidelines for High Voltage Connections and Embedded generators which can be found on Essential Energy's [website](#).

The above document outlines the regulatory requirements, factors considered in assessing connection, the application process and other issues associated with connecting a generator to Essential Energy's network.

Avoided Customer Transmission Use of Service (TUOS) charges are determined in accordance with clause 5.5 (i) of the National Electricity Rules.

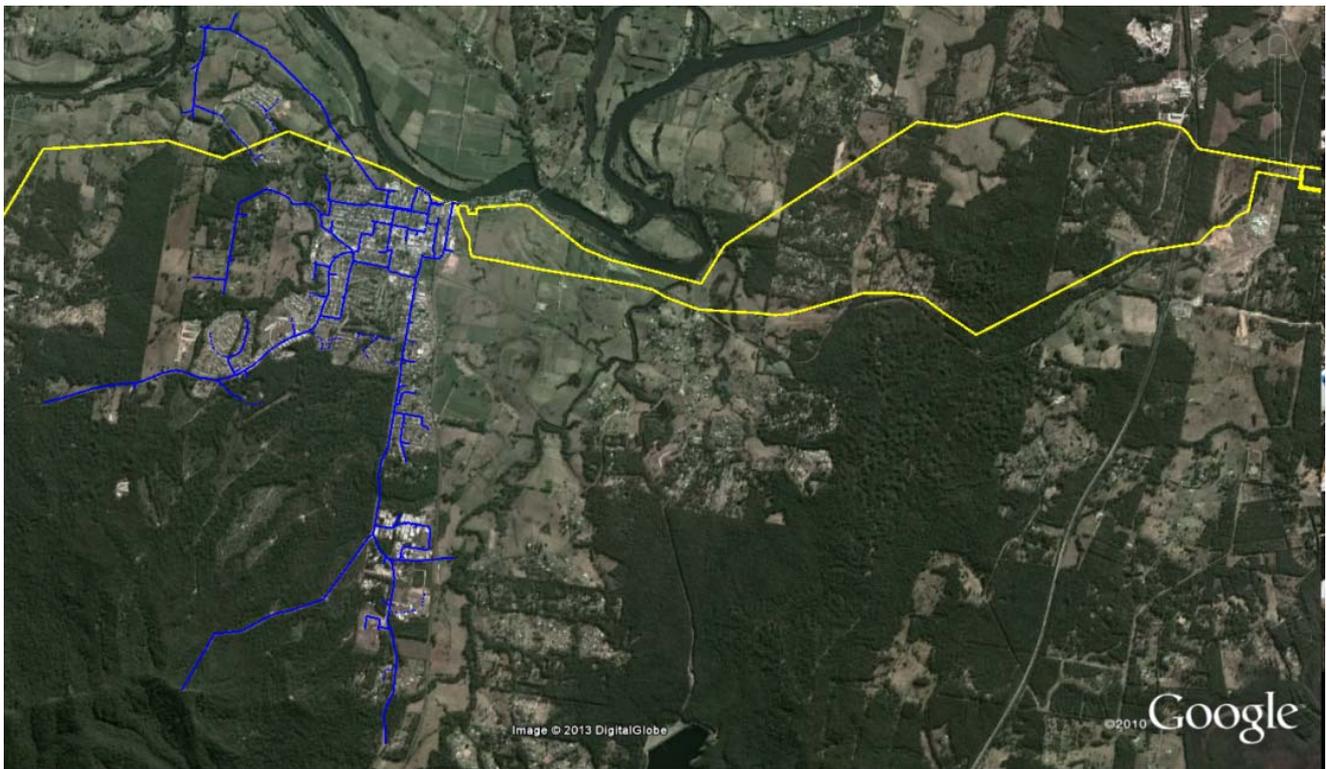
Appendix A – Example screening test report

AUGMENTATION OF ELECTRICITY SUPPLY TO THE XYZ AREA

Current supply arrangements

The area of investigation is the XYZ area and its surrounds.

The XYZ area is presently supplied via two 66kV powerlines, both of approximately 32km in length. Both these feeders are predominately comprised of 6/4.75 + 7/1.60 ACSR/GZ 'CHERRY' conductor which are at or over their serviceable design rating under contingent conditions at times of peak load.



The diagram above shows the XYZ area (in blue) and the two 66kV powerlines in question

Supply capacity and demand forecast

THERMAL LIMITATION: OUTAGE OF EITHER FEEDER INTO THE XYZ AREA

Under Essential Energy's licence conditions 60 second N-1 security is required for loads above 15 MVA and load in the XYZ area is already in excess of that figure.

On outage of either feeder into the XYZ area, the loading on the alternate 66kV line can exceed its thermal rating at times of summer peak loading.

The tables below show the increasing thermal limit risk exposure for an outage on either feeder in summer and are noted as the highest risk exposure for any of the credible contingencies in the XYZ area.

| Summer | Required Demand Reduction (MVA) |
|---------|---------------------------------|
| 2020/21 | 4.5 |
| 2021/22 | 4.9 |
| 2022/23 | 5.3 |
| 2023/24 | 5.7 |

Supply strategy option

The preferred supply side option is the construction of a local 66kV substation in the XYZ area and the provision of associated interconnecting 132kV and 66kV powerlines between the existing TransGrid 132kV and Essential Energy 66kV networks.

The estimated cost of the project is \$12m, with commissioning proposed in 2020. A decision on this investment is required by July 2018.

Required demand management characteristics

If demand could be reduced in the appropriate area by 4.5MVA before summer 2020/21 then the proposed investment could be deferred by one year with a saving from this deferral of \$1.09m or \$243/kVA. 4.5MVA represents 3% of total demand in the constrained area.

If demand could be reduced in the appropriate area by 4.9MVA before summer 2018/19, then the proposed investment could be deferred by two years, with the saving from a two year deferral being \$2.08m or \$425/kVA.

If demand could be reduced by 5.3MVA by summer 2022/23, then the investment could be deferred by three years. The saving from a three year deferral is \$2.99m or \$563/kVA.

| Year | Load Forecast (MVA) | Required Demand Reduction (MVA) | Required Demand Reduction as a % of load | \$/kVA/yr | Cumulative \$/kVA (for permanent demand reductions) |
|------|---------------------|---------------------------------|--|-----------|---|
| 1 | 30.0 | 4.5 | 15% | 242 | 242 |
| 2 | 30.4 | 4.9 | 16% | 202 | 425 |
| 3 | 30.8 | 5.3 | 17% | 170 | 563 |
| 4 | 31.2 | 5.7 | 18% | 144 | 668 |

Recommendation

Based on this analysis, taking into consideration the allowable timeframe and cost for implementation and the level of demand reduction required, it is considered reasonable to expect that it may be cost effective to postpone the proposed supply-side solution by implementing demand management strategies. A demand management investigation will be undertaken involving a full investigation including public consultation and field investigation.

Appendix B – Example non-network options report

AUGMENTATION OF ELECTRICITY SUPPLY TO THE XYZ AREA

Current supply arrangement

The area of investigation is the XYZ area and its surrounds.

The XYZ area is presently supplied via two 66kV powerlines, both of approximately 32km in length. Both these feeders are predominately comprised of 6/4.75 + 7/1.60 ACSR/GZ 'CHERRY' conductor which are at or over their serviceable design rating under contingent conditions at times of peak load.

Supply capacity and demand forecast

THERMAL LIMITATION: OUTAGE OF EITHER FEEDER INTO THE XYZ AREA

Under Essential Energy's licence conditions 60 second N-1 security is required for loads above 15 MVA and load in the XYZ area is already in excess of that figure.

On outage of either feeder into the XYZ area, the loading on the alternate 66kV line can exceed its thermal rating at times of summer peak loading.

The tables below show the increasing thermal limit risk exposure for an outage on either feeder in summer and are noted as the highest risk exposure for any of the credible contingencies in the XYZ area.

| Summer | Required Demand Reduction (MVA) |
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Required demand management characteristics

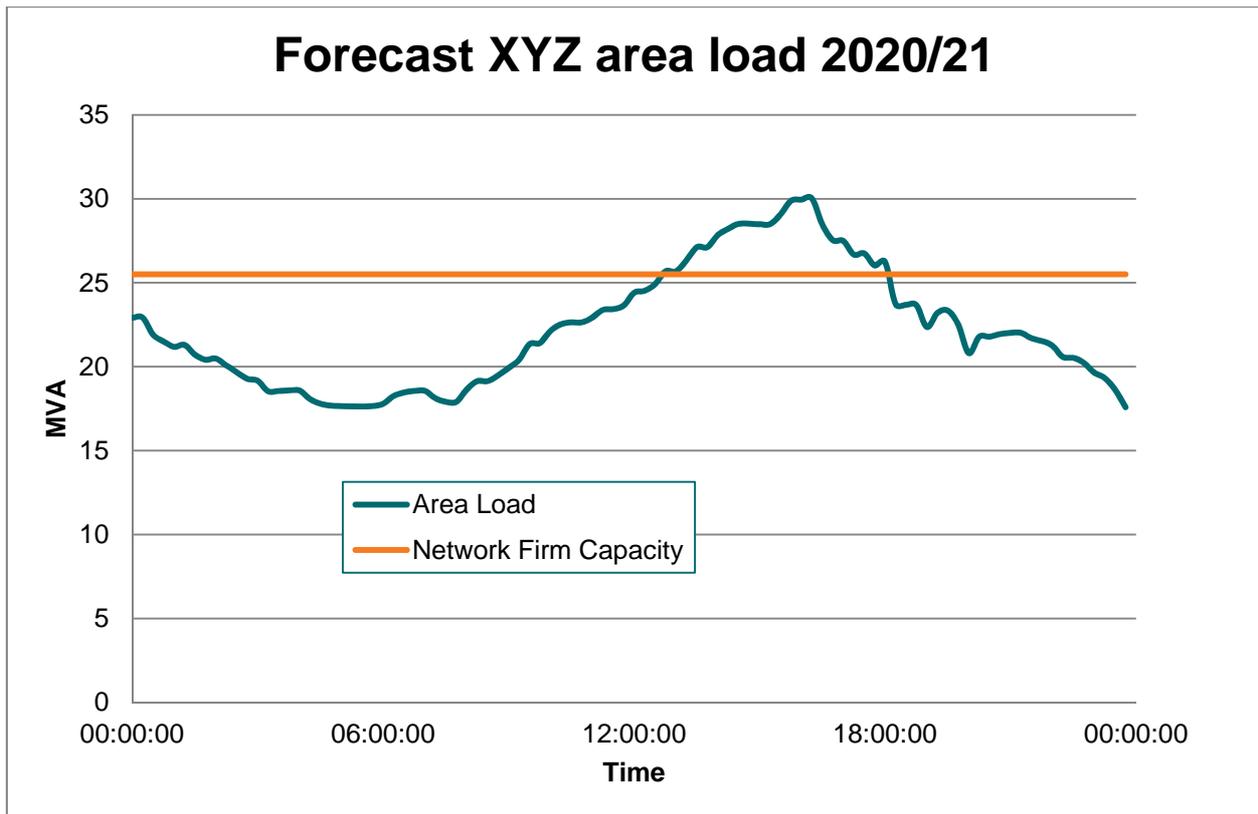
If demand could be reduced in the appropriate area by 4.5MVA before summer 2020/21 then the proposed investment could be deferred by one year with a saving from this deferral of \$1.09m or \$243/kVA. 4.5MVA represents 3% of total demand in the constrained area.

If demand could be reduced in the appropriate area by 4.9MVA before summer 2021/22, then the proposed investment could be deferred by two years, with the saving from a two year deferral being \$2.08m or \$425/kVA.

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| Year | Load Forecast (MVA) | Required Demand Reduction (MVA) | Required Demand Reduction as a % of load | \$/kVA/yr | Cumulative \$/kVA (for permanent demand reductions) |
|------|---------------------|---------------------------------|--|-----------|---|
| 1 | 30.0 | 4.5 | 15% | 242 | 242 |
| 2 | 30.4 | 4.9 | 16% | 202 | 425 |
| 3 | 30.8 | 5.3 | 17% | 170 | 563 |
| 4 | 31.2 | 5.7 | 18% | 144 | 668 |

Shown below is the existing system load profile, modified to show the forecast peak loading in 2020/21.



Potential credible options

Supply side options:

- > Reconducting both lines to cater for N-1 support at an estimated cost of \$21m
- > The construction of a local 66kV substation in the XYZ area and the provision of associated interconnecting 132kV and 66kV powerlines between the existing TransGrid 132kV and Essential Energy 66kV networks. This is the preferred supply side option
- > The estimated cost of the preferred supply side project is \$12m, with commissioning proposed in 2020. A decision on this investment is required by July 2018.

Non-network options

For any specific DM option to be considered viable, it must;

- > Decrease the load by the above specified amount, multiplied by a reliability factor dependent on the DM option type OR be willing to accept financial penalties for non-delivery
- > Be able to be installed, commissioned and tested by summer 2020/2021
- > Be a permanent reduction in load OR be available on notice. Notice terms may be agreed on submission of proposals but must be under 24hours.

For the particular constraint outlined above this may include:

- > Generation, which may include:
 - Stand-alone generation facilities based on rotating machines, such as large diesel or gas fired plants.
 - Embedded generation based on rotating machines, such as those used in commercial UPS
 - Embedded generation based on renewables, where it can be proven based on historical data that the load constraint coincides with the renewable generation OR where energy storage is available to increase the system reliability of coincidence
- > Load curtailment, which may include:
 - Industrial and commercial processes which, through historical data can be shown to be running during the constraint period and which will be able to be reduced on notice by the utility
 - Embedded generation based on rotating machines, such as those used in commercial UPS arrangements, whereby the site operations are able to be taken offline on notice

- > Load shifting, which may include:
 - Energy storage, used to shift processes (which through historical data can be shown to be running during the constraint period), from the constraint period into the shoulder or off peak period and may include chemical or thermal storage
- > Controlled load
 - Includes any processes (which through historical data can be shown to be running during the constraint period) which will be made available for utility control with or without notice, such as hot water, air conditioning, pool pumps and some commercial loads
- > Fuel Substitution
 - Includes the substitution of an alternate energy source for a currently electrically powered process (which through historical data can be shown to be running during the constraint period) such as hot water, cooking, heating and cooling
- > Other options
 - The non-network options outlined above are not an exhaustive list, if a proponent has a viable cost effective alternative, Essential Energy would be happy to discuss the potential of any such alternative.

For any non-network providers wishing to present alternative potential credible options a non-network proposal can be submitted for consideration by the RIT-D proponent by emailing dmcoordinator@essentialenergy.com.au

Appendix C – Example response to non-network options report

ABC Consultants non-network proposal:

ABC Consultants has been an established load curtailment provider for approximately 20 years, delivering over 200MVA of load curtailment during this time with both Australian and international utilities and retailers.

ABC Consultants are able to source approximately 5.6MVA of load curtailment in the XYZ area in order to defer the construction of a local 66kV substation in the XYZ area with associated interconnecting 132kV and 66kV powerlines. This load curtailment can be available before the 2020/2021 summer, provided an agreement is reached between ABC consultants and Essential Energy by summer 2019/2020.

The load curtailment is available from approximately 18 different sources with demand reduction, peak coincidence, estimated setup and standing costs and delivery costs outlined below.

For the purpose of this proposal, peak coincidence is defined as the probability that the equipment made available for demand reductions will be on during the network peak (determined from historical data), if required a minimum reduction at 100% peak coincidence can be made available.

| No. | Reduction | Peak coincidence | Setup Cost | Standing Cost | Delivery Cost \$/hr |
|-----|-----------|------------------|------------|---------------|---------------------|
| 1 | 250 | 96% | 7000 | 12600 | 700 |
| 2 | 400 | 52% | 7200 | 13900 | 12300 |
| 3 | 100 | 95% | 7600 | 6300 | 3600 |
| 4 | 600 | 90% | 5500 | 12600 | 5700 |
| 5 | 800 | 94% | 4500 | 3300 | 1300 |
| 6 | 350 | 96% | 9200 | 2800 | 14300 |
| 7 | 500 | 95% | 9800 | 18600 | 13500 |
| 8 | 125 | 91% | 3600 | 15800 | 10300 |
| 9 | 200 | 90% | 3800 | 19800 | 6300 |
| 10 | 250 | 93% | 2200 | 3200 | 6900 |
| 11 | 900 | 87% | 7700 | 17100 | 11200 |
| 12 | 200 | 89% | 7500 | 16700 | 5300 |
| 13 | 350 | 97% | 9200 | 7500 | 4400 |
| 14 | 125 | 100% | 8500 | 10800 | 3100 |
| 15 | 450 | 65% | 4100 | 7100 | 2300 |

ABC Consultants feels that it would be possible to defer the preferred supply side option for two years based on the predicted peak coincidence and delivery cost, with years three and beyond requiring too great a demand reduction to be viable.

For any further enquires contact:

Mr Smith

ABC Consultants

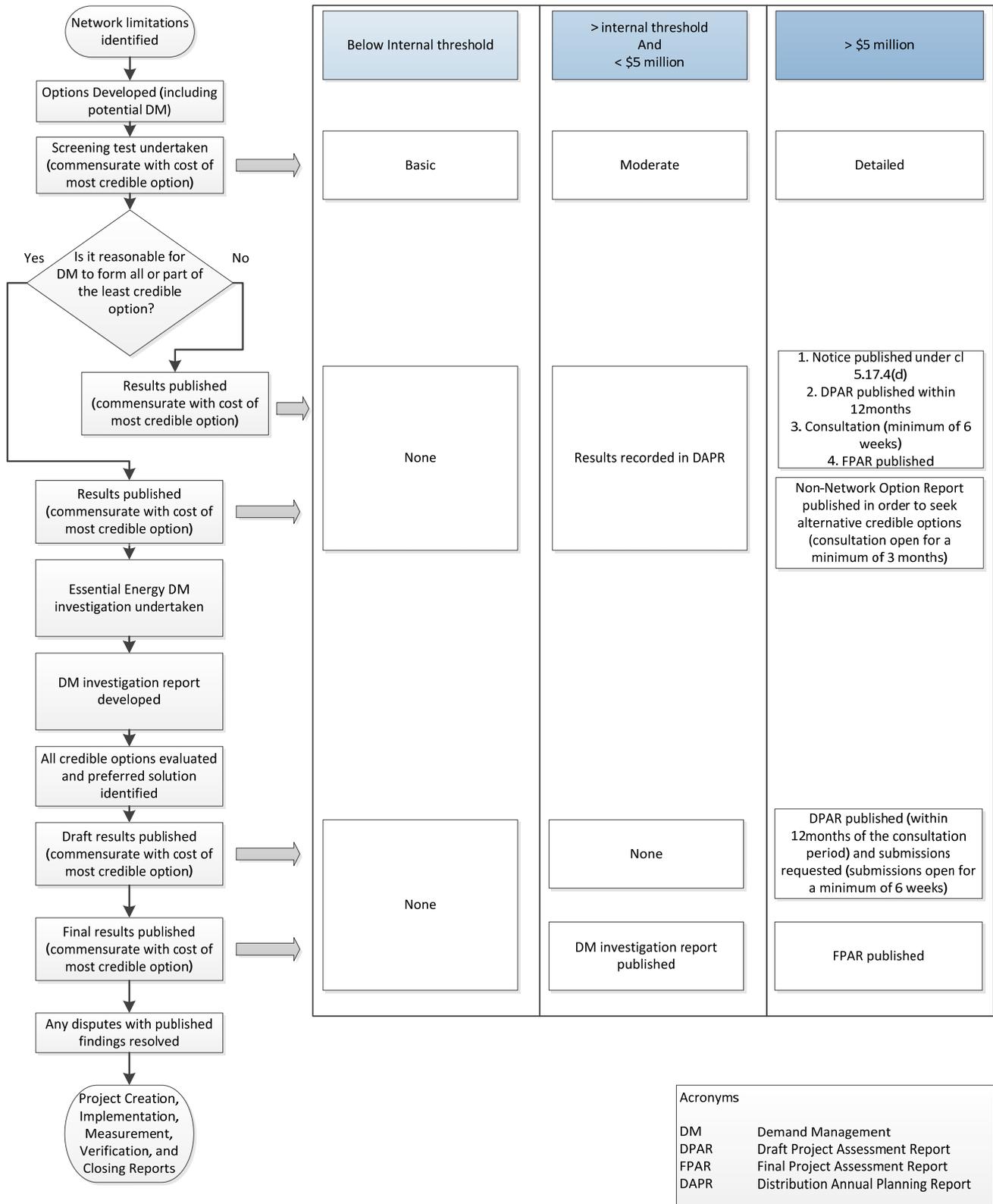
123 DM Street

XYZ Area

Or phone 04XXXXXXXX

Appendix D – Consultation process outline

Essential Energy RIT-D and Demand Management Investigation Process



Appendix E – Consultation process outline

The Demand Side Engagement document is required to comply with Schedule 5.9 of the National Electricity Rules, the location of the required information is provided in Table 1.

| Schedule 5.9 of the National Electricity Rules; | Page Number |
|---|-------------|
| (a) a description of how the Distribution Network Service Provider will investigate, develop, assess and report on potential non-network options; | 7 |
| (b) a description of the Distribution Network Service Provider's process to engage and consult with potential non-network providers to determine their level of interest and ability to participate in the development process for potential non-network options; | 7 |
| (c) an outline of the process followed by the Distribution Network Service Provider when negotiating with non-network providers to further develop a potential non-network option; | 9-10 |
| (d) an outline of the information a non-network provider is to include in a non-network proposal, including, where possible, an example of a best practice non-network proposal; | 9, 16 |
| (e) an outline of the criteria that will be applied by the Distribution Network Service Provider in evaluating non-network proposals; | 8 |
| (f) an outline of the principles that the Distribution Network Service Provider considers in developing the payment levels for non-network options; | 8 |
| (g) a reference to any applicable incentive payment schemes for the implementation of non-network options and whether any specific criteria is applied by the Distribution Network Service Provider in its application and assessment of the scheme; | 9 |
| (h) the methodology to be used for determining avoided Customer TUOS charges, in accordance with clauses 5.4AA and 5.5; and; | 10 |
| (i) a summary of the factors the Distribution Network Service Provider takes into account when negotiating connection agreements with Embedded Generators; | 10 |
| (j) the process used, and a summary of any specific regulatory requirements, for setting charges and the terms and conditions of connection agreements for embedded generating units; | 10 |
| (k) the process for lodging an application to connect for an embedded generating unit and the factors taken into account by the Distribution Network Service Provider when assessing such applications; | 10 |
| (l) worked examples to support the description of how the Distribution Network Service Provider will assess potential non-network options in accordance with paragraph (a); | 8 |
| (m) a hyperlink to any relevant, publicly available information produced by the Distribution Network Service Provider; | 6 |
| (n) a description of how parties may be listed on the demand side engagement register; and | 9 |
| (o) the Distribution Network Service Provider's contact details. | 10 |