

Transpower's responses to the Commission's questions on its proposed demand side response amendment

Question
<p>1. Please expand on the specific design, process and technology concerns you will address by increasing the geographical area of the testing, which cannot be achieved through upper North Island testing alone?</p> <p>Expanding the geographic area allows us to include a broader range of end users so that we can:</p> <ul style="list-style-type: none"> • Draw on a wider pool of diverse providers to determine natural price points for varying types of DR • Test co-ordination of DR with a wider pool of providers • Better understand how DR, when used as an NTS, will interact with other load management options such as interruptible load. • Better assure the business processes and systems that support the use of the DRMS in the programme. <p>The primary driver behind this amendment is to enable us to capture as much useful information from as wide a range of participants as possible. The extension has allowed participation of organisations such as Nelson Marlborough District Health Board (NMDHB) and Callaghan Innovation (Callaghan) to participate as unique end user types.</p> <p>In particular, NMDHB represents a collection of hospitals with a similar capability to participate in demand response activities. They are effectively acting as a demonstration site for hospitals that are considering entering into a DR programme.</p> <p>Callaghan represents a rather unique campus-styled end user, such as a university, where a single end user aggregates diverse loads and small generation from multiple buildings at a single location. Their electricity consumption patterns are difficult to predict and it is therefore difficult to predict demand response capacity at any given time of day. Inclusion of Callaghan will enable Transpower to better understand how to enable effective and efficient participation in demand response programmes by similar organisation types.</p> <p>These user types are well represented in the upper North Island, however they were under represented in the RFP responses.</p>
<p>2. Are there any practical reasons why you need to expand the geographical area?</p> <p>One of the objectives of this DR programme is to determine natural price points of DR for different providers. Our RFP was designed to allow participation from as wide a range of DR providers as possible so that we could better meet this objective. From a practical perspective, allowing participation from as wide a geographic region as possible allows us to do this.</p> <p>2(a). If you do have participants that have multiple locations and some of those locations fall outside the upper North Island please state how many MWs outside of the upper North Island (split by demand response product) are accounted for because of this.</p> <p>A number of participants have multiple locations outside the upper North Island (UNI), however the most significant is Vodafone NZ. The majority of Vodafone's participation in the programme is through sites in the UNI however they have also included some sites scattered around various parts of the country to confirm the national capability of their control systems to deal with any nationwide Transpower demand</p>

response programme.

3. Within your application you state that the programme is likely to commence in August 2013 and run for 6 months. This period does not coincide with high demand or summer rating of circuits. Please explain why this is the right time to carry out the trials?

The duration of the program is designed to traverse winter, shoulder and summer peak demand periods. This is the period of the year when we would most likely require additional dynamic reactive support in the Upper North Island in the future.

However, as recent experience shows, the requirement for DR can occur at any time of the year. On 22 August, the System Operator sent a warning notice to market participants advising that there was insufficient generation and reserve offers to meet the forecast evening peak demand. We called on the DR resource contracted as part of our programme which resulted in an average of around 90 MW reduction between 5.30 – 7.30 pm.

4. Please identify the earliest case/s that you foresee a regulatory need for demand response products.

We anticipate that the next significant transmission investment deferral opportunity to be in the Upper South Island in 2020 and Upper North Island around 2023. This is based on our most current demand forecasts and could change if the rate of forecast demand growth changes over the next few years.

4(a). Please identify the type of security issue or the project in size (in MW's), type and location that would be deferred or avoided, including whether or not they are within the upper North Island and the type of demand response product that you would use.

Refer question 3 for the type of security issue that DR can be used for. All DR resource can be used for this type of event.

Any transmission investment that is driven by increased capacity requirements on the Grid can be deferred by the use of DR. Whether, it can be economically deferred is dependent upon the offered price of that resource. We have demonstrated, through this programme, that by implementing a platform to manage DR deployment and by reducing the barriers to entry for participants, we can now access DR at a cost that is economic to defer a wide range of investments. This was not the case when we originally sought DR in the UNI in 2011. Again, if we can access sufficient quantities of DR at an economic price, then most types of DR can participate in future programmes to defer transmission investment.

We are of the view that by growing the future DR resource by accessing new types of DR, and establishing it by the use of these types of programmes well ahead of the need date, we can further reduce the cost, thereby use it to defer even minor transmission investments in the future to the benefit of all NZ.

5. Please explain why the proposed amendment will not change or affect services provided by a third party

We are of the view that incentivising and accessing a low cost DR resource will lead to significant long term benefit to consumers by reducing the cost of transmission investment. We are just starting to establish this resource and it will take time to build up an enduring capability that can be used when required. To ensure we learn as much about the resource as we can, we have taken steps to include a wide a range of participants as possible by extending the geographical region.

For example, the participation of Nelson Marlborough District Health Board will provide valuable information about the cost and operation of on-site standby generation for this type of provider.

We do not anticipate the amendment will impact any other parties that may provide a service to balance supply and demand such as generators and/ or other load aggregators. There is potential to contract for a maximum of 19 MW outside of the UNI region and this will be dispersed throughout the lower north island and upper south island regions. Given this relatively low quantum of demand, it is highly unlikely to impact other market participants. We are of the view that load aggregators and retailers will only benefit from this amendment as it provides an additional revenue stream for their DR resource.

5(a). As part of your reply to question 5, please include any steps you have taken to ensure the proposed amendment impacts third parties in a positive way

The proposed amendment allows broader participation in our DR programme so this is likely to impact load aggregators in a positive way. Given the extension of the geographic region allows participation by a wider group of participants, we will be able to better test co-ordination, deployment and required business processes to support future enduring DR programmes.

6. Please provide actual and forecast expenditure for this programme by capex categories (and opex categories if applicable) in aggregate form.

Actual expenditure to date

\$4.1 million in capex on the installation of the Demand Response Management System

\$1.3 million opex since 2010 approval

Total forecast expenditure to June 2014

\$4.1 million capex

\$5.3 million opex

7. Please identify the GAAP treatment applied to categorising items as Capex or Opex in question 6.

The \$4.1m installing the DR management system has been categorised as capital as it has created an asset.

Payments to DR providers are opex, because they do not result in an asset – they are an expense of operating the system.

On-going internal costs relate to management, operating and maintenance costs, therefore treated as opex.

8. Please provide the participant's names, the nature of their business and the MWs they have signed up to by product as a result of widening the geographical area.

The table below shows the contracted participants, their contracted DR by product type and the region where their supply is located.

Participant	Nature of Business	Price Responsive(MW)	Security (MW)	Region
Trustpower	Generator/ Retailer	8.6	8.6	UNI
Counties Power	Distribution	20.0	20.0	UNI
Vector	Distribution	64.0	0.0	UNI
Callaghan Innovation	R & D	0.3	0.1	LNI
Vodafone	Telecommunications	1.2	1.3	UNI/ LNI/USI
Simply Energy	Retailer	3.7	3.0	UNI/ LNI
NMDHB	Health	2.2	0.9	USI
Refining NZ	Oil Refinery	1.0	0.0	UNI
Total		101.0	33.9	

Please note, we are still negotiating contracts with two parties, for 10 MW in the UNI in the Price Responsive programme and 14 MW in the LNI region in the Security programme.

8(a). If any participant's in question 8 are load aggregators please indicate whether they are utilising the Demand Response Management System Transpower has developed.

Some of the participants are load aggregators. All are required to interface to Transpower's Demand Response Management System (DRMS) to participate in our programme. However, this does not preclude the use of their own systems to co-ordinate their load control as part of this programme.

The Transpower DRMS is a centralised co-ordination tool which allows us to make system wide calls for DR and verify the response once it has occurred.