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Proposal to amend the Electricity Industry Participation Code 2010

Send to info@ea.govt.nz or fax to 04 4608879

This form is to propose:

☐ An amendment to an existing clause in the Electricity Industry Participation Code 2010; or
☐ A new clause in the Electricity Industry Participation Code 2010.

Please complete as many sections of this form as possible and email or fax it to the above number/email address. The more information you include in your proposal, the faster your proposal will be able to be assessed/progressed.

Proposer's details

Name:	Ross Parry
Position in company:	Planning and Regulatory Manager
Company:	Transpower
Telephone:	04 590 6862
Email address:	ross.parry@transpower.co.nz
Signature:	
Date:	13 February 2015

The proposal / preferred option

Suggested proposal name (please keep it short)	TPM Operational Review: HVDC charging
State the objective of your proposal.	To improve competition, efficiency and reliability in the electricity market by reducing the incentive of South Island generators to withhold generation capacity to avoid HVDC charges.
Does the proposal relate to an	Yes.

<table>
<tr><td>existing Code clause? If yes, please state the full clause reference.</td><td>Clauses 3, 32, 33 and 34 of Schedule 12.4.</td></tr>
<tr><td>Describe the specific amendment(s) that you propose be made to the Code OR attach a draft of the proposed Code amendment (optional). Note the Code drafting manual provides guidance on drafting.</td><td>We propose to replace the current allocator for HVDC charges, based on highest injections (the HAMI charge, MW), with an allocator based on average energy (proposed as the SIMI charge, MWh). The SIMI charge is a five year average MWh. This charge would start from pricing year 2021/22. We propose to transition to it over four years, outlined below in table 1.

Table 1 Transition period for HVDC charge
<table>
<tr><th colspan="2">Pricing Year</th><th>April 2017 – March 2018</th><th>April 2018 – March 2019</th><th>April 2019 – March 2020</th><th>April 2020 – March 2021</th></tr>
<tr><td colspan="2" rowspan="2">Four year transition (HAMI component is incentive free from 1 Sep 15)</td><td rowspan="2">75% HAMI

25% MWh</td><td rowspan="2">50% HAMI

50% MWh</td><td>25% HAMI

75% MWh</td><td rowspan="2">100% MWh</td></tr>
<tr><td></td></tr>
<tr><td rowspan="2">Pricing Years, (PY) and Capacity Measurement Periods[1] (CMP)</td><td>HAMI</td><td>PY13/14
PY 14/15
CMP14/15
PY14/15 (to Aug 2015)</td><td>PY14/15
CMP14/15
PY14/15 (to Aug 2015)</td><td>CMP15/16
PY14/15 (to Aug 2015)</td><td></td></tr>
<tr><td>SIMI</td><td>CMP15/16</td><td>CMP15/16
CMP16/17</td><td>CMP15/16
CMP16/17
CMP17/18</td><td>CMP15/16
CMP16/17
CMP17/18
CMP18/19</td></tr>
</table></td></tr>
<tr><td>Identify how your proposal would support the Authority's objective, as set out in section 15 of the Electricity Industry Act 2010 (Act)[i], specifically addressing the competition, reliability and efficiency dimensions of the objective.

Which of the purposes listed in section 32(1) of the Act does your proposal most closely relate to?</td><td>Our proposal would support the statutory objective by reducing or eliminating the incentives of South Island generators to withhold peak generation as a means of limiting their HVDC charges.[2]

The consequences / outcomes sought include:

• Section 32(1) (a): Greater competition from and amongst South Island generation in times of peak demand.

• Section 32(1) (b): Improved reliability during tight supply conditions as South Island generation would not be withheld during these times (refer to the Electricity Authority's 2014 Winter Grid Emergencies: Market Performance Enquiry, 9 December 2014 for confirmation of this.)

• Section 32(1)(a) and (c): Improved dispatch (allocative) efficiency and competition as South Island generation capacity would no longer be withheld to avoid HVDC charges, which has resulted in higher cost North Island generation capacity being dispatched: Scientia Consulting estimate efficiency gains (reduced system costs) of $12.8m per annum or $109.6m over 15 years (PV, 8% discount rate).

• Improved dynamic efficiency by reducing a dis-incentive to invest in South Island generation

• The long-term interests of consumers will be promoted by the above improvements in market operation. Wholesale electricity prices may also reduce.

<u>Transition</u>

We propose to move to the five year average MWh after a four year transition period. This transition is intended to (a) eliminate any HAMI related incentive effects from 1</td></tr>
</table>

[1] Pricing Year is 1 April to 30 March and Capacity Measurement Period is 1 September to August
[2] Refer to Attachment B: TPM Operational Review: Background and Supporting Information 13 February 2015.

	September 2015 (b) preserve price stability during the transition period (c) avoid unproductive wealth transfers. We consider this will be straightforward to implement. The transition mechanism described above was not included in our consultation so we are unable to gauge the level of support for this. We did ask submitters about transition or phase in and the responses were focussed on RCPD. As we identify in Attachment B, we consider there are several approaches to moving to the SIMI charge which are likely to produce similar efficiency benefits. This is an area that may benefit from specific consultation by the Authority.
Identify whether you consider your proposed change to be urgent, providing supporting rationale.	This Code Amendment Proposal is not being made under urgency. The timing of the proposals was discussed and agreed with the Authority to enable the Authority to make a decision (indicative timing June 2015) in time for the changes to be implemented by 1 September 2015 and to take effect for Capacity Measurement Period (CMP 2015/16) 1 September 2015. Our expectation is that this change would need to be in place at the beginning of the CMP. On that basis, if a decision is not made and implemented before 1 September 2015 the change would be delayed for one year with foregone quantified efficiency benefits and other unquantified benefits (improved reliability, dynamic efficiency etc).
Please set out the expected costs and benefits of your proposal. These should include your assessment of the direct cost to develop and implement the proposed Code amendment, and the consequential costs and benefits as a result of the amendments, to all affected parties.	<u>Costs</u> We estimate one off costs to Transpower to implement the proposal at less than $10k. We expect the Authority may incur similar one off costs to process this code change proposal (which will be incurred regardless of whether the proposal is approved or not, and should not impact on the Authority's decision) and that South Island generators may incur low level administration costs associated with the change to a MWh charge from the existing HAMI charge. We assume those costs to be equivalent to our own administration costs ($10k per generator, $50k in total). A MWh charge decreases the influence of transmission prices on generator behaviour during high price periods but increases influence at low (less than around $7/MWh) periods. The benefits analysis below is net of these costs. <u>Benefits</u> We estimate ongoing savings to Transpower of $3k per annum from reduced administrative costs associated with processing exceptional operation circumstances (EOC) applications from South Island generators. We assume a similar saving from avoiding costs associated with preparing EOC applications from South Island generators. We assume no other ongoing change to administrative costs for any party. The proposal will reduce withholding of South Island peaking generation capacity. This will result in more efficient generation dispatch and lower system costs. It should also result in lower wholesale electricity prices. The net efficiency impact (system costs) is estimated by Scientia Consulting at $12.8m per annum. <u>Summary of costs and benefits</u> The analysis uses a discount rate of 8%, excludes wealth transfers and shows net benefits of $110m (15 year PV). The modelling reflects a post transition SIMI charge where SIMI is based on injection data from 5 CMPs. During the transition, any incentive effects provided by the MWh charge are diluted (which means efficiency benefits during the transition are likely to exceed modelled benefits).

<table>
<tr><td></td><td>
<table>
<tr><th>Cost/benefits (net) $m</th><th>Year 1</th><th>5 yr PV</th><th>10 yr PV</th><th>15 yr PV</th></tr>
<tr><td>Administration</td><td>-$0.07</td><td>-$.05</td><td>-$.03</td><td>-$.02</td></tr>
<tr><td>System (net)</td><td>$11.85</td><td>$51.11</td><td>$85.89</td><td>$109.59</td></tr>
<tr><td>Total</td><td>$11.78</td><td>$51.06</td><td>$85.86</td><td>$109.57</td></tr>
</table>
</td></tr>
<tr><td>Who is likely to be substantially affected by this proposal?</td><td>The following parties are substantially affected by this proposal
• North Island generation: displaced by South Island generation during peaks/lower wholesale electricity prices during peaks.
• South Island generation: greater utilisation of generation capacity.
• Wholesale electricity market purchasers and their customers.</td></tr>
<tr><td>Identify whether you consider (providing supporting rationale):
(i) your proposed change to be technical and non-controversial; or
(ii) there is widespread support for your proposed change among the people likely to be affected; or
(iii) there has been adequate prior consultation so that all relevant views have been considered.</td><td>(i) Technical and non-controversial
The MWh option itself did not elicit any controversy and was supported by virtually all submitters who commented.
A small minority of parties objected to consideration of HVDC charges within this operational review because they considered it beyond the scope of the operational review and best addressed through the Authority's TPM review.[3]
(ii) Widespread support
There is widespread support for this option. It was expressly supported by Contact Energy, Genesis Energy, Meridian, Mighty River Power, Pioneer Generation, Powerco and Trustpower.
Orion was the only submitter that preferred an alternative option (diluted HAMI).
Meridian described the MWh proposal as "the least-worst of the options presented" on the basis that its preferred options would require a change to the TPM Guidelines to enable a shift away from South Island generators paying the full cost of the HVDC.
The transition mechanism was not included in our consultation so we are unable to gauge the level of support for this. We did ask submitters about transition or phase in but the responses focussed on RCPD.
(iii) Adequacy of prior consultation
We consider there has been comprehensive (more than adequate) consultation on our Code Amendment Proposals, and all relevant views have been considered.
This has consisted of:
• Testing with the Authority and a subset of our customers and interested parties whether they considered that we should undertake a TPM Operational then notifying stakeholders of review, and maintaining details/updates on our website.
• Issuing an Initial Consultation Paper that invited comments on our proposed TPM Operational Review process, our initial assessment of the potential problems with the TPM and on options we identified for addressing these problems.
• Issuing an Update Paper summarising key themes from submissions and briefly sharing our views on these themes, responding to a small number of specific issues, and outlining the development of our thinking and how, in light of submissions, we intended to proceed.</td></tr>
</table>

[3] Attachment B: TPM Operational Review: Background and Supporting Information 13 February 2015. The Second Consultation Paper also addressed concerns about the review and its scope, in response to submissions on the Initial Consultation Paper, at section 2.1.2.

	• Issuing a Second Consultation Paper that identified and analysed options for improving the TPM, set out our proposals, and detailed our responses to submissions on the Initial Consultation Paper and how we took these submissions into account. • Undertaking a series of Workshops (Auckland, Christchurch and Wellington) as part of the consultation on the Second Consultation Paper and a series of bilateral meetings with the Authority, customers and other interested parties. The substantial majority of submitters have supported our consultation process. Although we did consult on the question of transition we did not set out any specific proposals in relation to HVDC. As we identify in Attachment B, we consider there are several approaches to this which are likely to produce similar efficiency benefits. This is an area that may benefit from further consultation by the Authority.
Why this is your proposed option?	We consider this proposed option will significantly improve the competition, efficiency (allocative and dynamic) and reliability of the electricity market at minimal cost, and: • Would substantially address the problems with the current HAMI charges identified in the TPAG Report, the Electricity Authority's Problem Definition Working Paper and 2014 Grid Emergencies Enquiry and section 7.2 of our Reasons Paper[4]. • Our assessment of the alternative options for amending the HVDC charges concludes this option would best promote the objective in section 15 of the Electricity Industry Act. • The option is supported by virtually all submitters that commented on the HVDC charges.
Any other relevant information you would like the Authority to consider.	Refer to Attachment B: TPM Operational Review: Background and Supporting Material, 13 February 2015 and all other accompanying material.

Assessment of alternative options

Please list and describe any alternative means of achieving the objective you have described for your proposal. For each alternative, please provide the information in the table below (i.e. repeat this table below for each alternative). The list of alternatives should include both regulatory (i.e. Code amendments) and non-regulatory options (e.g. education, information, voluntary compliance). If you have a preferred option please identify it and explain why it is your preferred option.

Option 1: HVDC charges based on diluted HAMI

Brief description of an alternative means of achieving the objective. Note if this is your preferred option.	Alternative Option 1: Diluted HAMI e.g. N = 10,000[5]

[4] We recognise that this review cannot address certain dynamic efficiency issues concerns relating to the allocation of HVDC costs to South Island generators

[5] Attachment B: TPM Operational Review: Background and Supporting Information 13 February 2015

The extent to which the objective of your proposal would be promoted or achieved by this option.	This option would support the Authority's proposal by reducing the incentives of South Island generators to withhold peak generation as a means of reducing their HVDC charges. The consequences would include: • Section 32(1) (a): Greater competition from and amongst South Island generation in times of peak demand. • Section 32(1) (b): Improved reliability during tight supply conditions as South Island generation would not be withheld during these times (refer to the Electricity Authority's 2014 Winter Grid Emergencies: Market Performance Enquiry, 9 December 2014 for confirmation of this.[6]) • Section 32(1)(a) and (c): Improved dispatch (allocative) efficiency and competition as South Island generation capacity would no longer be withheld to avoid HVDC charges, which has resulted in higher cost North Island generation capacity being dispatched: Scientia Consulting estimate efficiency gains (reduced system costs) of $10.7m per annum or $91.6m over 15 years (PV, 8% discount rate) The long-term interests of consumers will be promoted (indirectly) by the above and (directly) by resulting lower wholesale electricity prices. This option is not preferred because:[7] • Our quantified assessment of a diluted HAMI and MWh charges indicated the MWh option delivers larger efficiency benefits (reduced system costs) and we are more confident the MWh charge option will deliver the assessed benefits. • There was a strong preference for MWh over diluted HAMI from submitters. • Our assessment, and that of submitters, is that a MWh charge would be simpler and more likely to provide improved outcomes than a diluted HAMI.
Who is likely to be substantially affected by this option?	The following parties would be substantially affected by this proposal • Wholesale electricity market purchasers and their customers: who should benefit from lower prices reflecting greater allocative and, in the long term, dynamic efficiency • North Island generation: Displaced by South Island generation during peaks/lower wholesale electricity prices during peaks; • South Island generation: Greater utilisation of generation capacity.
The expected costs and benefits of this option, including direct costs to develop it, and consequential costs and benefits to all affected parties.	<u>Costs</u> We estimate one off costs to Transpower to implement the proposal at less than $10k. We expect the Authority may incur similar one off costs to process this code change proposal (which will be incurred regardless of whether the proposal is approved or not, and should not impact on the Authority's decision) and that South Island generators may incur low level administration costs associated with the change to a MWh charge from the existing HAMI charge. We assume those costs to be equivalent to our own administration costs ($10k per generator, $50k in total). A MWh charge decreases the influence of transmission prices on generator behaviour during high price periods but increases influence at low (less than ca. $7/MWh) periods. The benefits analysis below is net of these costs. <u>Benefits</u> The proposal will reduce withholding of South Island peaking generation capacity.

[6] Relevant excerpts are cited in Attachment B: TPM Operational Review: Background and Supporting Information, 13 February 2015

[7] Ibid.

	This will result in more efficient generation dispatch and lower system costs. It should also result in lower wholesale electricity prices. Modelling by Scientia Consulting shows the net efficiency impact (system costs) of estimated at $10.7m per annum or $91.6m over 15 years (PV, 8% discount rate) We note that submitters, in particular South Island generators, had reservations about whether the modelled benefits could be achieved.[8]

Option 2: Name Plate capacity charges

Brief description of an alternative means of achieving the objective. Note if this is your preferred option.	Alternative Option 2: Incentive-free or name plate capacity charges[9]
The extent to which the objective of your proposal would be promoted or achieved by this option.	This has not been assessed in detail as the incentive-free/name plate option was eliminated prior to this stage of the review. NERA (for the New Zealand Electricity Industry Steering Group) assessed that "the charge should in no way affect the usage/bidding decisions on generators …"[10] TPAG then undertook a quantified analysis that determined it was the HVDC pricing option which would result in the greatest efficiency gains and consumer welfare improvements.[11]
Who is likely to be substantially affected by this option?	South Island generators; especially generators that have low capacity utilisation e.g. wind generators.
The expected costs and benefits of this option, including direct costs to develop it, and consequential costs and benefits to all affected parties.	Expected costs and benefits have not been quantified by this review. NERA (for the New Zealand Electricity Industry Steering Group) assessed that "the charge should in no way affect the usage/bidding decisions on generators … The potential disadvantage …is that it does not address incentives to eschew from investing in South Island capacity (particularly peaking capacity), although … this is not necessarily detrimental if North Island investment is to be preferred."[12] TPAG then undertook a quantified analysis which determined it was the HVDC pricing option that would result in the greatest efficiency gains and consumer welfare improvements. TPAG assessed that incentive-free would result in an improvement in consumer welfare of between $952m and $1,297m in NPV terms. This compared to its assessment of postage stamp (-$253m to $93m) and postage stamp transition ($138m to $635m).[13] TPAG rejected this option on the basis of "Strong reservations about arbitrary exercise of regulatory powers that would compromise good regulatory practice"[14] and "negative incentives for incumbent SI

[8] Contact, Transpower TPM operational review: Second consultation paper, 19 December 2014, page 1.
[9] Attachment B: TPM Operational Review: Background and Supporting Information
[10] NERA, report for the New Zealand Electricity Industry Steering Group, New Zealand Transmission Pricing Project, 28 August 2009, page 92.
[11] TPAG, Transmission Pricing Analysis, report to the Electricity Authority, 31 August 2011, Table 18.
[12] NERA, report for the New Zealand Electricity Industry Steering Group, New Zealand Transmission Pricing Project, 28 August 2009, page 92.
[13] TPAG, Transmission Pricing Analysis, report to the Electricity Authority, 31 August 2011, Table 18.
[14] Ibid Table 2.

	generators to lobby actively to have the charge removed on the basis that it is unfair … and arbitrary".[15] We have ruled out proposing incentive-free/name plate capacity on the basis of: • Most if not all of the potential benefits can be achieved through a MWh charge. • It could result in a reduction in dynamic efficiency • Clear opposition from submitters on the Initial Consultation Paper. • Changing to name plate capacity would be a significant departure from current TPM settings. • Concern that changes of this nature could heighten dispute, elevating suppliers concerns of regulatory risk in New Zealand and lead to perverse outcomes.

Option 3: HAMI charges but de-rate charges in USI

Brief description of an alternative means of achieving the objective. Note if this is your preferred option.	Alternative Option 3: De-rated HVDC charges in USI[16]
The extent to which the objective of your proposal would be promoted or achieved by this option.	This option would not achieve the core objective of removing incentives for South Island generators to withhold peaking generation capacity. It would potentially have other benefits including principally to reduce a deterrent to generation investment in the import constrained USI region.
Who is likely to be substantially affected by this option?	• LSI generators, as they would pay a slightly larger proportion of the HVDC costs (although this would be partly ameliorated if there is new generation in the USI) • USI generators, as they would pay a smaller proportion of HVDC costs.
The expected costs and benefits of this option, including direct costs to develop it, and consequential costs and benefits to all affected parties.	Expected costs and benefits have not been quantified by this review. We decided not to pursue this option at this point because: • The option gained little support from submitters. It was expressly opposed by: Contact Energy, ENA, Genesis Energy, Meridian, and Powerco. • We consider it would result in a substantive change to the design of the current TPM – changing the current North v South Island locational signal to North Island (preferred), USI (second preferred), and LSI (least preferred). • Any benefits are likely to materialise in the medium to longer term which means the foregone benefits from deferring this proposal are likely to be low at this point. We note that the Authority may wish to consider this option as part of its own TPM review. It has also been suggested by some submitters that derating may be

[15] TPAG, Transmission Pricing Analysis, report to the Electricity Authority, 31 August 2011, Table 18 paragraph C.4.1.
[16] Attachment B: TPM Operational Review: Background and Supporting Information, 15 February 2015

	inconsistent with the TPM Guidelines. We have not considered it necessary to form a view on this point as we have decided not to pursue this option at this point. We may reconsider this proposal in a future operational review, subject to the outcome of this and the Authority's TPM reviews.

[1] ***Section 15: Objective of Authority***

The objective of the Authority is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.