

TRANSPower NEW ZEALAND LIMITED

Submission to the Electricity Authority on
Consultation Paper – Demand-side Bidding and
Forecasting

July 2011

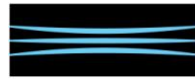


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Executive summary

Transpower has been actively involved with, and supportive of, the development of demand side response in the wholesale electricity market since 2000 and welcomes the demand side bidding and forecasting (DSBF) initiative as the first step in this process. Demand side participation is an important step towards improving the efficiency of the wholesale market design and this is reflected in the inclusion of demand side initiatives in section 42 of the Electricity Industry Act 2010.

Transpower supports the introduction of the non-response and price-responsive schedules but has identified some details in the proposal that could detract from the successful implementation of the DSBF initiative. For each issue, Transpower has made a recommendation that would address the problem identified.

In addition, Transpower has carefully reviewed the proposed DSBF Code amendments and found a number of clauses that would benefit from some changes, either to improve clarity or to correct errors. The system operator has provided the Authority with a set of minor drafting amendments to assist it with this process; more substantial drafting issues are included in this submission.

Transpower is concerned that the Authority has included within this Code change proposal other amendments that do not relate to the DSBF proposal, yet these have not been specifically identified or the reasons for making them explained. This is not good practice and makes it difficult to assess the impact of the proposed changes. Transpower would recommend that the Authority be more specific about such amendments in any future proposals.

The substantial issues noted in this submission are:

- the importance of accurate input information to ensure accurate schedules and therefore forecast prices;
- the role of the system operator in respect of the load forecast;
- the interrelationship between the DSBF proposal and the dispatchable demand proposal;
- the process and methodology of GXP determination including timing issues;
- the relaxation of the bid revision threshold;
- the use of the PRS and adjustments to meet the dispatch objective;
- information from distributors regarding load management and load shifting;
- the time allowed for preparation of the new schedules;
- grid owner notification about the connection of new GXPs.

Transpower has also identified an amendment to the proposed design of the DSBF initiative that would simplify the proposal and address the inequitable treatment of purchasers at non-conforming GXPs, compared with those at conforming GXPs, that exists within the current design.

Given that the DSBF initiative has been under discussion by the industry for a long time, Transpower looks forward to its completion and is on track to meet the June 2012 implementation date signalled in the Authority's consultation paper.

1. Introduction

This is Transpower New Zealand Limited's submission on the Electricity Authority's 20 June 2011 consultation paper *Demand-side Bidding and Forecasting*.

The demand-side bidding and forecasting (DSBF) initiative has been under development by the electricity industry for some time and the system operator has been deeply involved with this development process. In this submission, Transpower has focussed its submission on the issues that relate to successfully achieving the outcomes the Electricity Authority (Authority) is seeking from the implementation of the DSBF initiative.

The DSBF proposal is the first of the Authority's demand-side initiatives to be implemented. The system operator has always seen the implementation of DSBF as a necessary first step in the implementation of other demand-side initiatives like dispatchable demand. In itself, the implementation of the DSBF initiative should meet most of the demand-side requirement set out in section 42 of the Electricity Industry Act 2010 (Act). However, it will be important to allow the changes from DSBF to bed down, and to start to measure the results of that initiative, before continuing to implement other demand-side initiatives.

Due to the progressive way in which the demand-side initiatives are being rolled out through these two projects it is important that the DSBF proposal be able to be analysed in conjunction with a full understanding of the dispatchable demand design and proposed Code amendments. Given the limited time period in which Transpower has been able to consider both proposals together (only one week), there may be implications for one or both that we have not been able to understand fully and comment on.

1.1 Structure of Transpower's Response

Transpower's response is structured as follows:

- Section 2: Substantial issues raised in the consultation paper which may affect the successful implementation and operation of the DSBF proposal. These issues will have to be addressed prior to the go live date for the DSBF initiative.
- Section 3: Other important issues to consider when finalising the DSBF proposal.
- Section 4: Issues related to the transition and implementation of the DSBF proposal.
- Section 5: Comments relating to the general 'tidy up' rule changes where Transpower does not consider that the proposed changes are merely technical or non-controversial.
- Section 6: Transpower's responses to the questions raised in the consultation document.
- Section 7: Detailed comments on the proposed Code drafting.

2. Substantial issues

2.1 Importance of accurate input information to ensure accurate schedules and therefore forecast prices

The DSBF proposal has a stated policy objective of improving demand-side inputs into advance schedules. This is because schedules using purchasers' bids have not historically provided good advance indications of nodal prices. The Authority proposes to make the advance schedules more accurate, and therefore ensure that the forecast prices in those schedules give a better indication of final prices, by using a central demand forecast instead of bids from purchasers at conforming GXPs.

It is therefore not recommended to include within the DSBF proposal aspects that detract from the accuracy of the advance schedules, because this will in turn reduce the ability of forecast prices to indicate what final prices may be. If less accurate schedules are produced as a result, it is unclear whether the potential decrease in benefits that might result would counterbalance the benefits sought from reducing purchasers' compliance costs.

The two aspects of the proposal, in particular, that have the potential to detract from the accuracy of the advance schedules are:

- a) the possibility of determining a GXP that has the characteristics of conforming load (i.e. it is stochastic) to be categorised as non-conforming in order to allow one or more purchasers to participate in the proposed dispatchable demand arrangements, thus requiring all purchasers at that GXP to provide nominated bids; and
- b) the relaxation of the bid revision threshold for nominated bids from the lower of 10% or 20MW to the lower of 20% or 20MW.

2.1.1 GXP determination

The point of the process to determine GXPs as conforming or non-conforming was so that the system operator's forecast is used where the behaviour of load is stochastic (largely predictable) and purchasers' bids at non-conforming GXPs are used instead of the load forecast where purchasers' demand requirements make a stochastic forecast unusable.

Merely changing the status of the GXP in name does not change its inherent characteristics. It is the characteristics of the load at each GXP that determine whether it is stochastic or not, not how the GXP status is labelled.

2.1.2 Relaxation of the bid revision threshold

Although there are unlikely to be more than about 12-15 GXPs where purchasers are required to submit nominated bids, the relaxation of the bidding threshold may make the advance schedules less accurate than they would otherwise have been had purchasers had a narrower requirement in relation to the revision of bids.

Detailed quantitative work on the effect of forecast price accuracy has not been undertaken but it is worth noting that the relaxation of bidding

accuracy will have least effect on forecast prices in unconstrained circumstances (when forecast accuracy is of least concern) but the greatest effect on constrained grid pricing when the market's concern is at its highest and forecast prices are of greatest value.

The relaxation of the threshold may also create some specific issues in relation to managing security and will contribute to the 'noise' in the system that makes managing security hard to perform. Comments on this point are made in section 2.5 of this submission.

Recommendations

- Do not 'deem' GXPs with the characteristics of conforming load to be non-conforming GXPs unless the load characteristics at that GXP warrant that determination.
- Do not relax the bid revision threshold from 10% to 20% for purchasers at non-conforming GXPs.

2.2 Role of the system operator in respect of the load forecast

The load forecast is currently developed and used by the system operator to assist it to manage security. It has been adopted by the market for the further purpose, through the voluntary publication of the Special Winter Schedule (SWS), of assisting the market to discover forecast prices 36 hours out from real time. This is because the information from the Pre-Dispatch Schedule (PDS) which uses purchasers' bids has been shown to be less accurate than a central forecast for the great majority of GXPs.

To date, the system operator has been held accountable for its performance with respect to managing security (via its PPOs) and it is monitored to assess how it performs in this role. The DSBF proposal means that the system operator's load forecast is required to be used for the purposes of price discovery by the market rather than merely as a tool used by the system operator for managing security. However, it is not clear what the performance and monitoring regime will be around the load forecast, and what role the system operator, the Authority, and participants will play in this process.

Firstly, although the Code requires the system operator to provide load forecast accuracy reports, it is not clear for what purpose these are provided. If the Authority's intention is to use these reports to monitor the accuracy of the load forecast proactively for the purpose of price discovery, then it is important that the information in such reports be not merely a reflection of one particular aspect of the output but an aggregated performance measure across a wider range of relevant statistics.

Recommendation

- Incorporate the appropriate accountability on the system operator into clauses 13.7A and 13.102A. We recommend that the wording be discussed with the system operator before it is made final.

Secondly, it needs to be made clear on what basis the system operator is providing advice within the GXP determination process – is this for operational feedback or for obtaining a more accurate central forecast? This issue is further explored in section 2.4 below.

2.3 Interrelationship with dispatchable demand proposal

The Dispatchable Demand consultation paper, released on 13 July 2011, proposes that dispatchable demand be rolled out to purchasers at non-conforming GXPs in the first instance and preserves the option of proposing implementation to conforming GXPs at a later date. The categorisation of a GXP as conforming or non-conforming is therefore important to purchasers wishing to take part in the dispatchable regime.

The drafting of the DSBF Code has taken this consideration into effect in order to allow purchasers at a GXP with conforming characteristics to be re-classified purely in order to take part in dispatchable demand. Making this distinction purely for the purposes of the dispatchable demand proposal is not good practice and suggests that the Authority has not clearly understood the system operator's rationale for its recommendation to roll out dispatchable demand only to non-conforming GXPs at this stage.

Recommendations

- In the absence of the ability to fully consider the implications of reclassifying GXPs as non-conforming under both the DSBF and dispatchable demand proposals, do not include the provision under the DSBF proposal to classify GXP status other than for operational reasons.
- Do not make final Code recommendations to the industry based on future initiatives that the industry has yet to be consulted on. The consultation charter recommends that all consultation papers should be made available to the industry for a minimum of four weeks; in this case, the justification for the Code change (i.e. the dispatchable demand proposal) has been provided one week in advance of the DSBF submission date.

2.4 Process of GXP determination

Transpower has two overall comments in relation to the process of GXP determination. The first relates to the process itself and the second relates to the party that applies the process.

2.4.1 The determination process

The DSBF proposal has two approaches to determining GXP status, one being the application of a detailed methodology based on statistical predictability, and the other a discretionary process based on consultation with affected parties.

Transpower has two concerns that relate to the discretionary process.

- a) There are no criteria for deciding to depart from the methodology and use the discretionary process. If the purpose of the methodology relates to the predictability of stochastic load, then any discretionary criteria

should relate to this. If the Authority's objective in allowing a discretionary process is motivated by other drivers, then making the redetermination is likely to affect the quality and performance of the load forecast.

- b) The basis for the system operator's advice in the process of determining GXP status is unclear. Is this advice in relation to the system operator's ability to manage security and hence its PPOs, or is it in relation to the system operator's ability to meet a particular performance standard in relation to the load forecast model?

Recommendations

- Set appropriate criteria for deciding to depart from the determination methodology. For example, possible criteria could be based on the operational characteristics of the relevant GXP that may make it more difficult for the system operator to manage its PPOs, or criteria that relate to the ability to predict stochastic load and produce accurate forecasts.
- Clarify the basis for the system operator's advice in the determination process (i.e. is it in relation to management of its PPOs, or in relation to the likely accuracy of the advance schedules, or both?).

2.4.2 Appropriate roles

Transpower believes that the Authority should not take an operational role in the selection of conforming and non-conforming GXPs. It is important that the separation of the roles of policy and operation be observed; this proposal blurs those boundaries. The proposal also means that operational changes would be bound into unnecessarily long policy decision time-frames.

The policy, including the methodology used for determining conformity and non-conformity should be incorporated into the Code and hence made available to all participants. This is clearly the role of the Authority. These rules should then be applied operationally.

Recommendation

- Transpower recommends that the operational role of applying the methodology set out in the Code to determine the conforming and non-conforming GXPs be undertaken by the system operator.

2.5 Relaxing bid revision threshold – impact on system operator's ability to meet its PPOs

The proposed clause 13.19A requires a purchaser at a non-conforming GXP to immediately revise its nominated bid if it expects, or ought reasonably to expect, that its purchases at the various prices indicated in the nominated bid will be different from the relevant bid quantity by more than 20MW or 20% of the relevant nominated bid quantity (whichever is smaller).

As noted above, any reduction in the obligation on participants to update bids at non-conforming GXPs degrades the ability of the market system to

facilitate price discovery in advance schedules. In some cases, it also can have adverse effects on security optimisation. This problem can be worse at certain specific locations (depending on the characteristics of the GXP), and where a participant takes load from multiple non-conforming GXPs at a single substation.

For example, if a participant bid 60MW at each of three non-conforming GXPs, at a single substation, and load was forecast to reduce by 10MW at each GXP, there would be no obligation on the participant to revise its bids. This is despite the fact that it knew its total load at that substation was forecast to reduce by 30MW. This can have implications for the system operator's ability to manage security and hence meet its PPOs. It may also result in inefficient scheduling of generation resources and have associated implications for constrained on and off payments.

A potential way of mitigating this issue would be to modify the clause so it applied to a participant's absolute load change across all non-conforming GXPs at each substation, requiring all nominated bids to be updated at that substation where the threshold is exceeded. Absolute load change is suggested to capture scenarios where load is shifted from one GXP to another on either side of a system split. Alternatively, the system operator would like to reserve the option for it to identify a lower change limit at specified non-conforming GXPs for managing security.

Recommendations

- Do not relax the bid revision threshold from 10% to 20% for purchasers at non-conforming GXPs.
- Where a substation has more than one GXP, mitigate the issue so it applies to a participant's absolute load change across all non-conforming GXPs at a substation.

2.6 No level playing field for purchasers

Having reviewed the detailed drafting of the DSBF proposal, Transpower notes that an inequitable situation exists between purchasers at conforming GXPs and purchasers at non-conforming GXPs.

At non-conforming GXPs, purchasers access price discovery by submitting nominated bids and nominated bids have associated compliance requirements such as the requirement that the nominated bid be a reasonable estimate of the electricity to be demanded at the GXP.

By contrast, purchasers at conforming GXPs can submit difference bids into a process of price discovery, but with no compliance requirements associated with that process; these parties have an advantage over purchasers at non-conforming GXPs.

The categorisation of GXPs as non-conforming is only intended to identify loads (generally industrial loads subject to production scheduling) that are more readily scheduled by their owners, while conforming loads are more readily centrally forecast. Beyond this fundamental distinction there is no logical need to treat conforming and non conforming GXPs (or their loads) differently.

If purchasers at both conforming and non-conforming GXPs were both able to submit a full range of difference bids, this would remove any inequities and an unnecessary distinction between participants. The common use of difference bids is not expected to change the functional design of DSBF within the SPD model and would simplify the market bidding structures. Additionally, this change would provide a common infrastructure for the introduction of dispatchable demand. Consequential amendments to the proposed set of DSBF Code provisions would be required to implement such a change.

Initial considerations suggest that the proposed change may not be significant, but there would need to be an investigation before this could be confirmed. If requested to do so by the Authority, the system operator would investigate this change to the scope of the DSBF proposal and advise of any impacts on costs and timeframes for implementation accordingly.

Recommendation

- Consider simplifying the design of the bid structure for conforming/non-conforming GXPs with a view to introducing a common dispatchable demand approach.

3. Other important issues to consider

3.1 Information from distributors regarding load management and load shifting

In section 4.5 of the consultation paper, the Authority notes that it has removed the requirement for purchasers and distributors at conforming GXPs to notify the system operator about a change in demand that could affect the system operator's ability to forecast demand accurately. This was following the system operator's concerns that it may be difficult to evaluate, receive, and use the information in its existing systems.

Recently, the system operator has commenced a project to improve the performance of its load forecast engine. The requirements for an improved load forecast engine will explicitly include the ability to receive information from distributors about their load management and load shifting operations. We expect that such information will materially improve the quality of forecasts for conforming GXPs.

However, the project is not sufficiently advanced to be able to propose detailed Code provisions at this stage, and distributors would need to consider any such proposals. Therefore, the system operator intends to work with distributors to determine what information can be provided and in what format. This would be done in parallel with the load forecast improvement project over the next 12-18 months. This might lead to a voluntary approach, or the submission of a Code amendment proposal, to reflect what has been discussed and agreed with distributors.

3.2 Timing for preparation of the new schedules

The Authority has indicated in its consultation paper, and has reflected in the proposed Code amendments, that the system operator can choose which publication timeframes to use in relation to the NRS and the PRS. This does not reflect the nature of the solution as discussed with the Authority. The solution being designed in the market system has the short schedules being prepared every 30 minutes and the long schedules being prepared every two hours.

The system operator went through an investigation process last year that examined the two options that the Authority describes in its consultation paper. That investigation process concluded that the solution selected was the only option available which met the key objectives of the Authority, i.e. it gives information to the industry without incurring the cost involved of redesigning the market systems database in the manner that would be required if 36-hour schedules were produced every thirty minutes.

Given that the Authority has agreed that this is the solution that should be developed, it does not make sense to include provisions in the Code that indicate the system operator has a choice of which publication timings to adhere to.

Recommendation

- Only include in the Code those provisions for the DSBF design that the Authority agreed the system operator should implement.

3.3 Timing and implementation of changes in GXP status

In order to make the necessary changes to market systems, the system operator needs to know not just the date, but the relevant trading period from which the change will take effect. Purchasers will also need to know this so that they can make changes to their own systems and processes.

Under clause 13.7(2), purchasers are required to give the system operator at least five business days' notice of their intention to submit an initial bid. That clause also requires purchasers to comply with any reasonable request for information that the system operator may make for the purposes of scheduling and dispatch. This detailed process currently includes the purchaser advising the system operator exactly which trading period it intends to start bidding. This type of information would be needed for changes to GXP status so that the relevant schedules can be run correctly.

Recommendations

- Amend clause 13.27D(2) to ensure that the effective date of the determination gives the system operator and other market operation service providers at least five business days to make the relevant changes to their market systems.
- Include similar wording to that in 13.7(2) to allow the system operator to make the relevant changes to market systems each time a GXP changes status from conforming to non-conforming and vice versa.
- Do not include the detailed information the system operator requires (e.g. which trading period) in the Code provisions so that this information can be updated over time without the need to amend the Code.

3.4 Other comments on the process and methodology for determining GXP status

3.4.1 Impact of weather on demand

The detailed methodology in schedule 13.5 makes no mention of the use of weather correction factors when determining the predictability of the demand at a GXP. Demand has a strong correlation to weather so, unless the 'unpredictability measure' for a conforming GXP is broad enough to allow for this, it could result in GXPs that are in areas of the country with very erratic weather patterns being classified as non-conforming.

Recommendation

- Amend the methodology in schedule 13.5 to include the use of weather correction factors.

3.4.2 Reference to 'appropriately statistical predictive model'

The process to determine the classification of a GXP as conforming/non-conforming in schedule 13.5 has a great deal of detail yet it hinges on the undefined phrase 'appropriately statistical predictive model' and refers to the ambiguous measure of the level of accuracy that 'should be able to be achieved by the system operator'. It is either appropriate to pitch this schedule at a detailed level or to leave the detail to the equivalent of a policy

statement. The current drafting is an unsatisfactory halfway house and creates the problem of a regulator carrying out an operational procedure. If requested, the system operator can provide some suggested amendments to the drafting.

Recommendation

- Transpower recommends that the system operator carry out the determination and that the methodology it uses to do that go into a document such as the Policy Statement.

3.4.3 Implications if changes to GXP status occur regularly

If frequent changes in GXP status occur there will be effects on the performance of the load forecast and the forecast prices, as well as an impact on the system operator's ongoing operational costs.

The current set of non-conforming GXPs¹ has not changed in the last five years and the connection of entirely new GXPs is rare. However, the possibility of more frequent change exists and it is greater if the Authority intends to use the process of deeming a GXP as non-conforming to allow an 'opt-in' to a future dispatchable demand regime. There could be an impact on the system operator's ongoing operational costs if changes occur frequently, as change notifications are processed and changes to the market model have to be made.

Any shift of a GXP out of the load forecast will affect the accuracy of the forecast for all the GXPs in the same load region², for a period of about two to three weeks after the removal. The effect on accuracy will be in proportion to the load at the removed GXP. This is a reflection of the current forecast engine that produces a forecast at the regional level which is then distributed amongst the GXPs within that region via Bus Load Participation Factors (BLPFs) in the market system. The current forecast engine will take two to three weeks to correct its region forecast for the removal of the new non-conforming GXP's load from its inputs. Thus, each other GXP will gain a relative proportion of the removed GXP's load via the BLPF calculation in the market system during this period. Although the impact may change as the system operator's load forecast improvement project proceeds, it is unclear what that effect will be without knowing exactly what form the new load forecast engine will take.

Recommendation

- The Authority should discourage frequent changes to the status of GXPs.

3.5 Grid owner notification about connection of new GXPs

Under the proposed clause 13.27E, the grid owner is required to notify the Authority of its intention to connect a new GXP for the first time at least six weeks before connecting the GXP. The grid owner is already required

¹ There are 10 pure non-conforming GXPs and four that the system operator currently treats as non-conforming because those GXPs have significant amounts of wind injecting into the system behind the GXP and this would otherwise have an effect on the accuracy of the load forecast.

² New Zealand is currently divided into ten load regions.

(under clause 15.14) to provide similar information to the reconciliation manager at least one calendar month before implementation.

The reconciliation manager then has an obligation to provide this information to the Authority no later than one business day after receiving the information from the grid owner.

It would be preferable for the period of notice required by both clauses 15.14 and 13.27(E) to be aligned. One notification should be able to satisfy both clauses.

Recommendation

- Amend the notice period required under clause 13.27E to be one calendar month.

3.6 Policy statement and Procurement Plan changes

Transpower has included within the drafting comments an indication of what amendments the system operator is likely to recommend the Authority make to the Policy Statement and the Procurement Plan.

The system operator will recommend these changes in accordance with clauses 8.13 and 8.46 of the Code once the DSBF amendments are finalised. This is expected to be in late September 2011.

3.7 Load forecast snapshots – costs to other participants

The requirement to keep the forecasts in existence at 36, 12, 6, 4, 2, and 0 hours prior to the beginning of a trading period (which was in the EGRs version of the DSBF Proposal) has now been replaced with a requirement in clause 13.55A to keep all forecasts of demand.

Although the system operator does retain the forecasts of demand used in the schedules, a reasonable amount of processing will need to be carried out on the data if snapshots from trading periods other than those indicated above are requested. Therefore, in these situations, it should be noted that there may be a corresponding increase in the cost to participants that ask for data that relates to load forecast snapshots not at the above points.

3.8 Roll over of nominated bids and offers

Transpower is concerned that the roll-over of nominated bids and offers as drafted in clause 13.8 may not be worded in a way that allows the most recent information to be included. It is a challenging clause to draft because the schedule period is now a rolling timeframe, yet the roll over process happens once a day at a time when there is low loading on the market system. In section 7 below the system operator has proposed some amendments to the drafting that should assist with this process.

Recommendation

- Simplify the drafting of the description of the nominated bid and offer roll over process in clause 13.8.

3.9 Use of the PRS and adjustments to meet the dispatch objective

Transpower is concerned that, the way the current Code provisions are drafted, there is an expectation that both the non-response schedule (NRS) and the price responsive schedule (PRS) will be adjusted to meet the dispatch objective. Transpower raised this in its submission in 2007³. Transpower's concerns are related to potential confusion about what schedule will be used to achieve a secure dispatch that meets the dispatch objective, what is the appropriate input information to use for subsequent schedules, and an appropriate use of resources in relation to managing security.

The NRS is intended to replace the current Security Dispatch Schedule (SDS), which is published to the market as the SWS. At present, as adjustments are made to the SDS in order to meet the dispatch objective, those adjustments are fed into subsequent iterations of the SDS. When the SDS is replaced by the NRS, there needs to be only one source of data for operational and technical purposes (i.e. the NRS), otherwise a confusing cross population of information as between schedules and databases could result.

If different adjustments are made to the PRS, it would not be clear which adjustments should be carried forward to the next iterations of both the PRS and the NRS. To avoid this confusion, the system operator proposes to prepare the PRS once for each trading period using the information supplied for the start of that trading period. Any adjustments⁴ made to the NRS (for example for reserve requirements or for frequency keeping) will then be applied to subsequent iterations of the PRS. An exception to this is the automated market systems constraints, which the system operator will independently derive for the PRS. Depending on the magnitude and direction of the difference in demand levels that arise from difference bids, applying the same adjustments may or may not result in the PRS meeting the dispatch objective (if it were hypothetically used for dispatch purposes).

It is important that there be only one source of data for the system operator when managing security. The process of submitting difference bids is purely voluntary; there is no obligation on purchasers that do submit difference bids actually to comply with those bids, there is no explicit "baseline" against which a difference bid can be prepared or assessed, and it is not clear how well the process of submitting difference bids will be adopted by the market. Therefore, the system operator will focus its resources on running security checks and applying any necessary adjustments to the NRS, because the NRS will be used as the basis of the dispatch schedule. As noted above, however, the system operator proposes to apply any adjustments that have been made to the NRS to meet the dispatch objective, to the PRS, with the exception of market system constraints. The rationale behind this approach is to keep the inputs to the NRS and PRS largely similar and hence make the results of these schedules easier to compare.

³ Page 19, *Submission to the Electricity Commission on the Consultation Paper: Demand side bidding and forecasting*, Transpower New Zealand Limited, 3 September 2007.

⁴ SFT will be separately run over both the NRS and the PRS because different constraints could potentially exist within the two schedules.

Recommendations

- Remove references to adjusting the PRS to meet the dispatch objective in the Policy Statement, in clause 13.58A and in schedule 13.3.
- Insert instead an obligation that requires the same adjustments to be made to the PRS as were made to meet the dispatch objective in respect of the NRS, subject to any exceptions specified in the Policy Statement.

4. Transition and Implementation issues

4.1 Timing and implementation of initial GXP status

The Authority proposes that the relevant Code provisions around the process and methodology of determining GXP status come into effect one month in advance of the remainder of the DSBF Code provisions. This means that the earliest participants and market operation service providers would know the final split of conforming/non-conforming GXPs would be about one month before the implementation date for DSBF. Further, because there is no explicit time period between the notification of the Authority's determination and the effective date of that determination, the latest date that participants and market operation service providers could receive the determination may be the day before the DSBF implementation date.

Transpower considers that one month in advance is insufficient for the relevant processes to be completed before the go live date, and one day before is actually infeasible. We would prefer that these Code provisions come into effect two months before the rest of the DSBF provisions.

In addition, in order to ensure adequate time for regression testing as the initial set of conforming and non-conforming GXPs are confirmed, it is recommended that the final decisions on this be notified 30 business days in advance of the DSBF go live date. This length of time would be needed to cover the probability that there could be significant differences between the current split of conforming and non-conforming GXPs which means it takes longer to implement these changes than would otherwise be necessary. It is not expected that this time period would be needed every time a change in GXP status occurred.

Recommendations

- The GXP status determination provisions should come into effect two months before the rest of the DSBF provisions rather than one month.
- A transitional provision should be inserted into the GXP determination process that provides for the EA to notify the initial set of conforming and non-conforming GXPs 30 business days in advance of the effective date for the remainder of the DSBF Code provisions.

4.2 Indications about support over the transition period

Transpower is concerned about the impression given in section 3.3 of the consultation paper about support to be provided to market participants during the implementation of DSBF.

The system operator has not made any assumptions that it will 'ensure participants are aware of their changing obligations' beyond the usual approaches it uses to communicate project progress (which usually involves updating the system operator's website and providing regular reports on project process). The system operator has also not assumed that it will 'help participants with any necessary changes to their systems' beyond providing a parallel run and undertaking end-to-end testing with a set of specific participants chosen in conjunction with the Authority.

Whilst the system operator is always willing to provide guidance and assistance to market participants, the DSBF initiative is one of the Authority's key market initiatives. For this reason, Transpower considers that the Authority should take the lead in communications with participants during implementation. Recent meetings with the Authority about the implementation phase have indicated that the Authority may in fact be considering more of a leadership role; Transpower encourages this.

Recommendation

- The Authority should take the lead in the co-ordination and management of the implementation of the DSBF initiative, supported by its service providers.

5. Other code drafting issues not related to the DSBF proposal

Transpower is concerned that the Authority has included within this Code change proposal other amendments that do not relate to the DSBF proposal, yet these have not been specifically identified or the reasons for making them explained. This makes it difficult to assess the impact of the proposed changes. Transpower would recommend the Authority be more specific about such amendments in any future proposals.

Whilst Transpower does agree that the majority of these changes are technical and non-controversial, there are a few which Transpower considers do not fit within these parameters. These are briefly explained below and are covered in detail in the drafting comments contained in section 7.

A change to the definition of reserve offer – this appears now to be only an ‘indication’ of the quantity, rather than a definitive value associated with the offer of reserves. If the intent was to water down the obligation, Transpower does not consider this to be a technical or non-controversial change; if the Authority did not intend to water down the obligation, Transpower recommends that the wording be re-drafted and has suggested some wording in the attached drafting comments.

Changes to the definitions of dispatch arc flows and dispatch group constraint arc flows (now termed expected near-constraint arc flows and expected near-group-constraint arc flows) – changes to these definitions have potentially resulted in the system operator being required to publish the limit (i.e. the schedule input) rather than the scheduled flow (i.e. the schedule output). Transpower assumes that this was not the Authority’s intent and recommends that the existing reference to the arc flows being calculated by the system operator be reinstated in the definitions.

6. Questions raised in the consultation paper

Q1 Do you agree with the broad design of the DSBF proposal?

Yes. This is a practical way to introduce an element of demand side bidding and forecasting into the New Zealand market. The two schedules provide purchasers with the ability to view the effect of load change on price and allow them to react in response.

However, Transpower does have some concerns about the proposal as follows:

- the importance of accurate input information to ensure accurate schedules and therefore forecast prices;
- the role of the system operator in respect of the load forecast;
- the interrelationship between the DSBF proposal and the dispatchable demand proposal;
- the process and methodology of GXP determination including timing issues;
- the relaxation of the bid revision threshold;
- the use of the PRS and adjustments to meet the dispatch objective;
- information from distributors regarding load management and load shifting;
- the timing of the preparation of the new schedules;
- grid owner notification about the connection of new GXPs.

Transpower has also identified an amendment to the proposed design of the DSBF initiative that would simplify the proposal, and address the inequitable treatment of purchasers at non-conforming GXPs as compared with those at conforming GXPs that results from the current design.

Q2 Do you propose any changes to the proposed Code amendments set out in Appendix 3?

Yes. Please see section 7 of this submission.

Q3 Do you agree with the material contained in the regulatory statement? In particular, do you expect the DSBF proposal to have a positive NPV?

Transpower has no specific comments to make about the extent to which the proposal is expected to have a positive NPV.

However, Transpower would like to clarify that it has not undertaken a detailed costing exercise that examines the expected benefits. In the absence of such information, Transpower cannot comment on the expected level of savings indicated in the Authority's regulatory statement.

7. Proposed changes to Code drafting

Transpower has reviewed the proposed Code amendments and found a number of places where there is a lack of clarity which would affect Transpower's ability to implement the provisions as drafted. Transpower has already provided the Authority with a set of minor drafting comments but it has also identified more substantial issues and these are set out below.

Should the Electricity Authority wish, Transpower would be happy to discuss these issues further.

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
		General	Definitions of nominated bid, difference bid, conforming/non conforming GXP, price responsive/non response schedule	Including the purpose of these terms would greatly increase understanding.	
		General	Use of bid, and nominated bid	It is not clear whether the correct term has been used in all situations. Recommend a careful check be made of wherever 'bid' is used (throughout the Code) to ensure the correct term has been inserted.	
1	N/A	1.1(1)	Definition of bona fide physical reason (b)(iv)	The PRS is only provided for information, therefore a bona fide should not arise in relation to the PRS.	Remove reference to the PRS in this clause.
1	N/A	1.1(1)	Definition of bona fide physical reason (c)(i)	The PRS is only provided for information, therefore this should refer to 'nominated bid' in this sub clause.	Change 'bid' to 'nominated bid'.

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
1	N/A	1.1(1)	Definition of expected near-constraint and expected near group constraints	This does not appear to relate to DSBF. The drafting change has removed the reference to the system operator calculating the flows in accordance with clause 13.87 and only left in the reference to Schedule 13.3. This does not appear to be correct because Schedule 13.3 is about inputs rather than outputs. This occurs again in 13.104(1) xiii and xiv but these sub-clauses do not explicitly require the system operator to publish the calculated outputs. This may result in the system operator being required to publish the limit (i.e. the schedule input) and not the scheduled flow (i.e. the schedule output).	Reinstate the reference to the system operator calculating the flows. Otherwise, it will require the system operator to publish the inputs to the schedule rather than the calculated outputs.
1	N/A	1.1(1)	Definition of forecast prices	This should include mention of the 'reference points' that have been deleted from clause 13.59(e)	
1	N/A	1.1(1)	Definition of reserve offer	This appears now to be only an 'indication' of the quantity, rather than a definitive value associated with the offer of reserves. If it was the intent to water down the obligation, Transpower does not consider that this is a technical or non-controversial change; if the Authority did not intend to water down the obligation, Transpower recommends that the wording be re-drafted.	Reserve offer means the quantity of instantaneous reserve the ancillary service agent is willing and able to provide to the system operator ... etc
Policy statement		86.2		The price-responsive schedule is a market information schedule. The system operator will not use the price-responsive schedule for security or dispatch purposes. Therefore it is not used to meet the dispatch objective.	Remove reference to price-responsive schedule in this clause.

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
		87		A number of clauses here are either no longer necessary, or need to be amended. The system operator will review these and propose amendments accordingly as part of the Policy Statement review process.	
Policy statement	N/A	87.5		This clause does not appear to relate to the DSBF proposal. The clause has been deleted. It referred to the process by which the SDS RMT iteration populated IR data into all the other schedules as input information. It is mentioned in clause 88 of the Policy Statement but that is as an input. The input is required to be calculated before it can be used in the schedules. The clause needs to be re-instated.	Re-instate clause 87.5.
Policy statement	N/A	87.5A		This information is already included under 13.58A(2) so it is not necessary to repeat it here.	Delete the clause 87.5A.
Policy statement	N/A	89.2		Clause 13.19A refers to bids being revised or cancelled yet this is not included in the list of cross references in clause 89.2.	Include a cross reference to clause 13.19A as well as 13.20 and 13.48, or is this covered by clause 7(b) of schedule 13.3?
Policy statement	N/A	89.2		Reference to 'bids'. This should be nominated bids because the PRS is not used as a dispatch schedule. Clause 13.20 refers to nominated bids.	Amend 'bids' to 'nominated bids'.
Policy statement		90	1	BP 3 refers to clause 87.6 which will be deleted.	
13	1	13.1	(b)	The old (1b), which has been revoked, mentions publishing prices. The new wording which replaced it does not mention publishing prices. Why has publishing of prices been removed?	Insert wording into clause (b) so that it reads "the system operator prepares <u>and publishes</u> information from the price-responsive schedules " etc

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
13	1	13.7		Is it intended that a purchaser does not have to submit a nominated bid? The inclusion of this clause results in there being no obligation on the purchaser to submit nominated bid information which erodes the intention of the proposal.	Make subclause (1A) subject to clause 13.13.
13	1	13.7	1B(b)	This is a policy design issue for the EA to consider. If difference bids only have to be submitted two hours ahead then the PRS is only 'accurate' within the gate closure period. Unless parties voluntarily submit difference bids earlier than this, then the NRS and the PRS are unlikely to differ. It would likely be more useful if purchasers at conforming GXPs were subject to a 'reasonable endeavours' obligation to submit difference bids 72 periods ahead like nominated bids.	Copy wording of clause 13.7(1)(b) to apply instead of (1B)(b) and introduce a 'reasonable endeavours' obligation
13	1	13.7A	1	Should this read schedule length period?	If applicable, amend drafting to schedule length period.
13	1	13.7A	3(b)	The system operator must disclose to Authority a description of process and methodology used to prepare forecast of demand. The intention of subclause (3)(b) is unclear.	Perhaps a more general catch all regarding not releasing confidential information would be more appropriate?
13	1	13.8	(1)/(2)/(3)	<p>The roll over process happens only once a day. Therefore, you have to look forward far enough to get a complete day when the roll over process usually occurs. The current wording takes information from a longer period in the past than it needs to. If more of the original wording were used, this would simplify the drafting.</p> <p>In addition, clause 13.8(2) needs a 'for' in between 'generator' and 'same trading period'.</p>	<p>Amend wording of 13.8 so that it reads:</p> <p>A purchaser or generator who fails to make a bid or offer under clauses 13.6 or 13.7 by 1200 hours of any trading day, is deemed to have made the same bid or offer for the next following trading day as that made in respect of the same trading period in the current trading day until that bid or offer is cancelled or revised by the purchaser or generator in accordance with clauses 13.17 to 13.21.</p>

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
					Alternatively, maintain the existing proposed wording, but amend the time periods in (2) and (3) to 'the same trading period on the current trading day ', as opposed to '2 days before the current trading day '.
13	1	13.13	(1) and (2)	The system operator considers the rule as drafted means that 'total quantity of electricity that will be demanded at the GXP' means that if there is embedded generation at the GXP, - where that EG is offered , bids must be provided gross; and - where that EG is not offered , bids must be provided net. Bids are only used for scheduling, not pricing. Only net metered quantities are used in the pricing process.	N/A
13	1	13.19A		Regarding the proposed rule 13.19A which requires a purchaser at a non-conforming GXP to immediately revise its nominated bid if it expects, or ought reasonably to expect, that its purchases at the various prices indicated in the nominated bid will be different from the relevant bid quantity by more than 20MW or 20% of the relevant nominated bid quantity (whichever is smaller). Any reduction in the obligation on participants to update bids at non conforming nodes degrades the ability of the market system to facilitate price discovery in look-ahead schedules. It also can have adverse impacts for security optimisation. This problem can be worse where a participant takes load from multiple non conforming GXPs at a single substation as can be seen in the following example.	A potential way of mitigating this issue would be to modify the rule so it applied to a participant's absolute load change across all non conforming GXPs at each substation, requiring all non conforming GXP bids to be updated at that substation where the threshold is exceeded. Absolute load change is suggested to capture scenarios where load is shifted from one GXP to another on either side of a system split.

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
				<p>If a participant bid 60MW at each of three non conforming GXPs, at a single substation and load was forecast to reduce by 10MW at each GXP, there would be no obligation on the participant to revise their bids. This is despite the fact that they knew their total load at that substation was forecast to reduce by 30MW.</p> <p>This only really applies at Kawerau but it can have major effects on the flows in and out of the Bay of Plenty.</p>	
13	1	13.19A	(4)	<p>Part of clause 13.19A refers to bids and part to nominated bids. If the difference bid is for information only, then why does the bona fide process under sub clause (3) apply to difference bids as well as nominated bids?</p>	<p>Re-draft so it is clear which parts of this clause apply to all bids, and which only to nominated bids.</p>
13	1	13.19A	(4)	<p>The clause states that the system operator must accept that a purchaser's reason for revision or cancellation as being a bona fide physical reason. This could be in conflict with the Enforcement Regulations.</p>	<p>Either add "for the purposes of real time dispatch and scheduling" at the beginning of (4), or, include a similar clause to 13.19(2) that refers to clause 13.21(2).</p>
13	1	13.20		<p>Purchasers submitting difference bids are not required to notify the system operator of bid revisions within 15 minutes of the next trading period. This is satisfactory for the system operator at present but, if difference bids are strongly adopted by the market and purchasers are shown to conform to their difference bids, then the system operator may like to be informed. Certainly if difference bids are used as the basis for dispatch in any future dispatchable demand proposal, the system operator would need to be advised of changes.</p>	N/A

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
13	1	13.20		Should the second 'bid' be bid or nominated bid?	If applicable, re-draft to nominated bid.
13	1	13.21		Should this be bid or nominated bid?	If bona fides can be claimed on the basis of a difference bid, then 'bid' remains.
13	1	13.27A		Process of 'deeming' a non conforming GXP after consultation needs to be used carefully. Suggest criteria for departing from the methodology should be included.	Suggest criteria for departing from the methodology should be included.
13	1	13.27D		In order to make the necessary changes to market systems, the system operator needs to know not just the date, but the relevant trading period from which the change will take effect. Purchasers will also need to know this so that they can make changes to their own systems and processes. Under clause 13.7(2), purchasers are required to give the SO at least five business days' notice of their intention to submit an initial bid. That clause also requires purchasers to comply with any reasonable request for information that the system operator may make for the purposes of scheduling and dispatch. This detailed process currently includes the purchaser advising the system operator exactly which trading period they intend to start bidding.	We recommend that 13.27D(2) be amended to ensure that the effective date of the determination gives the system operator and other market operation service providers at least five business days to make the relevant changes to their market systems. We also recommend that the wording of this clause include similar wording to that in 13.7(2) to allow the system operator to make the relevant changes to market systems each time a GXP changes status from conforming to non-conforming and vice versa. We recommend that the detail of the information the system operator requires not be included in the Code provisions, so that this information can be updated over time without the need to amend the Code.
13	1	13.27E		Under the proposed clause 13.27E, the grid owner is required to notify the Authority of its intention to connect a new GXP for the first time at least six weeks before connecting the GXP. The grid owner is already required (under clause 15.14) to provide similar information to the reconciliation manager at least one calendar month before implementation.	Amend the notice period required under clause 13.27E to be one calendar month.

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
				<p>The reconciliation manager then has an obligation to provide this information to the Authority no later than one business day after receiving the information from the grid owner.</p> <p>It would be preferable for the period of notice required by both clauses 15.14 and 13.27(E) to be aligned. One notification should be able to satisfy both clauses.</p>	
13	1	13.40		Is this clause intended to apply to bids or nominated bids?	Suggest the inclusion of a cross reference to clause 13.13(2)(b).
13	2	13.58		It is not ideal to have the inputs for all the schedules split across two areas of the Code (i.e. in clause 13.58A and schedule 13.3). Although the dispatchable demand proposal would amend this, there would still be a period of about two years when the split would exist.	
13	2	13.58	4	The system operator needs to complete the schedules before they can be passed to the clearing manager. The wording referring to 'completed' should remain and not be amended to 'prepared'.	Retain existing wording referring to 'completed'.
		13.58, 13.58A and 13.62		There is a degree of duplication in these clauses. A rationalisation would improve the quality of the drafting.	
13		13.58A	(3)(f)	As noted above, the system operator does not intend to adjust the price-response schedule to meet the dispatch objective because the PRS is not used for dispatch. Consider including wording such as the system operator will apply the same adjustments to the PRS as it made to the NRS, subject to any exceptions specified in the Policy Statement.	Change reference to apply the same adjustments to the price-response schedule as were made to meet the dispatch objective in respect of the NRS, subject to any exceptions specified in the Policy Statement.

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
13	2	13.59	Various	<p>There are a number of general tidy up changes here that do not appear to specifically relate to DSBF.</p> <p>For example, why take out 'expected' and 'indicative'? These are forecasts, so these elements of the schedule cannot be a certainty. Is the intent to standardise drafting tense and tone? If so, the word 'scheduled' should be inserted throughout this clause, for consistency with 13.104(1)(a)?</p>	<p>Either, retain existing wording that refers to 'expected' and 'indicative', or amend to 'scheduled' as per clause 104.</p>
13	2	13.59	(da)	<p>The 'quantities for each difference bid' is only relevant to the PRS, not both schedules.</p>	<p>Re-draft so that clause (da) is just for the NRS or use some other mechanism to archive the same result, i.e. difference bids only apply to the PRS.</p> <p>Either, separate out the requirements for each schedule, or move the requirements about the difference bid to the bottom of the list of contents and preface that by saying that it is only relevant to the PRS, not both. See 13.104 (1) drafting for how this issue has been handled in publication.</p>
13	2	13.59	(e)	<p>This change does not appear to relate to DSBF. "the reference points" has been deleted. Was this intended? Reference points are not embedded as a pricing node in the definition of 'forecast prices'.</p>	<p>Amend the definition of forecast prices.</p>
13	2	13.59	(f)	<p>This change does not appear to relate to DSBF. "for each island" has been deleted. Was this intended?</p>	
13	2	13.104	1	<p>As before, this should be 'completed' not 'prepared'.</p>	<p>Retain existing wording of 'competed'.</p>

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
13	2	13.105A	(1)(a)	Refers to sending purchasers information from the PRS, not the NRS. Is this intended?	
13.3	Schedule 13.3	2	(a)	This refers to clause 13.59 which has the error of clause (da) that includes difference bids and nominated bids as inputs into both the NRS and PRS which is incorrect.	Amend clause 13.59(da).
13.3	Schedule 13.3	8	Definition of BPij	<p>Currently there are two schedule types: PDS: Where the load comes from cleared bids, These are served by clearing offers, if the price of the offer is higher than the price of the bid, or if there are not enough offers, then the bid will not be clear. Other: Where the load is inelastic* and must be met. If there are not enough offers then the load will be served by the deficit generator (which is available at every bus).</p> <p>Under DSBF, these two options need to be combined. The current option as drafted would result in a fundamental change to the treatment of inelastic load.</p> <p>It would be preferable to word this definition so that it refers only to the intended outcome, which is to fully clear the bid quantities for the NRS (without specifying whether this will be cleared by price or by constraints). Making this change would align this clause with the current wording of clause 13.58A(2)(b).</p>	Remove the added text.
13.3	Schedule 13.3	10	(2)(a)(ii)	Clause 10(2)(a)(ii) needs to refer to positive difference bids.	Insert the word 'positive' in between 'all' and ' difference bids ' in clause 10(2)(a)(ii).
13.3	Schedule 13.3	13	(1)	Is this intended to refer to the PRS? The PRS is not intended to be adjusted to meet the dispatch objective.	

Part	Sub part	Clause	Sub-Clause	Feedback	Proposed revised Code drafting
13.3	Schedule 13.3	13	(1)	The system operator needs to complete the schedules before it can notify participants. The wording referring to 'completed' should remain and not be amended to 'prepared'.	Retain existing wording referring to 'completed'.
13.3	Schedule 13.3	16	(3)(d)	The modelling system still needs to calculate real time prices.	Do not delete clause (d).
13.3	Schedule 13.5	4	(2)	The reference to 'bids' in the clause may not be appropriate. That is because it will now mean nominated bids and difference bids. What it really means is the bids that are currently provided by all purchasers, rather than a subset (those at non-conforming GXP's).	
13.5	Schedule 13.5	4	(2)	The process to determine the classification of a GXP as conforming/non-conforming in schedule 13.5 has a great deal of detail yet it hinges on the undefined phrase "appropriately statistical predictive model" and refers to the ambiguous measure of the level of accuracy that 'should be able to be achieved by the system operator'. It is either appropriate to pitch this schedule at a detailed level or to leave the detail to the equivalent of a policy statement. The current drafting is an unsatisfactory halfway house and reflects the problem of a regulator carrying out an operational procedure.	The system operator would be happy to suggest some wording if requested to do so. Alternatively, Transpower recommends that the system operator carry out the determination and the methodology it uses to do that go into the Policy Statement.