



TRANSPOWER

Keeping the energy flowing

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13 August 2013

Alex Sim
Manager – Regulation
Commerce Commission
P O Box 2351
Wellington

Dear Alex

Application for Amendment of Outputs for the Upper North Island Dynamic Reactive Support Investment Proposal

In July 2010 the Electricity Commission approved our Grid Upgrade Plan 2009, Instalment 4, Part VII for a reliability investment in dynamic reactive support in the upper North Island.

One of the grid outputs of the investment proposal was to “undertake a range of demand-side initiatives in the upper North Island”. It was anticipated that the demand side initiatives would provide contingency options arising from load growth uncertainty in that region.

As you are aware we have used the approved funding to date to implement a Demand Response Management System and further investigate how we can access economic demand response which could be used as a non-transmission solution in the future.

We have recently completed a competitive tender process for a demand response programme and we are in the process of finalising contracts with the selected providers. It is anticipated that the programme will commence in late July and run for 6 months. The purpose of the programme is to test the design of Transpower’s price responsive and security demand response products, as well as the processes and technology for calling, verifying and payment.

We did not restrict the tender to the upper North Island region as we want to encourage as much participation in this programme as possible to maximise the learnings from this programme.

As a result of the geographic expansion of the demand response programme beyond the upper North Island region, we apply to the Commission for an amendment to the approved major capex project outputs under clause 3.3.4(1)(d) of the Transpower Capital Expenditure Input Methodology Determination 2012 (the **Capex IM**). We believe this application (together with the enclosures) satisfies the applicable requirements of the Capex IM, including under clause 7.4.2.

We note that the amendment sought will not increase the forecast end cost of the demand response elements of the original investment proposal, nor will it require an increase in the major capex allowance.

Please let me know if you have any queries.

Yours sincerely



Siobhan Procter
Strategy and Investment Manager

Enc: Supporting information for the application
Chief Executive Certification

Enclosure: Supporting Information for Application for Amendment of Outputs for the Upper North Island Dynamic Reactive Support Investment Proposal

This is an application for amendment of the approved major capex project outputs for the investment proposal. The amendment is sought pursuant to the Commission's powers under clause 3.3.4(1)(d) of the Capex IM. No other amendments pursuant to clause 3.3.4(1) of the Capex IM are sought under this application.

All clause references in the remainder of this enclosure are to clauses of the Capex IM.

This application is made in respect of one grid output element of the approved Grid Upgrade Plan 2009, Instalment 4, Part VII for a reliability investment in dynamic reactive support in the upper North Island, that being to:

Undertake a range of demand-side initiatives in the upper North Island region.

We have not included any information in relation to any other aspects of the Upper North Island Reactive Support Grid Upgrade Plan as they are not relevant to this application.

Compliance with clause 7.4.2

As required by clause 3.3.4(2)(a), this application complies with the requirements of clause 7.4.2:

- (1) *Application must be received by the Commission by the last working day of the September after the disclosure year in which the project in question is first commissioned*

Our demand side initiatives have to date include the installation of a Demand Response Management System (DRMS) as well as demand response programme in which seeks to:

- Determine natural price points of DR for different providers
- Confirm whether DR is an economic non-transmission solution
- Test co-ordination with distributors
- Understand interaction with other load management options (IL, AUFLS)
- Further confirm operability of our software platform (DRMS)

The programme will initially run for six months and we are in the process of contracting with a number of DR providers. Whilst the next stages of the DR programme have not yet been finalised, we are seeking to build the DR capability over the coming years so that the resource is available to be used when required as a non-transmission solution (NTS).

Further details about our demand response programmes can be found at <https://www.transpower.co.nz/projects/demand-response-project/demand-response-programme>.

We consider that this application has therefore been made within the required timeframe.

(3)(c) Application must contain the information specified in Schedule H Division 3

The required information is set out in this enclosure. We have restricted the information to the specific grid output which we are seeking to amend, therefore other information about the wider Grid Upgrade Plan is not considered relevant.

(4) Application must contain certificates specified in clause 9.3.1

The required certificate is enclosed with this application.

Schedule H Division 3 information

H14 Project identification and specifications

The relevant project is the Grid Upgrade Plan 2009, Instalment 4, Part VII: Upper North Island Dynamic Reactive Support Investment Proposal, as approved by the Electricity Commission in July 2010.

The relevant approved output is to undertake a range of demand-side initiatives in the upper North Island region.

H15 Amendment sought

(1) Proposed amendment

The proposed amendment is to expand the geographic scope of the demand response programme (part of the demand-side initiatives) to the whole of New Zealand.

(2) Explanation as to how each proposed amendment was arrived at

The demand response programme is a critical step in developing and establishing New Zealand's demand response capability so that it can be used in the future as a non-transmission solution. The programme will test the design of our price-responsive and security demand response products as well as the processes and technology for calling, verifying and paying for demand response.

The duration of the programme is short – it will run for around six months. Given that duration, we consider it prudent to maximise the sample size and diversity of demand response sources for the programme by expanding its geographic scope to the whole of New Zealand.

Our competitive tender process has revealed that there are demand response providers outside the upper North Island who are prepared to participate in the programme at a reasonable cost.

We plan to continue to grow the demand response capability in New Zealand to further increase the supply with a view to providing access to lower cost demand response that can be used in the future as an NTS. Whilst we

anticipate closing off the funding from the UNI reactive support GUP by the end of 2014, we are considering how to continue to fund our DR programme beyond this date.

One option is to submit a Major Capex Proposal seeking approval for funding over the next few years so we are assured of an established low cost resource when we need it to defer transmission investment. We will continue to keep the Commission and stakeholders abreast of our plans in this regard.

We will not spend over and above the major capex allowance for this grid output element of the Upper North Island Reactive Support proposal.

(3) *Description of the extent to which each proposed amendment reflects a change to the:*

(a) *assets to be commissioned*

The amendment will not affect the assets to be commissioned. The expanded programme will use our already-commissioned Demand Response Management System (**DRMS**).

(b) *functional capability of the grid*

The amendment will not change the functional capability of the grid, other than (potentially) to allow the relaxation of grid constraints beyond the upper North Island region when demand response is called and provided as part of the programme.

(c) *quantum of electricity market benefit or cost elements directly related to the supply of electricity transmission services that are likely to be achieved as result of undertaking the project*

The amendment will not result in an increase in market cost elements.

The original Grid Upgrade Plan did not include an analysis of the benefits of investigating and developing the demand response resource in the region. Therefore, we cannot assess the change in the quantum of market benefits as it relates to the original proposal.

However, by increasing the geographical diversity of the programme we are expecting to test more robustly the design of our price responsive and security demand response products as well as the processes and technology for calling, verifying and paying for demand response.

By demonstrating this capability, we hope to incentivise wider participation in future programmes, thus increasing the supply of demand response and potentially further reducing the costs, thereby providing benefit to consumers in the long term from deferring transmission investment.

- (c) *in the case of a non-transmission solution, description of the extent to which each proposed amendment reflects a change to any relevant service provided by a third party*

The proposed amendment allows for demand response providers outside (as well as inside) the upper North Island region to participate in the demand response programme.

H16 Progress of project

The information below relates only to the demand response element of the demand-side initiatives output of the investment proposal.

- (a) *Planning processes undertaken*

We plan to run two types of demand programmes over the coming six months. These are described below:

Security programme

- agreed level of demand response fixed price
- firm commitment for duration of contracted period
- must respond to call

Price responsive programme

- contract a level of demand response available to bid
- bid in quantity and price in response to an offer by Transpower
- not obliged to bid in response to an offer by Transpower

Both programmes seek to test price and reliability of demand response under differing conditions

We issued a request for proposal for these on 5 April, 2013. Twenty two responses were received from thirteen providers, including eight responses from four demand response providers outside the upper North Island region. .

Our evaluation of the proposals produced a preferred provider list of ten providers, including four from outside the upper North Island region.

We are now in the process of contracting for 58 MW (26% outside UNI region) in the security programme and 110 MW offered in the price responsive the price responsive programme (1.5% outside UNI region).. All contracts are expected to be signed within the next few weeks.

- (b) *Resource management consents, other regulatory consents, and property rights and access rights obtained*

No such consents or rights are required for the demand response programme.

- (c) *Construction and labour contracts and arrangements made*

The only new contracts required for the demand response programme are the price responsive and security demand response contracts referred to above.

The DRMS has already been procured and commissioned under a separate contract with the technology provider.

(d) *Construction completed*

The DRMS has been commissioned. No changes to the DRMS are required that specifically relate to the proposed amendment.

(e) *Testing undertaken*

The DRMS has completed beta testing. Part of the purpose of the demand response programme is to further test the functionality of the DRMS ahead of the need for non-transmission solutions arising in the upper North Island.

H17 Current and forecast expenditure

We did not make the proposed budget for the demand response elements of the Upper North Island Dynamic Reactive Support Investment Proposal publicly available at the time of the submission as we did not want to influence any subsequent tender process. Given we are still in the process of discovering the value that participants place on their demand response we are of the view that it would be prudent to continue with this approach

Given this application only relates to an amendment in the Grid outputs and does not include an application to increase the major capex allowance for the project (see H18 (5) below), we think it reasonable to omit actual and forecast cost information.

It should be noted that the demand side initiatives are being run within our standard project procedures and are subject to the same governance rules as our other major capital projects. We are currently within the allocated budget and are not forecasting to exceed it.

(2) *In case of a non-transmission solution:*

Not applicable for the reasons outlined above.

(a) *total costs incurred proposed to be classified as recoverable costs*

Not applicable for the reasons outlined above.

(b) *total costs incurred in relation to assets to be commissioned in relation to the non-transmission*

Not applicable for the reasons outlined above.

- (c) *forecast remaining costs to be classified as recoverable costs*

Not applicable for the reasons outlined above.

- (d) *forecast remaining costs incurred in relation to assets to be commissioned in relation to the non-transmission solution*

Not applicable for the reasons outlined above.

H18 Reasons for making the application

- (1) *Reason for applying, including:*

- (a) *description of key factors leading to the application*

The key factor leading to this application was our assessment that by extending the geographical scope of the demand response programme to the whole of New Zealand, we would:

- be able to test more robustly the design of our price responsive and security demand response products as well as the processes and technology for calling, verifying and paying for demand response.
- incentivise wider participation in future programmes, thus increasing the supply of demand response and potentially further reducing the costs, thereby providing benefit to consumers in the long term from deferring transmission investment.

- (b) *commentary on the extent to which each key factor is within Transpower's control and actions taken to mitigate it.*

Given the use of demand response as a non transmission solution is a relatively new concept, we did not know with any certainty at the time of the Grid Upgrade approval what approach would work in the development of the resource, hence the output being to “undertake a **range** of demand side initiatives”..

Following an unsuccessful tender for demand response in 2011, we re-scoped the project to focus on how we minimise the barriers to entry for demand response providers. This included the installation of the DRMS.

To ensure we encourage as much new demand response as we can, we decided not to restrict the latest programme to the UNI region.

Future programmes will focus on the development of brand new demand response resource and we may restrict this to the regions where we will most likely need it in the future. However, at this stage,

we are still learning about the resource and there are benefits in testing a wide range of resource.

Whilst the cost and quantum of demand response is largely outside our control, the decision to extend the geographical region was entirely ours.

- (c) *commentary on the extent to which each key factor was reasonably foreseeable by Transpower before approval of the major capex proposal*

Given we have not had sufficient demand response at an economic price to use as an NTS for any of our grid investments to date, the number and diversity of demand response sources in the upper North Island region was not reasonably foreseeable before approval of the Grid Upgrade Plan 2009.

- (2) *Description and, where relevant, quantum of any current key assumptions different to those relied upon in applying the investment test in the major capex proposal*

The investment proposal did not expressly contemplate the programme, but did contemplate the development of new technologies to facilitate demand-side initiatives.

- (3) *Description of the outcome of applying the investment test as it was applied in the major capex proposal modified by the proposed amendments and key assumptions described in subclause (2), including all relevant calculations and justifications for any exercises of judgment*

The proposed amendment would not have had any impact on the application of the investment test. The proposed amendment does not reflect a change to any assumption made in the investment proposal.

- (4) *Explanation as to why making the proposed amendment would promote the long-term benefit of consumers*

We consider that this application for an amendment of outputs for the Upper North Island Dynamic Reactive Support investment proposal promotes the purpose of Part 4 of the Commerce Act, being to promote the long-term benefit of consumers in markets where there is little or no competition and little or no likelihood of a substantial increase in competition, by promoting outcomes that are consistent with outcomes produced in competitive markets.

The proposed amendment will allow us to robustly test the design of our price responsive and security demand response products and the processes and technology for calling, verifying and paying for demand response, before the

need for potential non transmission solutions in the upper North Island arises. We hope to access economic demand response which can be used as a reliable alternative to transmission solutions in the upper North Island, and eventually elsewhere.

Should we be successful at developing and establishing demand response which can be used to economically defer future transmission investment, the costs of providing transmission will reduce and as a result consumers will benefit.

- (5) *Where no application for amendment to the major capex allowance or maximum recoverable costs, as the case may be, is being made concurrently, explanation as to why that allowance or those costs will remain appropriate were the proposed amendment to approved major capex project outputs made*

The proposed amendment will not increase the forecast end cost of the demand side elements of the investment proposal, nor will it require an increase in the major capex allowance.

The original proposal assumed we would contract for 60MW of demand based on costs from the 2007/08 upper south island trial. These were substantially higher than the costs we have been offered through the most recent tender and we will potentially have access to more demand response at lower cost than originally envisaged.

Having taken the approach we have, we are of the view that we are providing incentives for participation which is increasing the supply of demand response as a resource whilst driving the cost downwards, thus promoting the long term benefits of consumers.

Enclosure: Chief Executive Certification

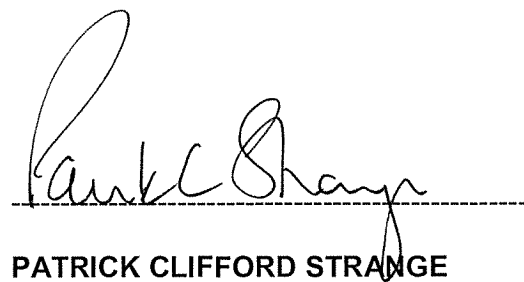
CHIEF EXECUTIVE OFFICER'S CERTIFICATION AS TO MAJOR CAPEX PROJECT AMENDMENT (APPLICATION FOR AMENDMENT OF OUTPUTS FOR UPPER NORTH ISLAND DYNAMIC REACTIVE SUPPORT PROJECT)

(Transpower Capital Expenditure Input Methodology Determination 2012, clause 9.3.1) (the Capex IM)

I, Patrick Clifford Strange, Chief Executive Officer of Transpower New Zealand Limited (**Transpower**) hereby Certify, in relation to all information provided in accordance with Schedule H to the Capex IM with respect to the Application for Amendment of Outputs for the Upper North Island Dynamic Reactive Support Project, that having made all reasonable enquires, it is my belief that:

- (a) the information was derived from and accurately represents, in all material respects, the operations of Transpower; and
- (b) all parts of the major capex project to which the information relates have been approved in accordance with the applicable requirements of Transpower's director and management approval policies; and
- (c) the application for amendment of project outputs complies, in all material respects, with the requirements of clause 7.4.2 of the Capex IM.

DATED: 18. 8. 13



PATRICK CLIFFORD STRANGE

