

# FTR Code Amendments

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## Consultation Paper

Submissions close: 5:00pm Monday 30 July 2012

3 July 2012



## Executive summary

This consultation paper proposes a number of changes to the Electricity Industry Participation Code 2010 (Code) relating to financial transmission rights (FTRs). The proposed changes are:

- (a) where revenue inadequacy arises, the clearing manager will be required to scale FTR Hedge Values (whether positive or negative) to re-establish balance between invoiced inflows into the FTR account and invoiced outflows from the FTR account;
- (b) provision is made for the situation where a payer default on settlement day means that insufficient revenue is paid into the FTR account from payers to fund invoiced amounts to payees from the FTR account. All amounts to be paid out of the FTR account to payees and to grid owners will be scaled pro rata;
- (c) the FTR-related amounts to be included on payer and payee invoices are clarified;
- (d) arrangements for invoicing when final pricing is delayed such that the delayed trading periods cannot be settled at the same time as the other trading periods in the month;
- (e) changes to schedule 14.6 calculations to use balanced injection patterns only; and
- (f) a number of minor changes, including:
  - (i) the introduction of the terms “FTR hedge value” and “FTR acquisition cost” to the Code;
  - (ii) clarification that parties are able to trade FTRs bilaterally without disclosing information about the trade to the FTR manager, although in this case the trade will not be registered and the clearing manager will settle with the registered holder of the FTR;
  - (iii) clarification of the timing of acquisition difference payments from an assignor to the clearing manager; and
  - (iv) the definition of simultaneously feasible in clause 2(1) refers to clause 5(8), but clause 5(8) does not exist. It should now refer to clause 5(2) instead.



## Glossary of abbreviations and terms

<b>Act</b>	Electricity Industry Act 2010
<b>Assignment Difference Payment</b>	Refer to the definition in paragraph 2.1.1
<b>Authority</b>	Electricity Authority
<b>Code</b>	Electricity Industry Participation Code 2010
<b>FTR</b>	Financial transmission right
<b>FTR Acquisition Cost</b>	Refer to the definition in paragraph 2.1.1
<b>FTR Hedge Value</b>	Refer to the definition in paragraph 2.1.1
<b>UTS</b>	Undesirable trading situation



# Contents

<b>Executive summary</b>	<b>A</b>
<b>Glossary of abbreviations and terms</b>	<b>C</b>
<b>1. Introduction and purpose of this paper</b>	<b>1</b>
1.1 Introduction	1
1.2 Purpose of this paper	2
1.3 Submissions	2
<b>2. Terminology used in this paper</b>	<b>5</b>
<b>3. Scaling for revenue inadequacy</b>	<b>6</b>
3.1 Introduction	6
3.2 Problems	9
3.3 Options	9
3.4 Criteria for a good scaling methodology	11
3.5 Analysis	11
Overview of the analysis	11
Example showing Option 1 creates incentive to delay disclosing an assignment price, or to disclose a non-genuine assignment price, to avoid scaling	12
Example showing Option 2 creates incentive for inefficient trading activity to shift the burden of scaling	13
Example showing Option 3 can lead to inefficient auction allocations	13
Option 4 resolves the problems discussed above	15
Evaluating Options 3 and 4 against Criterion C	15
Evaluating Options against Criterion D	16
3.6 Summary of the performance of the Options	16
3.7 Proposal	17
<b>4. Invoicing and priorities for default short-payments</b>	<b>19</b>
4.1 Introduction	19
Gross settlement and invoicing	19
Balancing the FTR account when a payer defaults on settlement	20
4.2 Problems	21
4.3 Options for the priority given to paying the grid owner	21

4.4	Options for classifying payments to/from FTR participants as belonging to the payer or payee invoice	23
4.5	Options for the priority in which amounts on FTR participants' payee invoices are to be paid	25
4.6	Proposal	26
<b>5.</b>	<b>Invoicing when final pricing is delayed</b>	<b>28</b>
5.1	Introduction	28
5.2	Problems and discussion	28
5.3	Past examples	29
	29 April 2007, trading period 37	29
	26 March 2011	30
5.4	Suggested process for managing the non-availability of final prices	30
5.5	Options for the Code	31
<b>6.</b>	<b>Change to schedule 14.6</b>	<b>33</b>
6.1	Calculation of balanced FTR injection patterns	33
	Analysis	34
<b>7.</b>	<b>Minor Code amendments</b>	<b>35</b>
7.2	Terminology for FTR-related payments	35
7.3	Clarify obligation to provide information about assignments	35
7.4	Clarify timing of assignment difference payments to the clearing manager	35
7.5	Additional minor Code change to schedule 14.6	36
<b>8.</b>	<b>Scaling for revenue inadequacy: regulatory statement</b>	<b>37</b>
8.1	Authority's proposal	37
8.2	Statement of the objectives of the proposed amendment	37
8.3	Evaluation of the costs and benefits of the proposed amendment	38
8.4	Evaluation of alternative means of achieving the objectives of the proposed amendment	38
8.5	Assessment under section 32(1)	38
8.6	Assessment against the Code amendment principles	40
8.7	Conclusion	41
<b>9.</b>	<b>Invoicing and priorities for default short-payments: regulatory statement</b>	<b>42</b>
9.1	Authority's proposal	42
9.2	Statement of the objectives of the proposed amendment	42



9.3	Evaluation of the costs and benefits of the proposed amendment	42
9.4	Evaluation of alternative means of achieving the objectives of the proposed amendment	43
9.5	Assessment under section 32(1)	44
9.6	Assessment against the Code amendment principles	45
9.7	Conclusion	46
<b>10.</b>	<b>Invoicing when final pricing is delayed: regulatory statement</b>	<b>47</b>
10.1	Authority's proposal	47
10.2	Statement of the objectives of the proposed amendment	47
10.3	Evaluation of the costs and benefits of the proposed amendment	47
10.4	Evaluation of alternative means of achieving the objectives of the proposed amendment	48
10.5	Assessment under section 32(1)	48
10.6	Assessment against the Code amendment principles	49
10.7	Conclusion	50
<b>11.</b>	<b>Change to Schedule 14.6: regulatory statement</b>	<b>51</b>
11.1	Authority's proposal	51
11.2	Statement of the objectives of the proposed amendment	51
11.3	Evaluation of the costs and benefits of the proposed amendment	51
11.4	Evaluation of alternative means of achieving the objectives of the proposed amendment	51
11.5	Assessment under section 32(1)	52
11.6	Assessment against the Code amendment principles	53
11.7	Conclusion	54
<b>Appendix A</b>	<b>Format for submissions</b>	<b>55</b>
<b>Appendix B</b>	<b>Draft Code amendments</b>	<b>57</b>

## Tables

Table 1	Summary of the performance of the options	17
Table 2:	Assessment of revenue inadequacy scaling proposal against section 32(1)	39
Table 3:	Assessment of FTR default scaling proposal against section 32(1)	44
Table 4:	Assessment of FTR default scaling proposal against section 32(1)	48
Table 5:	Assessment of change to Schedule 14.6 against section 32(1)	52

## Figures

Figure 1: Conceptual cash flows between clearing manager and FTR Holder	6
Figure 2: Conceptual cash flows arising from registered secondary trades	7
Figure 3: Conceptual cash flows to and from FTR account	8

# 1. Introduction and purpose of this paper

## 1.1 Introduction

- 1.1.1 This consultation paper seeks comment on a number of proposals relating to arrangements for financial transmission rights (FTRs) in the Electricity Industry Participation Code 2010 (Code). The problems being addressed and the solutions being proposed are as follows.
- (a) Arrangements for scaling back FTR-related payments for revenue inadequacy are ambiguous and may lead to inefficient outcomes. The proposal is that, in the case of revenue inadequacy, FTR Hedge Values (whether they are positive or negative) will be scaled back on a pro rata basis.
  - (b) Requirements for invoicing FTR-related payments on payer and payee invoices are unclear. Related arrangements for scaling back FTR-related payments to payees following a settlement default by a payer are also unclear. The proposal is to require net FTR values (FTR Hedge Value minus FTR Acquisition Cost) for each FTR to be included on payee invoices when they are positive and on payer invoices when they are negative. It is further proposed that, in the event that a settlement default causes a need for shortfall payments from the FTR account, all payments of residual loss and constraint excess to grid owners, and all payments on FTR participants' payee invoices, should be scaled back with equal priority.
  - (c) When final pricing is substantially delayed for some trading periods, the Code requires the clearing manager to issue invoices within two business days of delayed final prices being published. It would be very expensive for the clearing manager to build systems to meet this requirement. It is proposed to remove the requirement. This would allow the clearing manager and the Authority to negotiate appropriate systems to deal with these rare events.
  - (d) When determining the amount of loss and constraint excess to allocate to supporting FTRs, the Code requires the FTR manager to use a methodology set out in schedule 14.6. The FTR manager has notified the Authority that the methodology is not robust to some unusual situations that might arise. The proposal is for the methodology to use balanced injection patterns (rather than unbalanced injection patterns) as an input. This will make the methodology more robust.
  - (e) A range of further minor Code amendments are also proposed.

## **1.2 Purpose of this paper**

- 1.2.1 The purpose of this paper is to consult with participants and persons that the Authority thinks are representative of the interests of persons likely to be affected by the proposals to amend the Code
- 1.2.2 Section 39(1)(c) of the Act requires the Authority to consult on any proposed amendment to the Code and the regulatory statement. Section 39(2) provides that the regulatory statement must include a statement of the objectives of the proposed amendment, an evaluation of the costs and benefits of the proposed amendment, and an evaluation of alternative means of achieving the objectives of the proposed amendment. The regulatory statement is set out in part 3 of this paper.
- 1.2.3 The proposed amendments are attached as Appendix B.
- 1.2.4 The Authority invites submissions on the regulatory statement and the proposed amendment, including drafting comments.

## **1.3 Submissions**

The Authority's preference is to receive submissions in electronic format (Microsoft Word). It is not necessary to send hard copies of submissions to the Authority, unless it is not possible to do so electronically. Submissions in electronic form should be emailed to [submissions@ea.govt.nz](mailto:submissions@ea.govt.nz) with Consultation Paper—FTR Code amendments in the subject line.

If submitters do not wish to send their submission electronically, they should post one hard copy of their submission to either of the addresses provided below.

Submissions  
Electricity Authority  
PO Box 10041  
Wellington 6143

Submissions  
Electricity Authority  
Level 7, ASB Bank Tower  
2 Hunter Street  
Wellington

Tel: 0-4-460 8860

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- 1.3.1 Submissions should be received by 5:00pm on Monday 30 July 2012. Please note that late submissions are unlikely to be considered.

- 1.3.2 The Authority will acknowledge receipt of all submissions electronically. Please contact the Submissions' Administrator if you do not receive electronic acknowledgement of your submission within two business days.
- 1.3.3 If possible, submissions should be provided in the format shown in Appendix A. Your submission is likely to be made available to the general public on the Authority's website. Submitters should indicate any documents attached, in support of the submission, in a covering letter and clearly indicate any information that is provided to the Authority on a confidential basis. However, all information provided to the Authority is subject to the Official Information Act 1982.



## 2. Terminology used in this paper

2.1.1 The following terms are used in this paper:

- (a) **FTR Hedge Value:** The value in dollars determined as:

For Option FTRs:  $FTR\ Hedge\ Value = \frac{FV}{2} \times \sum_{t=1}^T \max(0, P_B(t) - P_A(t))$

For Obligation FTRs:  $FTR\ Hedge\ Value = \frac{FV}{2} \times \sum_{t=1}^T (P_B(t) - P_A(t))$

where:

t is each trading period in the FTR Period from the first to the last (T)

$P_A(t)$  and  $P_B(t)$  are the final prices in \$/MWh at the Source Hub A and the Sink Hub B respectively for trading period t

FV is the FTR volume in MW

2 is a factor to convert from the per MWh final prices to the half-hours in the trading periods.

- (b) **FTR Acquisition Cost:** The amount a participant must pay or be paid in respect of the acquisition of an FTR in an FTR auction:

$FTR\ Acquisition\ Cost = FTR\ Volume\ (in\ MW) \times FTR\ Auction\ Clearing\ Price\ (in\ \$/MW) \times Number\ of\ hours\ in\ the\ FTR\ Period.$

If that FTR is then assigned under clause 13.249 (so that a price is disclosed), the disclosed price is called the FTR Disclosed Assignment Price and the FTR Acquisition Cost is updated:

$FTR\ Acquisition\ Cost = FTR\ Disclosed\ Assignment\ Price$

- (c) **Assignment Difference Payment:** Any payment made in accordance with clauses 13.249(4) or (7) of the Code. Positive amounts are a payment from the assignor to the clearing manager under clause 13.249(4). This occurs where the FTR Disclosed Assignment Price is less than the FTR Acquisition Cost that applied to the FTR immediately prior to the assignment. Negative amounts are a payment from the clearing manager to the assignor under clause 13.249(7). This occurs where the FTR Disclosed Assignment Price is greater than the FTR Acquisition Cost that applied to the FTR immediately prior to the assignment.

### 3. Scaling for revenue inadequacy

*Arrangements for scaling back FTR-related payments for revenue inadequacy are ambiguous and may lead to inefficient outcomes. The proposal is that, in the case of revenue inadequacy, FTR Hedge Values (whether they are positive or negative) will be scaled back on a pro rata basis.*

#### 3.1 Introduction

3.1.1 The initial allocation of FTRs is through the primary and variation auctions, which will each auction off a proportion of the available FTR grid. Each auction establishes clearing prices for each of four FTR products: northwards obligation, northwards option, southwards obligation and southwards option FTRs. The auction results in clearing prices (in \$/MW/h) that are related for the different FTR products. In particular, the price of a northwards obligation FTR will be equal to:

- (a) the negative of the price of a southwards obligation FTR; and also equal to
- (b) the price of a northwards option FTR minus the price of a southwards option FTR.

3.1.2 An FTR's settlement day occurs on the 20<sup>th</sup> of the month following the FTR month. Conceptually, the settlement payments for an FTR are as shown in Figure 1.

Figure 1: Conceptual cash flows between clearing manager and FTR Holder



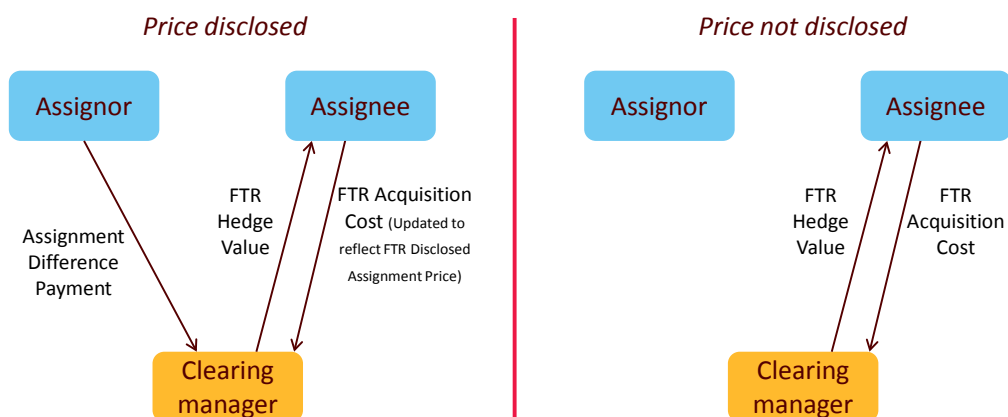
3.1.3 The FTR Acquisition Cost can be positive or negative. If it is negative, the arrow will flow in the opposite direction in Figure 1.

3.1.4 The FTR Hedge Value can also be positive or negative. If it is negative, the arrow will flow in the opposite direction in Figure 1.

3.1.5 Secondary trading can occur bilaterally between participants. The trade must be registered with the FTR manager to be recognised for settlement by the clearing manager. Registered trades ('assignments') will either have an associated disclosed price or not. This influences what cash payments are made between the assignor and the clearing manager, and between the clearing manager and the new holder of the FTR (the assignee). Figure 2 illustrates the cash flows emerging from secondary trades.

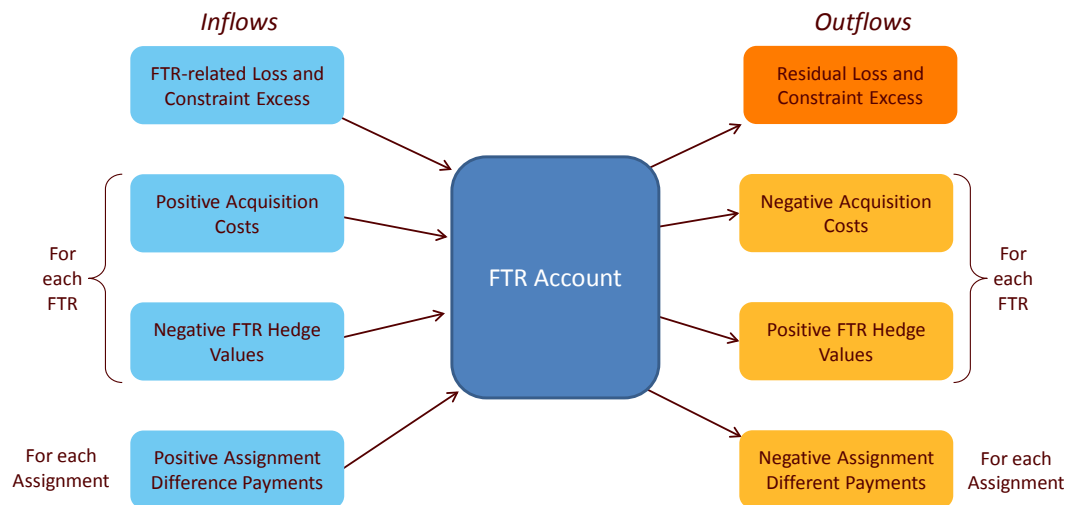


Figure 2: Conceptual cash flows arising from registered secondary trades



- 3.1.6 If a price is disclosed, there will be an assignment difference payment paid by the assignor to the clearing manager. The amount paid will be the FTR Acquisition Cost that applied to the FTR immediately prior to the assignment less the FTR Disclosed Assignment Price. If that amount is negative, there will be a payment in the other direction from the clearing manager to the assignor.
- 3.1.7 If there is a payment from the assignor to the clearing manager under 13.249(4), that amount must be paid on the settlement day that follows the month in which the assignment is registered by the FTR manager (refer to clause 13.249(5)). If there is a payment from the clearing manager to the assignor, that amount must be paid on the settlement day that follows the end of the period to which the FTR relates (refer to clause 13.249(7)).
- 3.1.8 If a price is not disclosed, the assignee 'steps into the shoes of the assignor' so that it makes and receives the same payments that the assignor would have made and received if there had been no assignment.
- 3.1.9 Figure 3 illustrates the conceptual cash flows into and out of the FTR account.

Figure 3: Conceptual cash flows to and from FTR account



- 3.1.10 **FTR-related Loss and Constraint Excess** is a proportion of all loss and constraint excess as determined by the FTR manager under clause 14.73 of the Code.
- 3.1.11 The **Residual Loss and Constraint Excess** is calculated as the residual after all other amounts are determined. It is paid to the grid owner who distributes it to those who pay for the grid.
- 3.1.12 It is possible in some circumstances that the four inflows in Figure 3 total to less than the bottom three outflows. This situation is referred to as **revenue inadequacy**. When there is revenue inadequacy, the Residual Loss and Constraint Excess (top box in the outflows column) is zero. The FTR account needs to be balanced, and this can occur conceptually by either:
- (a) scaling back one or more of the bottom three outflow boxes;
  - (b) increasing the inflows; or
  - (c) some combination of those approaches.
- 3.1.13 The Code provides, in clause 14.47A, subclauses (4) and (5):
- “(4) If the total amount required to be paid by the **clearing manager** in respect of **FTRs** in respect of the **billing period** exceeds the amount of all funds in the **FTR account** available for the settlement of **FTRs** in the relevant **billing period**, the **clearing manager** must amend each amount payable to a person in respect of each **FTR** for that **billing period** so that the amount payable is calculated according to the following formula:
- $$A = B \times (C/D)$$
- where
- A is the amount payable under each **FTR**

- B is the amount owing under the **FTR** minus the amount of the **FTR payment** owing under the **FTR**
- C is the total amount available to make payments under subclause (3)
- D is the total amount required to settle **FTRs** in respect of the **billing period**

(5) Subclause (4) does not apply to an **FTR** in respect of which the holder of the **FTR** is required to pay an amount to the **clearing manager**.”

3.1.14 The algebraic value B in clause 14.47A(4) is the value that gets scaled (by the factor C/D). The value B appears to be equivalent to the FTR Hedge Value minus the FTR Acquisition Cost. However, it may be arguable that Assignment Difference Payments (or *negative* Assignment Difference Payments) are also contained in B and therefore scaled.

## 3.2 Problems

3.2.1 There are three problems with the Code’s treatment of scaling for revenue inadequacy.

- (a) **Ambiguity:** There is some ambiguity in the Code as to whether Assignment Difference Payments are to be scaled (along with the FTR Hedge Value minus the FTR Acquisition Cost), and if so, how.
- (b) **Inefficient avoidance activity:** It will be demonstrated below that, regardless of whether Assignment Difference Payments are scaled, there may be incentives for parties to engage in inefficient avoidance activities to avoid exposure to scaling for revenue inadequacy. The avoidance activities may include forming coalitions to engage in artificial secondary trading, and failure to disclose genuine prices for secondary trades.
- (c) **Inefficient auction allocations:** It will further be demonstrated below that the allocation of FTRs in the primary and variation auctions may be inefficient. The auctions assume that the returns from holding different FTR products are related and impose a corresponding relationship between the product prices. However, participants will value the products differently because of the different implications each product has for revenue inadequacy scaling, and will revise their bids into the auction to shift the risk of scaling onto others. This can result in the inefficient allocation.

## 3.3 Options

3.3.1 Four different options have been identified for clarifying or changing the Code provisions relating to scaling for revenue inadequacy. Although the existing Code provisions may be subject to different interpretations, the Authority considers that the ‘status quo’ is best represented by Option 1 below. The four options are:

(a) **Option 1 – Scale net FTR amounts and Assignment Difference**

**Payments:** The following values would be scaled pro rata:

- (i) positive net hedge values for each registered FTR (indexed  $r$ )<sup>1</sup>; that is:

$$\text{Max}(0, \text{FTR Hedge Value}_r - \text{FTR Acquisition Cost}_r)$$

and

- (ii) negative Assignment Difference Payments for each registered assignment (indexed  $a$ ); that is:

$$\text{Max}(0, -\text{Assignment Difference Payment}_a)$$

- (b) **Option 2 – Scale net FTR amounts:** Scaling would be applied pro rata to positive net hedge values (as in Option 1), but **not** to the negative Assignment Difference Payments. This would mean that Assignment Difference Payments would be a “firm” amount.

- (c) **Option 3 – Scale outflows for FTR Hedge Values:** Scaling would be applied pro rata only to positive FTR Hedge Values for each registered FTR (indexed  $r$ ); that is, to:

$$\text{Max}(0, \text{FTR Hedge Value}_r)$$

This would mean that both (i) Assignment Difference Payments, and (ii) FTR Acquisition Costs, would be “firm” amounts with respect to revenue inadequacy.

The scaling factor  $S$  would be determined as:

$$S = \frac{\text{Total Amount Available for Satisfying Positive FTR Hedge Values}}{\sum_r \text{Max}(0, \text{FTR Hedge Value}_r)}$$

- (d) **Option 4 – Scale inflows and outflows for FTR Hedge Values:** Scaling would be applied pro rata to both positive and negative FTR Hedge Values for each registered FTR (indexed  $r$ ); that is, to:

$$\text{FTR Hedge Value}_r$$

Assignment Difference Payments and FTR Acquisition Costs would be firm. The scaling factor  $S$  would be determined as:

<sup>1</sup> The FTR register will record a separate item for each FTR that has a separate history. So if party A has acquired quantities of (say) obligation FTR Ben-Ota on several different occasions at several different Acquisition Costs, there will be several different items in the register for those FTRs. And if party A assigns some of that FTR, the information provided to the FTR Manager about the assignment will need to specify which registered FTRs have been sold (not just that 10MW of obligation FTR Ben-Ota has been sold).

$$S = \frac{\text{Total Amount Available for Satisfying Positive or Negative FTR Hedge Values}}{\sum_r \text{FTR Hedge Value}_r}$$

## 3.4 Criteria for a good scaling methodology

3.4.1 The following criteria are proposed for evaluating the different options for scaling methodologies in the event of revenue inadequacy:

- (a) **Criterion A - Avoids incentives for inefficient avoidance behaviour:**  
The scaling methodology should not provide participants with an incentive to engage in inefficient activities designed to shift the burden of the scaling onto other parties.
- (b) **Criterion B – Supports price discovery:** The scaling methodology should not:
  - (i) create an incentive for parties to assign FTRs at non-market prices; or
  - (ii) create an incentive for parties to assign FTRs without disclosing the market price at which the FTR was traded; or
  - (iii) make FTRs difficult to value.
- (c) **Criterion C – Retains useful hedging properties:** The scaling methodology should ensure that FTRs retain the hedging properties that participants find most useful, at least to the extent this is possible within the existing constraints of the market design.
- (d) **Criterion D – Ease of implementation:** The scaling methodology should be capable of being implemented within the existing FTR timetable, and capable of working consistently with other parts of the Code and market.

## 3.5 Analysis

### Overview of the analysis

3.5.1 Numerical examples are provided below showing that:

- (a) Option 1 creates an incentive for the parties to an assignment to delay disclosing the price at which the trade occurred. This would enable them to retain the flexibility to not disclose the price (or to disclose a different price) to avoid scaling for revenue inadequacy. This shows that Option 1 rates poorly against Criterion B;

- (b) Option 2 creates incentives for parties to engage in inefficient trading activity to shift the burden of scaling onto others. This shows that Option 2 rates poorly against Criterion A; and
- (c) Option 3 can lead to inefficient auction allocations of FTRs, because the auction will not make efficient tradeoffs between FTR products. Consequently Option 3 would rate poorly against Criterion A.

Note: This feature of Option 3 arises due to the 'asymmetry' in scaling (*outflows* are scaled rather than both *inflows and outflows*).

Consequently similar inefficient allocations may occur under Options 1 and 2, which also incorporate this asymmetry.

3.5.2 The analysis will then:

- (a) explain how Option 4 resolves the problems discussed above in relation to options 1 to 3;
- (b) compare how Options 3 and 4 measure up against Criterion C; and
- (c) briefly evaluate all the Options against Criterion D.

**Example showing Option 1 creates incentive to delay disclosing an assignment price, or to disclose a non-genuine assignment price, to avoid scaling**

3.5.3 Suppose that X Ltd acquires an FTR at auction for \$80,000. Suppose that X Ltd later assigns the FTR to Y Ltd at a price of \$150,000, which reflects both parties' expectation for the FTR Hedge Value. The parties then consider whether to disclose that price. While they are considering whether to disclose the price, both parties revise their expectations for the FTR Hedge Value to \$100,000, and this expectation proves to be correct.

- (a) If the parties **disclose a price** of \$150,000, either immediately or some time later, the Assignment Difference Payment will be -\$70,000 (\$80,000 - \$150,000) which means that X Ltd will receive the payment of \$70,000 from the clearing manager on settlement day, assuming revenue adequacy. If there is revenue inadequacy under Option 1, the value that X Ltd will have exposed to scaling will be that \$70,000. Y Ltd will have a net obligation to pay the clearing manager \$50,000 (\$150,000 FTR Acquisition Cost - \$100,000 FTR Hedge Value) on settlement day so will not be exposed to scaling. Looking at X Ltd and Y Ltd collectively, they will have a total of \$70,000 exposed to scaling.
- (b) If the parties **do not disclose a price, or disclose a non-genuine price of \$80,000**, there will be no Assignment Difference Payment to or from X Ltd, so X Ltd will have no exposure to scaling. Y Ltd will receive a payment of \$20,000 (\$100,000 FTR Hedge Value - \$80,000 FTR Acquisition Cost) from the clearing manager on settlement day, assuming revenue adequacy.

Looking at X Ltd and Y Ltd collectively, they will have a total of \$20,000 exposed to scaling.

- 3.5.4 X Ltd and Y Ltd will collectively face an incentive to delay disclosing the price at which they traded so they retain the flexibility (depending on developing circumstances) to not disclose the price or to disclose a non-genuine price. If their expectations for the FTR Hedge Value change after the trade to the extent that the expected FTR Hedge Value (in dollars) is less than the price at which the secondary trade actually occurred (in dollars), there may be scope for the parties to benefit by disclosing a price lower than the genuine price at which the trade occurred, or by not disclosing any price. This has the effect of reducing their collective exposure to scaling and shifting the burden of the scaling onto other parties. It also affects the transparency of secondary trading prices.

**Example showing Option 2 creates incentive for inefficient trading activity to shift the burden of scaling**

- 3.5.5 Suppose that X Ltd acquires an FTR at auction for an FTR Acquisition Cost of \$80,000. As the end of the FTR month approaches, traders will have good information about the likely FTR Hedge Value that will be associated with the FTR. Suppose X Ltd and Y Ltd are willing to trade FTRs between themselves in their mutual interest, and that they expect, accurately, that the FTR Hedge Value will be \$150,000.
- (a) If X Ltd continues to hold the FTR, it will receive \$70,000 (\$150,000 FTR Hedge Value less \$80,000 FTR Acquisition Cost) from the clearing manager on settlement day, assuming revenue adequacy. Y Ltd will make no payments to or from the clearing manager. Collectively, X Ltd and Y Ltd have \$70,000 exposed to scaling.
  - (b) If X Ltd assigns the FTR to Y Ltd for \$150,000 and discloses that price, X Ltd will receive a \$70,000 Acquisition Difference Payment on settlement day, but that amount will be “firm” so it is not subject to scaling. Y Ltd will have a balanced position in relation to the clearing manager since the FTR Hedge Value (\$150,000) and the updated FTR Acquisition Amount (\$150,000) are equal. So Y Ltd will have no exposure to scaling under Option 2. Collectively, X Ltd and Y Ltd will have no exposure to scaling.
- 3.5.6 X Ltd and Y Ltd will collectively face an incentive to trade the FTR at its expected value shortly before the last date on which the FTR can be traded so they can avoid any exposure to scaling. This will have the effect of shifting the burden of the scaling onto others.

**Example showing Option 3 can lead to inefficient auction allocations**

- 3.5.7 Suppose the FTR grid capacity northward is 500MW and that the primary and variation auctions clear a total of 700MW of northward obligation FTRs and

200MW of southward obligation FTRs (we suppose for simplicity that there are no option FTRs). Suppose the clearing price for northward FTRs is \$10/MW/h. This means that the auction will also have a clearing price of -\$10/MW/h for southward FTRs.

- 3.5.8 Suppose parties perceive a risk during the auctions that the physical grid capacity might be restricted to 300MW northward, and that this scenario occurs. Suppose that the physical flow of electricity during the FTR month is a constant 300MW northward flow. The price difference between the hubs turns out to be \$50/MWh, with northern prices higher than southern prices.
- 3.5.9 Assuming no FTRs are assigned to other parties in secondary trading, the “firm”<sup>2</sup> net inflows into the FTR account are \$21.6 million made up of the following components:
- (a) the FTR-related rentals of \$10.8 million, calculated as \$50/MWh spot price difference \* 300MW physical flow \* 24 hours \* 30 days;
  - (b) **plus** the sum of all positive FTR Acquisition Costs of \$5.04 million (the 700MW of northward FTRs \* \$10/MW/h \* 24 hours \* 30 days);
  - (c) **plus** the absolute value of the sum of all negative FTR Hedge Values. This is \$7.2 million, which is the 200MW of southward FTRs \* \$50/MW/h spot price difference \* 24 hours \* 30 days;
  - (d) **minus** the absolute value of the sum of all negative FTR Acquisition Costs of \$1.44 million (the 200MW of southward FTRs \* \$10/MW/h \* 24 hours \* 30 days).
- 3.5.10 The non-firm outflows from the FTR account are \$25.2 million, which is the 700MW of northward FTRs \* \$50/MWh spot price difference \* 24 hours \* 30 days.
- 3.5.11 Non-firm outflows from the FTR account exceed firm net inflows into the FTR account by \$3.6 million. This is the amount of revenue inadequacy.
- 3.5.12 The scaling factor is the firm net inflows divided by the non-firm outflows, which is 0.857 (\$21.6 million divided by \$25.2 million). The outflows of FTR Hedge Values would therefore be scaled back by 14.3 percent.
- 3.5.13 FTR participants will know, prior to the primary and variation auctions, that there is a risk of scaling for northward FTRs. Bids for northward FTRs will therefore incorporate a discount to reflect this risk. However, bids for southward FTRs will not incorporate an adjustment for scaling risk because they are not considered (in this example) to be subject to that risk. Where this ‘asymmetry’ occurs, it is possible that inefficient allocations can emerge from the auction. If the auction has the opportunity to clear an additional 1MW of southward FTR with a bid price

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<sup>2</sup> “Firm” here means that the values are not subject to scaling for revenue inadequacy.



of -\$10/MW/h in conjunction with an additional 1MW of northward FTR for a bid price of \$10.25/MW/h, it will do so. However, if the bid for the northward FTR is discounted by the bidder by 50 cents (to \$9.75/MW/h) to take account of the risk of scaling, the trade will not occur. Yet the 50 cent discount does not reflect a genuine economic cost to the system, because the amount of any revenue inadequacy shortfall would not be affected by whether the offsetting 1MW trades occurred or not.

#### **Option 4 resolves the problems discussed above**

3.5.14 The problems discussed above in relation to Options 1 to 3 are:

- (a) Option 1 creates an incentive for the parties to an assignment to delay disclosing the price at which the trade occurred (or to disclose a false price) so as to avoid scaling;
- (b) Option 2 creates incentives for parties to engage in inefficient trading activity so as to avoid scaling; and
- (c) Option 3 can lead to inefficient auction allocations of FTRs.

3.5.15 Option 4 resolves these problems because:

- (a) by targeting the scaling towards FTR Hedge Values, parties cannot affect the amount of scaling to which they are exposed simply through their disclosure (or otherwise) of assignment prices;

Note: Option 3 also resolves this problem for the same reason;

- (b) by targeting the scaling towards FTR Hedge Values, a coalition of parties cannot affect their combined exposure to scaling simply by assigning FTRs;

Note: Option 3 also resolves this problem for the same reason;

- (c) by scaling both inflows and outflows of FTR Hedge Values, FTR participants have an incentive to discount their bids for all FTR products proportionately, with the result that the allocation emerging from the auction will be unaffected by the discounting and therefore efficient.

#### **Evaluating Options 3 and 4 against Criterion C**

3.5.16 Criterion C provides that the scaling methodology should ensure that FTRs retain the hedging properties that participants find most useful, at least to the extent this is possible within the existing constraints of the market design.

3.5.17 In the example above beginning at paragraph 3.5.7, and subject to certain assumptions, we have shown that the scaling factor under Option 3 would be 0.857. We can demonstrate that under Option 4, assuming that the auction bids are the same, the scaling factor would be lower at 0.800.

- 3.5.18 A participant with 1MW of generation at the BEN hub and 1MW of fixed price load at the OTA hub may wish to purchase a 1MW northward obligation to avoid exposure to price differences emerging between the hubs. That participant's FTR would be scaled back by more under Option 4 than under Option 3. Arguably, Option 3 therefore better preserves the hedging properties of the FTR that are important to that participant.
- 3.5.19 However, if that participant hedges its position by holding 2MW of northward FTRs and a 1MW southward FTR, the participant will hold:
- (a) under Option 3, the equivalent of 0.714MW of unscaled northward FTR (2MW \* scaling factor of 0.857, less 1MW unscaled); and
  - (b) under Option 4, the equivalent of 0.800MW of unscaled northward FTR.
- so in this case Option 4 would better preserve the hedging properties of the participant's FTR position.
- 3.5.20 If the participant hedges its position by holding 10MW of northward FTRs and 9MW of southward FTRs, Option 3 would perform very badly in preserving the hedging desired by the participant.
- 3.5.21 Although the symmetric scaling under Option 4 will increase the need to scale back positive FTR Hedge Values (relative to asymmetric scaling under Option 3), this can be managed by an appropriately conservative choice of FTR grid capacity.

### **Evaluating Options against Criterion D**

- 3.5.22 At this stage it appears that all options would be capable of being implemented within the existing FTR timetable and working consistently with other parts of the Code and market, and would therefore satisfy Criteria D.

## **3.6 Summary of the performance of the Options**

- 3.6.1 Table 1 summarises the performance of each of the options against the criteria.

Table 1 Summary of the performance of the options

Criteria	Option 1	Option 2	Option 3	Option 4
Criterion A - Avoids incentives for inefficient trading activity		✗	✗	✓
Criterion B – Supports price discovery	✗		✓	✓
Criterion C – Retains useful hedging properties			½ Less robust than for Option 4	✓ Robust performance, especially when accompanied by appropriately conservative choice of FTR grid capacity
Criterion D – Ease of implementation	✓	✓	✓	✓

### 3.7 Proposal

3.7.1 On the basis of the summary in Table 1, the following proposal is put forward for managing revenue inadequacy.

3.7.2 If the clearing manager determines that the calculated inflows into the FTR account from:

- (a) the amount of loss and constraint excess to be used to fund FTRs;
- (b) any positive FTR Acquisition Costs;
- (c) any negative FTR Hedge Values; and
- (d) any amounts to be paid by an assignor to the clearing manager in relation to the assignment of an FTR,

... are less than the calculated outflows from the FTR account for:

- (e) any negative FTR Acquisition Costs;
- (f) any positive FTR Hedge Values; and
- (g) any amounts to be paid by the clearing manager to an assignor under clause 13.249(7) of the Code,

the clearing manager must amend the invoiced amounts for FTR Hedge Values (whether they are positive or negative) by scaling them by a factor C/D, where:

C is the calculated net inflow of funds into the FTR account from (a), (b), (d), (e) and (g), and

D is the calculated net outflow of funds from the FTR account from (c) and (f).

3.7.3 The full proposed Code amendment is set out in Appendix B.

<b>Q1.</b>	<b>Do you agree with the proposal to scale FTR Hedge Values (positive or negative) to manage revenue inadequacy?</b>
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## 4. Invoicing and priorities for default short-payments

*Requirements for invoicing FTR-related payments on payer and payee invoices are unclear. Related arrangements for scaling back FTR-related payments to payees following a settlement default by a payer are also unclear. The proposal is to require net FTR values (FTR Hedge Value minus FTR Acquisition Cost) for each FTR to be included on payee invoices when they are positive and on payer invoices when they are negative. It is further proposed that, in the event that a settlement default causes a need for shortfall payments from the FTR account, all payments of residual loss and constraint excess to grid owners, and all payments on FTR participants' payee invoices, should be scaled back with equal priority.*

### 4.1 Introduction

#### Gross settlement and invoicing

- 4.1.1 The wholesale electricity market is a gross settlement market. Those who purchase electricity pay for it by 2pm on settlement day. Funds are then paid out to generators by 4:30pm on the same day. A participant who is both a purchaser and a generator will receive two invoices: a payer invoice (purchases) and a pro forma payee invoice (generation). They must pay the payer invoice by 2pm and can expect to receive the funds described in the pro forma payee invoice by 4:30pm.
- 4.1.2 Clause 14.40(fa) of the Code provides that an FTR participant's *payer* invoice will include:
- “(fa) the net amount to pay, or to be paid, for that **billing period** in respect of—
- (i) the settlement of every **FTR** in respect of which the **payer** is registered as the holder of the **FTR** [the FTR Hedge Value]; and
  - (ii) every **FTR payment** that has become due [the FTR Acquisition Cost]”.
- 4.1.3 Clause 14.45(ga) of the Code provides that an FTR participant's *payee* invoice will include:
- “(ga) the net amount to pay, or to be paid, for that **billing period** in respect of—
- (i) the settlement of every **FTR** in respect of which the **payee** is registered as the holder [the FTR Hedge Value]; and
  - (ii) every **FTR payment** that has become due [the FTR Acquisition Cost]”.
- 4.1.4 Clause 14.40(fa) intended payer invoices to contain FTR Acquisition Costs less FTR Hedge Values *when that combined value is positive so that it is a flow from the FTR holder to the clearing manager*. Conversely, the payee invoice was

intended to contain FTR Hedge Values less FTR Acquisition Costs *when that combined value is positive so that it is a flow from the clearing manager to the FTR holder*. However, it should be possible to specify this more clearly in the Code.

- 4.1.5 Neither 14.40(fa) nor 14.45(ga) mentions Assignment Difference Payments, which raises some doubt over how they are to be treated on payer and payee invoices. Some guidance is provided by clause 13.249(5), which provides that the clearing manager must include the amount payable under clause 13.249(4) (namely, positive Assignment Difference Payments) in the invoice for the billing period in which the assignment took place.

#### **Balancing the FTR account when a payer defaults on settlement**

- 4.1.6 If an *electricity purchaser* defaults on settlement day, the clearing manager may set-off the unpaid amount against any amount payable by the clearing manager to that party, such as amounts owed for that party's generation (refer to clause 14.59(c)). The clearing manager can also commence the steps necessary to access the defaulting party's prudential security. If there are not enough funds in the general account<sup>3</sup> to pay generators in full by 4:30pm, the clearing manager will scale back payments to generators pro rata.
- 4.1.7 When the FTR market is introduced, a similar sort of arrangement will be necessary to deal with a payer default on settlement day that results in under-payment into the FTR account.
- 4.1.8 Clause 14.48B of the Code provides that, if a payer who is an FTR participant defaults by (only) partly paying its payer invoice, the clearing manager will apportion any under-payment between the FTR account and the general account according to the proportions that each account forms on that invoice. If further amounts are later recovered from a defaulting payer, the allocation of those additional funds between the FTR account and the general account is performed on a similar basis (refer to clause 14.62A).
- 4.1.9 Clause 14.47A, which has already been quoted above in relation to revenue inadequacy, also apparently applies to situations where a payer default leads to the need to scale back some FTR-related payments. In clause 14.47A, the amount that is scaled back (subclause 4) is "the amount owing under the FTR minus the amount of the FTR payment owing under the FTR", but not if "the holder of the FTR is required to pay an amount to the clearing manager" (subclause 5). This could be ambiguous as to whether Assignment Difference Payments are included in the scaling.

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<sup>3</sup> The general account is the account that handles all payments except FTR-related payments.

4.1.10 There is also ambiguity in the Code in relation to the priority of the payment to the grid owner for residual loss and constraint excess. Clause 14.73 provides:

- (1) On [settlement day], and when the **clearing manager** has received notification from its **bank** that the **generators** and **purchasers** have deposited **cleared funds** in the **operating account**, the **clearing manager** must... pay the appropriate... **residual loss and constraint excess** to [the grid owner]

4.1.11 The definition of residual loss and constraint excess is set out in Part 1 of the Code:

**residual loss and constraint excess** means, in respect of a **billing period**, an amount remaining in the **FTR account** that is not required to settle **FTRs** for the **billing period**...

4.1.12 It is not clear whether the Code requires:

- (a) payments to FTR participants to be scaled back under clause 14.47A(4), with the residual loss and constraint excess being what is left over; or
- (b) the residual loss and constraint excess is the residual amount, *as specified on the grid owner's invoice*, and this must be paid. Payments to FTR participants can be scaled back under clause 14.47A(4) to achieve this.

## 4.2 Problems

4.2.1 The problems with the provisions currently set out in the Code are:

- (a) they are not clear about the priority to give to paying the grid owner for residual loss and constraint excess when there is a settlement default;
- (b) they do not clearly assign payments to/from FTR participants as belonging to the payer or payee invoice; and
- (c) they do not clearly specify the priority in which amounts on FTR participants' payee invoices are to be paid.

## 4.3 Options for the priority given to paying the grid owner

4.3.1 It is convenient to begin consideration of these matters by deciding on the priority to be assigned to the payment from the FTR account to the grid owner for residual loss and constraint excess.

4.3.2 The options are:

- (a) **Option 1 – Grid Owner First:** Pay the grid owner first, before FTR participants are paid;

- (b) **Option 2 – Equal Priority:** Pay the grid owner and FTR participants in equal priority; or
- (c) **Option 3 – Grid Owner Last:** Pay the grid owner last, after FTR participants have been paid in full.

4.3.3 Arguments for Option 1 are as follows.

- (a) FTR participants should bear any default risk (or rather, residual default risk remaining after prudential security is accessed) associated with participation in the FTR market. This places the incentive on FTR participants to ensure that FTR-related prudential arrangements are effective and efficient.
- (b) Looking at the clearing manager's general account (as opposed to the FTR account), if there is a shortfall in that account, generators are scaled back first. Funds owed to grid owners for loss and constraint excess have a higher priority (refer to clause 14.47). By analogy, grid owner's should have priority over FTR participants in the receipt of funds from the FTR account.

4.3.4 Arguments for Option 3 are as follows.

- (a) Using the residual loss and constraint excess to help fund defaults may reduce any incentives on FTR participants to conduct inefficient activities designed to avoid being exposed to default scaling, and to shift the burden of that scaling onto others.
- (b) The residual loss and constraint excess is essentially determined as a residual amount once invoices are issued. It may rise to high levels in some months. It may fall to zero in other months to help make payments to FTR participants as "firm" as possible. If the decision has been made that the residual loss and constraint excess will support the "firmness" of FTRs with respect to revenue adequacy, it would appear consistent to use the residual loss and constraint excess to support the firmness of FTRs with respect to default.

4.3.5 The argument for Option 2 is that none of the arguments for the other options are persuasive. If there are no strong reasons to give the grid owner a higher or lower priority than FTR participants, it would seem appropriate to assign them an equal priority.

4.3.6 The Authority is proposing a Code amendment to implement Option 2 to give all parties an equal priority.

<p><b>Q2. In the event of a shortfall of funds into the FTR account arising from a payer default, do you agree with the proposal to give payments from the FTR account to grid owners the same priority as payments to FTR participants?</b></p>
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- 4.3.7 Since payments to FTR participants may consist of different elements (e.g. payments to the payee as holder of an FTR, and payments to the payee as assignor of an FTR), and since the payee invoice may involve some “netting” (e.g. FTR Hedge Values net of FTR Acquisition Costs), this opens up the possibility of assigning different priorities to different components on FTR participants’ payee invoices. However, it is first necessary to consider what values will be contained on FTR participants’ payee invoices.

## 4.4 Options for classifying payments to/from FTR participants as belonging to the payer or payee invoice

- 4.4.1 The options for classifying payments to/from FTR participants as belonging to the payer or payee invoice are as follows.

- (a) **Option A – Net at FTR level:** Payer and payee invoices would set out values netted at the registered FTR level, provided they are positive. More precisely, for FTR participant  $p$ :

- (i) the payer invoice would include the following amounts:

$$\max(0, FTR \text{ Acquisition Cost}_r - FTR \text{ Hedge Value}_r)$$

for each registered FTR  $r$  held by FTR participant  $p$ , and

$$\max(0, \text{Assignment Difference Payment}_a)$$

for each registered assignment  $a$  in which FTR participant  $p$  was the assignor. These Assignment Difference Payments would be included in the invoice for the month in which the assignment was registered.

- (ii) the payee invoice would include the following amounts:

$$\max(0, FTR \text{ Hedge Value}_r - FTR \text{ Acquisition Cost}_r)$$

for each registered FTR  $r$  held by FTR participant  $p$ , and

$$\max(0, -\text{Assignment Difference Payment}_a)$$

for each registered assignment  $a$  in which FTR participant  $p$  was the assignor. These Assignment Difference Payments would be included in the invoice for the FTR month to which the FTR relates.

- (b) **Option B – Minimise netting:** This option will avoid any netting between FTR Hedge Values and FTR Acquisition Costs on the payer and payee invoices. So for FTR participant  $p$ :

- (i) the payer invoice would include the following amounts:

$$\max(0, FTR \text{ Acquisition Cost}_r)$$

and

$$\max(0, -FTR \text{ Hedge Value}_r)$$

for each registered FTR  $r$  held by FTR participant  $p$ , and

$$\max(0, \text{Assignment Difference Payment}_a)$$

for each registered assignment  $a$  in which FTR participant  $p$  was the assignor. These Assignment Difference Payments would be included in the invoice for the month in which the assignment occurred.

- (ii) the payee invoice would include the following amounts:

$$\max(0, FTR \text{ Hedge Value}_r)$$

and

$$\max(0, -FTR \text{ Acquisition Cost}_r)$$

for each registered FTR  $r$  held by FTR participant  $p$ , and

$$\max(0, -\text{Assignment Difference Payment}_a)$$

for each registered assignment  $a$  in which FTR participant  $p$  was the assignor. These Assignment Difference Payments would be included in the invoice for the FTR month to which the FTR relates.

- (c) **Option C – Net at FTR participant level:** An FTR participant's total net position with the FTR Account would be assessed over all FTR holdings and assignments for which that party is responsible. If that amount indicated a net payment from the FTR participant to the clearing manager, the amount would be included on a payer invoice. If that amount indicated a net payment from the clearing manager to the FTR participant, the amount would be included on a payee invoice.

4.4.2 Option B would result in larger payer and payee invoices, since there would be no netting on those invoices. This could increase pressure on participants' cash management and require greater support from banks in relation to the risks associated with providing credit between 2pm and 4:30pm on settlement day.

4.4.3 It appears that Option C would provide inefficient incentives for avoiding default scaling. It would open up the potential for FTR participants with offsetting positions vis-a-vis the clearing manager to form a coalition and to assign FTRs between themselves for a disclosed price such that the party who is owed funds by the clearing manager reduces the amount it is owed (while the other party reduces the amount it owes to the clearing manager). This would reduce the total exposure of the coalition to default scaling, and would shift the burden of that

scaling onto other parties. This could encourage inefficient effort in forming such coalitions, and give rise to price disclosures at non-genuine prices.

- 4.4.4 Option A appears to be the safest and best approach, and is therefore the approach proposed in this paper.

- Q3. Do you agree that payee invoices should contain:**
- a. for each FTR held by the payee, the net of the FTR Hedge Value minus the FTR Acquisition Cost, where that net value is positive, and**
  - b. for each assignment for which the payee is the assignor and for which the Assignment Difference Payment is negative, the absolute value of the Assignment Difference Payment?**
- In this case, payer invoices would contain:**
- for each FTR held by the payer, the net of the FTR Acquisition Cost minus the FTR Hedge Value, where that net value is positive, and
  - for each assignment for which the payer is the assignor and for which the Assignment Difference Payment is positive, the Assignment Difference Payment.

## 4.5 Options for the priority in which amounts on FTR participants' payee invoices are to be paid

- 4.5.1 Depending on whether Option A, B or C is selected from section 4.4, different options will be available for the relative priority to attach to different items on FTR participants' payee invoices.
- 4.5.2 If **Option A** is selected so that payee invoices specify *FTR Hedge Values net of FTR Acquisition Costs*, it would be necessary to give all payments to FTR participants equal priority. That is, the following payments would have equal priority:
- (i) the positive net hedge value specified in paragraph 4.4.1(a)(i); and
  - (ii) any negative Assignment Difference Payments.
- 4.5.3 The reason for scaling these two payments together (without one taking priority over the other) is that, if one took priority over the other, participants could form a coalition to assign their FTRs to each other in such a way that they would reduce their exposure to this scaling, shifting the burden of the scaling onto other parties. This appears to promote inefficient effort in avoiding scaling.

4.5.4 If **Option B** is selected so that payee invoices contain no 'netting' of FTR-related amounts, the sub-options are:

- (a) **Sub-option a –Hedge Values High Priority:** The funds available to pay to FTR participants are allocated to items in the following priority order:
  - (i) positive FTR Hedge Values;
  - (ii) negative FTR Acquisition Costs, and any negative Assignment Difference Payments;<sup>4</sup>
- (b) **Sub-option b –Hedge Values Equal Priority:** The funds available to pay to FTR participants are allocated pro rata to all items on the payee invoice; and
- (c) **Sub-option c –Hedge Values Low Priority:** The funds available to pay to FTR participants are allocated to items in the following priority order:
  - (i) negative FTR Acquisition Costs and any negative Assignment Difference Payments;
  - (ii) positive FTR Hedge Values.

4.5.5 If **Option C** is selected so that FTR participants make/receive only a single net payment to/from the clearing manager, then it would be necessary to give all payments to FTR participants equal priority.<sup>5</sup>

## 4.6 Proposal

4.6.1 It is proposed that payee invoices contain:

- (a) for each registered FTR, the *FTR Hedge Value net of the FTR Acquisition Cost*, where that value is positive; and
- (b) for each registered assignment, the absolute value of the Assignment Difference Payment, where the Assignment Difference Payment is negative.

Payer invoices would contain corresponding values. This is Option A from section 4.4.

4.6.2 It is proposed that, in the event that a settlement default causes a need for short payments from the FTR account, all payments of residual loss and constraint

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<sup>4</sup> It seems necessary to allocate an identical priority to negative FTR Acquisition Costs and any negative Assignment Difference Payments. If they had different priorities, there would be an incentive for participants to form a coalition to assign FTRs between themselves so as to shift the burden of the default scaling onto other parties.

<sup>5</sup> Otherwise problems could arise if a payee was scaled back below zero, so that it had to pay the clearing manager.

excess to grid owners, and all payments on FTR participants' payee invoices, should be scaled back with equal priority.

- 4.6.3 It should be noted that this proposed approach to scaling for settlement default is not analogous to the preferred approach (or approaches) to scaling for revenue inadequacy discussed in section 3. The proposal is that scaling for revenue inadequacy and scaling for settlement default be handled by two separate clauses in the Code.

## 5. Invoicing when final pricing is delayed

*When final pricing is substantially delayed for some trading periods, the Code requires the clearing manager to issue invoices within two business days of delayed final prices being published. It would be very expensive for the clearing manager to build systems to meet this requirement. It is proposed to remove the requirement. This would allow the clearing manager and the Authority to negotiate appropriate systems to deal with these rare events.*

### 5.1 Introduction

- 5.1.1 Final prices are usually determined within 2 to 3 days after the trading day. However, it is possible for the publication of final prices to be delayed. This can happen when there is a claim for an undesirable trading situation (UTS), but it can also happen without a UTS claim. The potential for delay in the publication of final prices raises the possibility that a trading month may need to be invoiced and settled without final prices for some of the trading periods in that month.
- 5.1.2 The Code has not historically contained specific provisions governing how this situation should be handled. Where this has occurred historically (and therefore in the absence of FTRs), the clearing manager has excluded from settlement the trading periods for which final prices are delayed. Those trading periods have been settled separately after the final prices have been published.
- 5.1.3 One of the Code amendments introduced as part of the FTR project was the insertion of clause 14.36(3), which provides:
  - (3) At the same time as the **clearing manager** issues *[normal monthly invoices to purchasers (2 business days after reconciliation information becomes available)]* or, if **publication of final prices** is delayed under clause 13.184 for any **trading period** in the **billing period**, **2 business days** after the relevant **final prices** are **published**, the **clearing manager** must issue an invoice in respect of the settlement of any amount owing under an **FTR** and any **FTR payment** due in respect of an **FTR**.

### 5.2 Problems and discussion

- 5.2.1 **Short delays should not require special invoices:** Clause 14.36(3) addresses the situation where the publication of final prices is delayed. That delay may be for a short period or a long period. If the delay is for a short period, there should be no need for special invoicing provisions. For example, if prices for the 15<sup>th</sup> day of the month are published on the 25<sup>th</sup> day of the month, they will be available as normal for the monthly invoice issued near the beginning of the following month. A special invoice should be required only if the delay is long enough such that the

delayed trading periods cannot be invoiced as part of the normal monthly invoicing process.

- 5.2.2 **No link with spot market settlement:** Clause 14.36(3) requires the clearing manager to issue an invoice in respect of “any amount owing under an FTR and any FTR payment due in respect of an FTR”. This is ambiguous as to whether Assignment Difference Payments are included. Perhaps more importantly, it does not mention the inclusion of non-FTR-related amounts such as amounts for purchases, generation, constrained on amounts, hedge settlement agreements, or interruptible reserves. There is no provision linking the settlement of FTRs with the settlement of those ‘spot market’ amounts.
- 5.2.3 **Timeline would require expensive automation:** Clause 14.36(3) requires FTR-related invoices to be issued within *2 business days* from the publication of final prices. This timetable would require expensive automation of systems (rather than relying on manual adjustments) to deal with a very rare scenario.
- 5.2.4 **No provision for supporting information:** The Code does not specify a process for the clearing manager to obtain the information it needs to calculate the invoices. In particular, the Code does not require the FTR manager to provide, in a timely fashion to support the clearing manager’s timetable, the FTR-related loss and constraint excess information relating to the trading periods for which final prices were delayed.

## 5.3 Past examples

- 5.3.1 It may be useful to note how the clearing manager has handled previous examples where final prices for some trading periods have not be available prior to invoicing for that month.

### **29 April 2007, trading period 37**

- 5.3.2 There was a substantial delay in the publication of final prices for trading period 37 on 29 April 2007. The clearing manager’s normal monthly settlement for April (on 21 May) excluded that trading period from settlement for any invoice items that used final prices in their calculation (electricity settlement, hedge settlement, constrained on compensation, frequency keeping and instantaneous reserves).
- 5.3.3 A ‘washup’ settlement occurred once final prices were published. Note that the term ‘wash up’ is used loosely here. Wash ups under the Code relate to adjustments to participants’ quantities, whereas in this case the settlement involved the recalculation of settlement amounts following the inclusion of additional trading periods, and settlement of the differences between the original settlement and the newly calculated settlement.

## **26 March 2011**

- 5.3.4 The publication of final prices for all trading periods on 26 March 2011 was delayed for over 13 months while an alleged UTS was dealt with. Final prices for that day were published on 17 May 2012.
- 5.3.5 The clearing manager settled the month of March 2011, excluding the 26<sup>th</sup> day, on 20 April 2011 in accordance with the normal timetable for settlement. Settlement of trades for 26 March 2011 has not yet occurred.
- 5.3.6 Settlement of ASX New Zealand futures and options contracts is also affected when final prices are delayed. The Authority understands that ASX originally settled the 2011Q1 contracts on interim prices shortly after the end of that quarter, and that there has recently been a resettlement following the publication of final prices.

## **5.4 Suggested process for managing the non-availability of final prices**

- 5.4.1 When final prices are delayed for some trading periods so that they are not available in time for inclusion in the regular monthly invoice, it would seem appropriate to settle the non-delayed trading periods in accordance with the normal monthly invoicing timetable. However, the Code does not specify how this is to be done, and there are some issues to consider here that may not be straight forward. One way to do this would be as follows.
- (a) Calculate for the non-delayed trading periods the settlement amounts for purchases, generation, loss and constraint excess (and the division of that amount into FTR-related and non-FTR-related categories), constrained on, purchaser constrained off (once dispatchable demand is introduced), interruptible reserve, frequency keeping<sup>6</sup> and hedge settlement agreements.
  - (b) Calculate other ancillary services (e.g. black start etc) and must-run dispatch auction amounts for the whole month, since those can be calculated without reference to final prices.
  - (c) Calculate for the non-delayed trading periods the following *provisional* FTR-related payments:
    - (i) FTR Hedge Values;

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<sup>6</sup> Frequency keeping could not be settled for the whole month because some frequency keeping costs depend on final prices.



- (ii) FTR Acquisition Costs, assuming the acquisition cost for an FTR is a constant \$/MWh figure throughout the month;<sup>7</sup>
- (iii) Assignment Difference Payments can be calculated for the non-delayed trading periods, on the basis that the original FTR Acquisition Cost and the FTR Disclosed Assignment Price are both constant in \$/MWh terms over the whole month of the FTR;<sup>8</sup> and
- (iv) residual loss and constraint excess for paying to each grid owner.
- (d) Calculate any scaling factor for revenue inadequacy in relation to the non-delayed trading periods.
- (e) If there is a settlement default, short payments can be made to those who receive funds from the FTR account in relation to the partial month.

5.4.2 Once final prices become available, the monthly settlement would be recalculated as a whole. This could involve the recalculation of scaling for revenue inadequacy. It could potentially involve the recalculation of amounts by which payees (and grid owners) are scaled back following a payer default. Participants would be required to pay the difference between their original settlement amount and the newly calculated amount.

## 5.5 Options for the Code

5.5.1 There are three broad options for how the Code could address the potential for long delay in the publication of final prices:

- (a) **Code remains silent:** The Code could be amended to remove the requirement in clause 14.36(3) for the issuing of an invoice within 2 business days after delayed final prices are published.

The problem of invoicing when final prices are delayed can be resolved either by the goodwill of participants implicitly consenting to a process that is transparent and reasonable or, if it is justified under the Code, by the Authority declaring a UTS to provide wide powers to require parties to follow a process laid out by the Authority. Since this issue arises infrequently, it may be best to manage it through the Authority's existing general powers rather than through specifying detailed specific process.

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<sup>7</sup> FTR Acquisition Costs and Assignment Difference Payments could in fact be calculated for the whole month rather than just for the non-delayed trading periods. However, this could confuse the calculation of provisional residual loss and constraint excess. It also seems sensible to settle these payments in a way that covers the same trading periods as settlements for FTR Hedge Values.

<sup>8</sup> Refer to footnote 7.

This approach could also be chosen as an interim measure prior to further detailed work to develop Code amendments and to design a process for managing invoicing for delayed final prices.

(b) **Code requires special invoice within 2 business days (status quo):**

The Code would be left as it stands at present. It requires the clearing manager to issue an invoice within 2 business days after the publication of delayed final prices.

The clearing manager has noted that it would be costly to develop systems so that this timeframe can be achieved. The clearing manager's high level cost estimate would be an additional \$75,000 to \$175,000. The cost may be higher if systems other than the invoicing system are affected and need to be changed.

(c) **Code sets out full process:** The Authority would develop, in conjunction with the clearing manager, a more flexible (manual), lower-cost process for invoicing when final prices are delayed. Code amendments would then be introduced to formalise that process and to support it by requiring other parties to provide the information used by the clearing manager to prepare the invoices.

The difficulty with this option is that it would take some time to develop appropriate Code amendments and test them with the clearing manager. Given the rarity of long delays in final pricing the Authority's limited resources may be better deployed on more pressing issues with FTR implementation.

5.5.2 The proposal is that option (a) be selected. When the clearing manager is developing its systems to implement FTRs, it can negotiate with the Authority to include elements within the system that would support (but not fully automate) invoicing when final prices are delayed. Once that system is designed, the Authority could consider making appropriate Code changes to formalise the system.

**Q4. Do you agree with the proposal to remove the requirement from clause 14.36(3) that the clearing manager issue invoices within 2 business days of delayed final prices being published? Note that this proposal would allow the clearing manager and the Authority to negotiate appropriate system features to help deal with invoicing following delays in final prices, with a view to later amendment of the Code.**

## 6. Change to schedule 14.6

*When determining the amount of loss and constraint excess to allocate to supporting FTRs, the Code requires the FTR manager to use a methodology set out in schedule 14.6. The FTR manager has notified the Authority that the methodology is not robust to some unusual situations that might arise. The proposal is for the methodology to use balanced injection patterns (rather than unbalanced injection patterns) as an input. This will make the methodology more robust.*

### 6.1 Calculation of balanced FTR injection patterns

- 6.1.1 In detailing the precise implementation requirements of Schedule 14.6, EMS, the FTR manager, identified a concern that, in its opinion, clause 5(5) of the Code is impossible to be complied with, and a Code amendment is required.
- 6.1.2 Clause 5 requires determining unbalanced FTR injection patterns on the Normal Grid Configuration, and using them to determine the required volume of balanced FTR injection patterns, which are the outputs of clause 5 and form the inputs to the rest of the Schedule 14.6 calculations. Clause 5(5) sets this volume relationship by requiring that the implied flow on each AC branch for each balanced FTR injection pattern must be greater than or equal to the flow on that branch implied by the corresponding unbalanced FTR injection pattern (greater than or equal to criterion).
- 6.1.3 Under the current provisions it is likely the calculation would collect a greater amount of the loss and constraint excess than was originally anticipated. This is due to the possibility that from time to time some relatively insignificant branch could have a disproportionate impact on the volume of balanced FTR injection patterns required to meet the greater than or equal to criterion. This introduces a degree of uncertainty for both market participants and for the FTR manager in predicting the amount of loss and constraint excess likely to be collected in any future month.
- 6.1.4 Having considered the Code change proposal from EMS, the Authority agrees that, although unlikely, a situation could arise where no balanced FTR injection pattern exists where the flow on every AC branch is greater than or equal to the flow on that branch implied by the corresponding unbalanced FTR injection pattern.
- 6.1.5 The Authority therefore considers that a Code change is necessary and also agrees that EMS' proposed solution is the most suitable approach.

## Analysis

- 6.1.6 Should Schedule 14.6 remain unchanged there is a possibility that the FTR manager could be in breach of the Code through no fault of its own. This therefore establishes the need for a Code amendment.
- 6.1.7 The proposed solution is relatively simple by only using balanced injection patterns for Schedule 14.6, rather than requiring calculations to use both balanced and unbalanced injection patterns, which account for losses on the transmission system. The primary reason for initially requiring unbalanced injection patterns was to maximise the amount of loss and constraint excess available for FTRs.
- 6.1.8 Using just balanced injection patterns for Schedule 14.6 will reduce the maximum amount of loss and constraint excess that can be used to fund FTRs. However, the impact will be within the margin of uncertainty described in paragraph 6.1.3, which is estimated at around 5% on average. This view was supported by members of the locational price risk technical group when they were consulted on the proposal at technical group meeting of 13 June 2012.
- 6.1.9 The margin of uncertainty around the amount of loss and constraint excess that could be taken for FTRs using balanced injection patterns would be much narrower than the current calculation. This will enable the FTR manager to be less conservative in establishing an appropriate volume of FTRs to be offered to the market, and should result in somewhat more consistency in FTR revenue adequacy from month to month. This reduced margin of uncertainty will also benefit those participants who rely on the hedging properties of the portion of the LCE not taken for the FTR.
- 6.1.10 Calculating Schedule 14.6 using only balanced injection patterns is far simpler, and as a result the software to be developed by the FTR manager and Nexant will also be simpler. This will offer a saving on software development of \$24,000; this is a one-off cost relating to the system delivery. This saving will be passed through to the Authority.

<b>Q5. Do you agree with the proposal to only use balanced injection patterns for schedule 14.6 calculations?</b>
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## 7. Minor Code amendments

- 7.1.1 The Authority is satisfied that the nature of the following Code amendments are technical and non-controversial. Therefore, the Authority considers them to be minor and as per clause 39(3) of the Electricity Industry Act 2010 there is no requirement to prepare a regulatory statement.

## 7.2 Terminology for FTR-related payments

- 7.2.1 It is proposed to amend the Code to incorporate the terms “FTR Hedge Value” and “FTR Acquisition Cost”. These terms are considered to be clearer than the equivalent terms currently used in the Code. This change will not of itself alter the meaning of the Code, but it will enable the other proposals in this paper to be drafted in a clearer way.

## 7.3 Clarify obligation to provide information about assignments

- 7.3.1 Clauses 13.248 to 13.250 provide a framework for assigning FTRs bilaterally between FTR participants (a ‘secondary market’). It is proposed to amend clause 13.248(1) as follows:
- (1) If a person (“assignor”) wishes to assign an **FTR** to another person (“assignee”) and have that assignment registered by the **FTR manager**, the assignor and assignee of the **FTR** must complete and sign Form 1 in Schedule 13.6 and provide it to the **FTR manager**.
- 7.3.2 This amendment clarifies that parties are welcome to trade the cash flows associated with an FTR bilaterally without providing information to the FTR manager about the trade. However, if parties do this the FTR manager will not register the trade and the clearing manager will not recognise the trade for settlement purposes. The clearing manager will settle the FTR with the registered owner, and it would be up to the parties to the bilateral trade to settle that trade between them bilaterally.

## 7.4 Clarify timing of assignment difference payments to the clearing manager

- 7.4.1 When an FTR is assigned, the parties to the trade may elect to provide information about the trade to the FTR Manager so that the trade can be settled by the clearing manager. No timeframe is provided for the provision of this information. Consequently, a situation may arise where the parties wait several days, weeks or months before disclosing that information. If at that point the

parties disclose a price under clause 13.249, a positive Assignment Difference Payment may arise so that the amount needs to be paid by the assignor to the clearing manager. Clause 13.249(5) says “The clearing manager must include the [Assignment Difference Payment] in the invoice for the billing period *in which the assignment took place.*”

7.4.2 The time at which “the assignment took place” could refer either to:

- (a) the time at which the parties contracted to trade the FTR; or
- (b) the time at which the trade was registered.

7.4.3 If the first interpretation applies, a situation could arise where it is not possible for the clearing manager to invoice for the Assignment Difference Payment, because it has already invoiced for that billing month. Consequently, it is proposed to clarify that the phrase refers to the time at which the trade was registered.

7.4.4 Information provided to the FTR manager about a trade is provided in Form 1 of Schedule 13.6. There is a field labelled “Date” in that form. It is proposed to clarify that this means the date at which the contract to assign the FTR was entered.

## **7.5 Additional minor Code change to schedule 14.6**

7.5.1 The following additional minor Code amendment will also be made:

- (a) The definition of simultaneously feasible in clause 2(1) refers to clause 5(8), but clause 5(8) does not exist. It should now refer to clause 5(2) instead.

## **8. Scaling for revenue inadequacy: regulatory statement**

### **8.1 Authority's proposal**

8.1.1 If the clearing manager determines that the calculated inflows into the FTR account from:

- (a) the amount of loss and constraint excess to be used to fund FTRs;
- (b) any positive FTR Acquisition Costs;
- (c) any negative FTR Hedge Values; and
- (d) any amounts to be paid by an assignor to the clearing manager in relation to the assignment of an FTR,

... are less than the calculated net outflows from the FTR account for:

- (e) any negative FTR Acquisition Costs;
- (f) any positive FTR Hedge Values; and
- (g) any amounts to be paid by the clearing manager to an assignor under clause 13.249(7) of the Code,

the clearing manager must amend the invoiced amounts for FTR Hedge Values (whether they are positive or negative) by scaling them by a factor  $C/D$ , where:

$C$  is the calculated net inflow of funds into the FTR account from (a), (b), (d), (e) and (g), and

$D$  is the calculated net outflow of funds from the FTR account from (c) and (f).

8.1.2 The full proposed Code amendment is set out in Appendix B.

### **8.2 Statement of the objectives of the proposed amendment**

8.2.1 The objectives of the proposed amendment are to:

- (a) establish a clear process for scaling for revenue inadequacy; and
- (b) ensure that the process for scaling does not encourage inefficient outcomes such as inefficient FTR secondary trading, or the disclosure of non-genuine prices for secondary trades.

## 8.3 Evaluation of the costs and benefits of the proposed amendment

8.3.1 The main benefits from the proposed amendment are:

- (a) **Improved clarity:** Under the existing Code, there are some ambiguities as to how scaling for revenue inadequacy would be conducted. The proposed amendment could provide a benefit to the market in terms of reduced industry and regulatory resources being devoted to interpreting and complying with the Code; and
- (b) **Reduced incentives for inefficient activity:** Depending on how the Code as it stands at present would be implemented, the arrangements for scaling for revenue inadequacy could create incentives for FTR participants to engage in inefficient activities such as delaying the disclosure of the price associated with secondary trades, disclosing a non-genuine price for secondary trades, or forming a coalition of FTR participants to engage in secondary trading so as to reduce the collective exposure of the coalition to being scaled for revenue inadequacy, shifting the burden of that scaling onto other parties. The proposal would remove the incentives for that inefficient activity, resulting in a more efficient use of industry resources.

8.3.2 There are no additional costs associated with the proposal that would not already be incurred in implementing the counterfactual (which is that no changes are made to the Code).

## 8.4 Evaluation of alternative means of achieving the objectives of the proposed amendment

8.4.1 Four options for scaling for revenue inadequacy have been described and analysed. All four options would achieve greater clarity in the meaning of the Code provisions. Options 1 and 2 would encourage different kinds of inefficient activities, so are not proposed. Option 3 is not proposed because it would interfere with the integrity of the FTR auction which assumes a relationship between the payouts on different FTR products and therefore creates a relationship between the prices of those products. Option 4 achieves the objectives of the proposal while maintaining the integrity of the FTR auction and the relationship between the four FTR products.

## 8.5 Assessment under section 32(1)

8.5.1 Section 32(1) of the Act provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:



- (a) competition in the electricity industry;
- (b) the reliable supply of electricity to consumers;
- (c) the efficient operation of the electricity industry;
- (d) the performance by the Authority of its functions;
- (e) any other matters specifically referred to in the Act as a matter for inclusion in the Code.

8.5.2 Table 2 sets out an assessment of the proposed amendment against the requirements of section 32(1) of the Act.

Table 2: Assessment of revenue inadequacy scaling proposal against section 32(1)

Section 32(1) requirements:	Response
The proposed amendment is consistent with the Authority's objective under section 15 of the Act, which is as follows:	
(a) to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers	The proposal meets this requirement. It promotes the efficient operation of the FTR market.
The proposed amendment is necessary or desirable to promote any or all of the following:	
(a) competition in the electricity industry;	The proposal has no direct impact on this requirement.
(b) the reliable supply of electricity to consumers;	The proposal has no direct impact on this requirement.
(c) the efficient operation of the electricity industry;	The proposal meets this requirement. It promotes the efficient operation of the FTR market.
(d) the performance by the Authority of its functions;	The proposal has no direct impact on this requirement.

(e) any other matter specifically referred to in this Act as a matter for inclusion in the Code.	Section 42(2) sets out a range of “new matters” to be included in the Code. Among those new matters is “mechanisms to help wholesale market participants manage price risks caused by constraints on the national grid”. The efficient implementation of FTRs will help participants to manage these price risks.
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## 8.6 Assessment against the Code amendment principles

- 8.6.1 When considering amendments to the Code, the Authority is required by its Consultation Charter to have regard to the following Code amendment principles, to the extent that the Authority considers that they are applicable.
- 8.6.2 *Principle 1 – Lawfulness:* The Authority and its advisory groups will only consider amendments to the Code that are lawful and that are consistent with the Act (and therefore consistent with the Authority’s statutory objective and its obligations under the Act).
- 8.6.3 The proposal is lawful and consistent with the Act.
- 8.6.4 *Principle 2 – Clearly Identified Efficiency Gain or Market or Regulatory Failure:* Within the legal framework specified in Principle 1, the Authority and its advisory groups will only consider using the Code to regulate market activity when:
- (a) it can be demonstrated that amendments to the Code will improve the efficiency of the electricity<sup>9</sup> industry for the long-term benefit of consumers;
  - (b) market failure is clearly identified, such as may arise from market power, externalities, asymmetric information and prohibitive transaction costs; or
  - (c) a problem is created by the existing Code, which either requires an amendment to the Code, or an amendment to the way in which the Code is applied.
- 8.6.5 The amendments to the Code will improve the efficiency of the electricity industry for the long-term benefit of consumers (relative to a counterfactual of no change being made to the Code to address scaling for revenue inadequacy). The proposal is also a response to problems created by the existing Code, namely a lack of clarity in arrangements for scaling for revenue inadequacy, and the potential for those arrangements to provide incentives for inefficient activities.

<sup>9</sup> Where efficiency refers to allocative, productive and dynamic efficiency, and improvements to efficiency include, for example, a reduction in transaction costs or a reduction in the scope for disputes between industry participants.

- 8.6.6 *Principle 3 – Quantitative Assessment:* When considering possible amendments to the Code, the Authority and its advisory groups will ensure disclosure of key assumptions and sensitivities, and use quantitative cost-benefit analysis to assess long-term net benefits for consumers, although the Authority recognises that quantitative analysis will not always be possible. This approach means that competition and reliability are assessed solely in regard to their economic efficiency effects. Particular care will be taken to include dynamic efficiency effects in the assessment, and the assessment will include sensitivity analysis when there is uncertainty about key parameters.
- 8.6.7 The costs of the proposal are considered to be zero relative to the counterfactual. The benefits are considered to be positive and substantial. The size of the benefits would depend on the way in which the existing Code would be implemented (the counterfactual), which is somewhat uncertain given the ambiguity in the existing Code. Given that the costs are zero, the Authority has not devoted resources to quantifying the size of the benefits.
- 8.6.8 The proposal is consistent with principles 1 to 3, so the tie-breaker principles (principles 4 to 9) are not considered relevant.

## 8.7 Conclusion

- 8.7.1 The proposal is expected to have positive net benefits. It is consistent with section 32(1) of the Act and with the Authority's Code amendment principles.

## 9. Invoicing and priorities for default short-payments: regulatory statement

### 9.1 Authority's proposal

9.1.1 It is proposed that payee invoices contain:

- (a) for each registered FTR, the *FTR Hedge Value net of the FTR Acquisition Cost*, where that value is positive; and
- (b) for each registered assignment, the absolute value of the Assignment Difference Payment, where the Assignment Difference Payment is negative.

Payer invoices would contain corresponding values. This is Option A from section 4.4.

9.1.2 It is proposed that, in the event that a settlement default causes a need for short payments from the FTR account, all payments of residual loss and constraint excess to grid owners, and all payments on FTR participants' payee invoices, should be scaled back with equal priority.

9.1.3 The full proposed Code amendment is set out in Appendix B.

### 9.2 Statement of the objectives of the proposed amendment

9.2.1 The objectives of the proposed amendment are to:

- (a) clarify what FTR-related values are to be included on payer and payee invoices;
- (b) establish clear arrangements for payment priorities in the event that a payer default leads to a shortfall of funds into the FTR account; and
- (c) minimise incentives for participants to engage in inefficient activities designed to avoid exposure to default scaling, and to shift the burden of that scaling onto other parties.

### 9.3 Evaluation of the costs and benefits of the proposed amendment

9.3.1 The main benefit from the proposed amendments is **improved clarity**. There is a great deal of ambiguity in the Code at present as to payment priorities in the event that default scaling of payments from the FTR account is necessary. The

proposal greatly improves clarity in this area. This could provide a benefit to the market in terms of reduced industry and regulatory resources being devoted to disputes that could arise following a payer default.

- 9.3.2 The costs of the proposal are zero. No changes are required to systems.
- 9.3.3 The size of the benefits would depend on the likelihood that default scaling would be required, and the costs that would be incurred in the counterfactual by participants in resolving disputes about default scaling. If default scaling occurs once every 10 years, and if the total costs incurred by all parties in resolving that dispute (which could include Court action) were \$5 million, the benefits might be quantified as \$0.5 million per year. At a discount rate of 8 percent and applying a 10 year benefit flow, this gives a present value of the benefit flow of \$3.3 million. This would also be the net present value (NPV) of the proposal, since costs are zero.

## **9.4 Evaluation of alternative means of achieving the objectives of the proposed amendment**

- 9.4.1 A range of different options have been considered for:
  - (a) the relative priority of payments to grid owners for residual loss and constraint excess, relative to payments to FTR participants;
  - (b) the items to include on payer and payee invoices; and
  - (c) the relative priority to assign to the different components of the payee invoices issued to FTR participants.
- 9.4.2 A range of arguments was considered for alternative approaches on the first of those issues. As none of the arguments were considered persuasive, the simplest solution (equal priority) has been proposed.
- 9.4.3 Alternatives were also considered in relation to the second item. The option of calculating a single net settlement amount for each participant's FTR-related activities was not selected because it could lead to incentives for inefficient activity to avoid default scaling. The option of avoiding any netting between FTR Hedge Values and FTR Acquisition Costs was not selected because it would increase settlement amounts, requiring greater bank support for the industry on settlement day without providing any clear benefit.
- 9.4.4 Given those two proposals, options for assigning different priorities to the different components on FTR participants' payee invoices was considered. The proposal is the only option that minimises incentives for inefficient activities to avoid default scaling and to shift the burden of that scaling onto others.

## 9.5 Assessment under section 32(1)

9.5.1 Section 32(1) of the Act provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:

- (a) competition in the electricity industry;
- (b) the reliable supply of electricity to consumers;
- (c) the efficient operation of the electricity industry;
- (d) the performance by the Authority of its functions;
- (e) any other matters specifically referred to in the Act as a matter for inclusion in the Code.

9.5.2 Table 3 sets out an assessment of the proposed amendment against the requirements of section 32(1) of the Act.

Table 3: Assessment of FTR default scaling proposal against section 32(1)

Section 32(1) requirements:	Response
The proposed amendment is consistent with the Authority's objective under section 15 of the Act, which is as follows:	
(a) to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers	The proposal meets this requirement. It promotes the efficient operation of the FTR market by avoiding the investment of resources by FTR participants and the regulator in disputes relating to default scaling.
The proposed amendment is necessary or desirable to promote any or all of the following:	
(b) competition in the electricity industry;	The proposal has no direct impact on this requirement.
(c) the reliable supply of electricity to consumers;	The proposal may have a positive influence on this requirement. By clarifying default scaling processes, the proposal increases certainty and may reduce the potential for the default of one participant to lead to a 'contagion' effect on other participants.

(d) the efficient operation of the electricity industry;	The proposal meets this requirement. It promotes the efficient operation of the FTR market, and default scaling in particular.
(e) the performance by the Authority of its functions;	The proposal has no direct impact on this requirement.
(f) any other matter specifically referred to in this Act as a matter for inclusion in the Code.	The proposal has no direct impact on this requirement.

## 9.6 Assessment against the Code amendment principles

- 9.6.1 When considering amendments to the Code, the Authority is required by its Consultation Charter to have regard to the following Code amendment principles, to the extent that the Authority considers that they are applicable.
- 9.6.2 *Principle 1 – Lawfulness:* The Authority and its advisory groups will only consider amendments to the Code that are lawful and that are consistent with the Act (and therefore consistent with the Authority’s statutory objective and its obligations under the Act).
- 9.6.3 The proposal is lawful and consistent with the Act.
- 9.6.4 *Principle 2 – Clearly Identified Efficiency Gain or Market or Regulatory Failure:* Within the legal framework specified in Principle 1, the Authority and its advisory groups will only consider using the Code to regulate market activity when:
- (a) it can be demonstrated that amendments to the Code will improve the efficiency of the electricity<sup>10</sup> industry for the long-term benefit of consumers;
  - (b) market failure is clearly identified, such as may arise from market power, externalities, asymmetric information and prohibitive transaction costs; or
  - (c) a problem is created by the existing Code, which either requires an amendment to the Code, or an amendment to the way in which the Code is applied.
- 9.6.5 The amendments to the Code will improve the efficiency of the electricity industry for the long-term benefit of consumers, relative to a counter-factual under which there would be considerable dispute following a default as to whether scaling of

<sup>10</sup> Where efficiency refers to allocative, productive and dynamic efficiency, and improvements to efficiency include, for example, a reduction in transaction costs or a reduction in the scope for disputes between industry participants.

payments from the FTR account was carried out lawfully. The proposal is also a response to problems created by the existing Code, namely a lack of clarity in arrangements for default scaling.

- 9.6.6 *Principle 3 – Quantitative Assessment:* When considering possible amendments to the Code, the Authority and its advisory groups will ensure disclosure of key assumptions and sensitivities, and use quantitative cost-benefit analysis to assess long-term net benefits for consumers, although the Authority recognises that quantitative analysis will not always be possible. This approach means that competition and reliability are assessed solely in regard to their economic efficiency effects. Particular care will be taken to include dynamic efficiency effects in the assessment, and the assessment will include sensitivity analysis when there is uncertainty about key parameters.
- 9.6.7 The analysis of the costs and benefits of the proposal in section 9.3 discloses key assumptions. Given that the costs of the proposal are regarded as zero, no sensitivity analysis has been performed on the estimated benefits since any significant benefit value would deliver positive net benefits.
- 9.6.8 The proposal is consistent with principles 1 to 3, so the tie-breaker principles (principles 4 to 9) are not considered relevant.

## **9.7 Conclusion**

- 9.7.1 The proposal is expected to have positive net benefits. It is consistent with section 32(1) of the Act and with the Authority's Code amendment principles.



## **10. Invoicing when final pricing is delayed: regulatory statement**

### **10.1 Authority's proposal**

10.1.1 It is proposed that the following words be deleted from clause 14.36(3):

“or, if publication of final prices is delayed under clause 13.184 for any trading period in the billing period, 2 business days after the relevant final prices are published,”.

10.1.2 This would mean that there would be no specific provisions in the Code relating to invoicing in the event that final prices are delayed. It would allow the clearing manager and the Authority to negotiate appropriate changes to the clearing manager's systems to help to deal with those situations. Once appropriate changes have been identified, the Authority would expect to amend the Code to recognise those arrangements and to support invoicing.

10.1.3 The proposed Code amendment is included in Appendix B.

### **10.2 Statement of the objectives of the proposed amendment**

10.2.1 The objectives of the proposed amendment are to:

- (a) enable the clearing manager to develop systems that support invoicing when final prices are delayed while making sensible tradeoffs with respect to the cost of the system changes and the timeframe in which those invoices can be published; and
- (b) maintain consistency with a vision of making subsequent Code amendments to support invoicing when final prices are delayed.

### **10.3 Evaluation of the costs and benefits of the proposed amendment**

10.3.1 The main benefit from the proposed amendment relative to the counterfactual (of leaving clause 14.36(3) of the Code as it stands) arises from the cost saving to the clearing manager (and ultimately to levy payers) from not having to design and implement systems that can produce an invoice within 2 business days of delayed final prices being published. The clearing manager has indicated this cost could be between \$75,000 and \$175,000, although there are indications it could be even higher. Some of that cost will be incurred under the proposal as

the clearing manager will include some design features in its systems that help it to produce invoices in these circumstances. An estimate of the benefits from the proposal could be around \$100,000 (present value). There are no further costs arising from the proposal, so the net present value of the proposal is estimated at \$100,000.

## 10.4 Evaluation of alternative means of achieving the objectives of the proposed amendment

10.4.1 Apart from the status quo and the proposal, a third option was also considered. Under the third option, the Code would be amended without further delay to address in a robust fashion the issue of invoicing following delayed final prices. The difficulty with this option is that it would take some time to develop appropriate Code amendments and test them with the clearing manager. Given the rarity of long delays in final pricing, the Authority considers that its limited policy development resources would be better deployed on more pressing issues at present.

## 10.5 Assessment under section 32(1)

10.5.1 Section 32(1) of the Act provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:

- (a) competition in the electricity industry;
- (b) the reliable supply of electricity to consumers;
- (c) the efficient operation of the electricity industry;
- (d) the performance by the Authority of its functions; and
- (e) any other matters specifically referred to in the Act as a matter for inclusion in the Code.

10.5.2 Table 4 sets out an assessment of the proposed amendment against the requirements of section 32(1) of the Act.

Table 4: Assessment of FTR default scaling proposal against section 32(1)

Section 32(1) requirements:	Response
The proposed amendment is consistent with the Authority's objective under section 15 of the Act, which is as follows:	

(a) to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers	The proposal meets this requirement. It promotes the efficient deployment of resources by the clearing manager in implementing FTRs, which will be of long term benefit to consumers.
The proposed amendment is necessary or desirable to promote any or all of the following:	
(b) competition in the electricity industry;	The proposal has no direct impact on this requirement.
(c) the reliable supply of electricity to consumers;	The proposal has no direct impact on this requirement.
(d) the efficient operation of the electricity industry;	The proposal meets this requirement. It promotes the efficient management of situations where final prices are published after a substantial delay so that a new invoice is required.
(e) the performance by the Authority of its functions;	The proposal has no direct impact on this requirement.
(f) any other matter specifically referred to in this Act as a matter for inclusion in the Code.	The proposal has no direct impact on this requirement.

## 10.6 Assessment against the Code amendment principles

- 10.6.1 When considering amendments to the Code, the Authority is required by its Consultation Charter to have regard to the following Code amendment principles, to the extent that the Authority considers that they are applicable.
- 10.6.2 *Principle 1 – Lawfulness:* The Authority and its advisory groups will only consider amendments to the Code that are lawful and that are consistent with the Act (and therefore consistent with the Authority's statutory objective and its obligations under the Act).
- 10.6.3 The proposal is lawful and consistent with the Act.
- 10.6.4 *Principle 2 – Clearly Identified Efficiency Gain or Market or Regulatory Failure:* Within the legal framework specified in Principle 1, the Authority and its advisory groups will only consider using the Code to regulate market activity when:

- (a) it can be demonstrated that amendments to the Code will improve the efficiency of the electricity<sup>11</sup> industry for the long-term benefit of consumers;
- (b) market failure is clearly identified, such as may arise from market power, externalities, asymmetric information and prohibitive transaction costs; or
- (c) a problem is created by the existing Code, which either requires an amendment to the Code, or an amendment to the way in which the Code is applied.

10.6.5 The amendments to the Code will improve the efficiency of the electricity industry (through avoiding requiring the clearing manager to incur costs that are not efficient) for the long-term benefit of consumers. The proposal is also a response to problems created by the existing Code, namely a requirement to publish an invoice in a timeframe that is not realistically achievable at reasonable cost.

10.6.6 *Principle 3 – Quantitative Assessment:* When considering possible amendments to the Code, the Authority and its advisory groups will ensure disclosure of key assumptions and sensitivities, and use quantitative cost-benefit analysis to assess long-term net benefits for consumers, although the Authority recognises that quantitative analysis will not always be possible. This approach means that competition and reliability are assessed solely in regard to their economic efficiency effects. Particular care will be taken to include dynamic efficiency effects in the assessment, and the assessment will include sensitivity analysis when there is uncertainty about key parameters.

10.6.7 The analysis of the costs and benefits of the proposal in section 10.3 discloses all the information used to estimate the net present value of the proposal. Given that the costs of the proposal are regarded as zero, no sensitivity analysis has been performed on the estimated benefits since any significant benefit value would deliver positive net benefits.

10.6.8 The proposal is consistent with principles 1 to 3, so the tie-breaker principles (principles 4 to 9) are not considered relevant.

## 10.7 Conclusion

10.7.1 The proposal is expected to have positive net benefits. It is consistent with section 32(1) of the Act and with the Authority's Code amendment principles.

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<sup>11</sup> Where efficiency refers to allocative, productive and dynamic efficiency, and improvements to efficiency include, for example, a reduction in transaction costs or a reduction in the scope for disputes between industry participants.

## **11. Change to Schedule 14.6: regulatory statement**

### **11.1 Authority's proposal**

- 11.1.1 It is proposed to alter clause 5 of schedule 14.6 by removing the requirement to determine unbalanced FTR flows. The required volume of balanced FTR injection(s) will instead be determined by using balanced injection FTR flows.

### **11.2 Statement of the objectives of the proposed amendment**

- 11.2.1 The objective of the proposed amendment is:
- (a) to promotes the efficient operation of the FTR market by ensuring that the calculation of balanced FTR injection patterns is both appropriate and feasible for all normal grid configurations.

### **11.3 Evaluation of the costs and benefits of the proposed amendment**

- 11.3.1 The main benefit from the proposed amendment is that it ensures that the Code is both appropriate and workable allowing for the efficient operation of the FTR market. This could provide a benefit to the market in terms of reduced compliance and regulatory resources being devoted to any related Code breaches.
- 11.3.2 In addition, there is also a cost saving to the FTR manager (passed through to the Authority and ultimately to levy payers) from not having to design and implement systems to calculate unbalanced FTR flows. The FTR manager has indicated this cost could be around \$24,000. The costs of the proposal are zero, as systems have not yet been developed to perform the function of schedule 14.6.

### **11.4 Evaluation of alternative means of achieving the objectives of the proposed amendment**

- 11.4.1 A range of other options were considered and discussed with the locational price risk technical group. Options were broadly split into the following two categories:
- (a) amendments to the current drafting of schedule 14.6; and
  - (b) alternatives to schedule 14.6.

- 11.4.2 Alternatives to schedule 14.6 were rejected. The difficulty with options in this category is that it would take some time to develop appropriate Code amendments and to test them. Given the urgency to resolve this issue, the Authority considers that there is insufficient time to development these options without delaying the start of the FTR market.
- 11.4.3 Two options for amending the current Code provisions were considered, the proposed amendment and an option that did not require balanced flows to equal or exceed unbalanced flows on every branch. This option proposed that the sink end of the flow could be rounded up to equal the source end of the flow.
- 11.4.4 However, after consideration, whilst also achieving the original policy intent this option was considered to be complex and costly to implement.

## 11.5 Assessment under section 32(1)

- 11.5.1 Section 32(1) of the Act provides that Code provisions must be consistent with the Authority's objective and be necessary or desirable to promote any or all of the following:
- (a) competition in the electricity industry;
  - (b) the reliable supply of electricity to consumers;
  - (c) the efficient operation of the electricity industry;
  - (d) the performance by the Authority of its functions;
  - (e) any other matters specifically referred to in this Act as a matter for inclusion in the Code.
- 11.5.2 sets out an assessment of the proposed amendment against the requirements of section 32(1) of the Act.

Table 5: Assessment of change to Schedule 14.6 against section 32(1)

Section 32(1) requirements:	Response
The proposed amendment is consistent with the Authority's objective under section 15 of the Act, which is as follows:	
(a) to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers	The proposal meets this requirement. It promotes the efficient operation of the FTR market by ensuring that the calculation of balanced FTR injection patterns is both appropriate and feasible for all normal grid configurations.

The proposed amendment is necessary or desirable to promote any or all of the following:	
(b) competition in the electricity industry;	The proposal has no direct impact on this requirement.
(c) the reliable supply of electricity to consumers;	The proposal has no direct impact on this requirement.
(d) the efficient operation of the electricity industry;	The proposal meets this requirement. It promotes the efficient operation of the FTR market.
(e) the performance by the Authority of its functions;	The proposal has no direct impact on this requirement.
(f) any other matter specifically referred to in this Act as a matter for inclusion in the Code.	The proposal has no direct impact on this requirement.

## 11.6 Assessment against the Code amendment principles

- 11.6.1 When considering amendments to the Code, the Authority is required by its Consultation Charter to have regard to the following Code amendment principles, to the extent that the Authority considers that they are applicable.
- 11.6.2 *Principle 1 – Lawfulness:* The Authority and its advisory groups will only consider amendments to the Code that are lawful and that are consistent with the Act (and therefore consistent with the Authority’s statutory objective and its obligations under the Act).
- 11.6.3 The proposal is lawful and consistent with the Act.
- 11.6.4 *Principle 2 – Clearly Identified Efficiency Gain or Market or Regulatory Failure:* Within the legal framework specified in Principle 1, the Authority and its advisory groups will only consider using the Code to regulate market activity when:
- (a) it can be demonstrated that amendments to the Code will improve the efficiency of the electricity<sup>12</sup> industry for the long-term benefit of consumers;

<sup>12</sup> Where efficiency refers to allocative, productive and dynamic efficiency, and improvements to efficiency include, for example, a reduction in transaction costs or a reduction in the scope for disputes between industry participants.

- (b) market failure is clearly identified, such as may arise from market power, externalities, asymmetric information and prohibitive transaction costs; or
- (c) a problem is created by the existing Code, which either requires an amendment to the Code, or an amendment to the way in which the Code is applied.

- 11.6.5 The proposal is a response to a problem created by the existing Code where by the FTR manager could be in breach of the Code when balanced flows are not equal or exceed unbalanced flows on every branch. This is something the FTR manager has no control over. As a result, the amendment to the Code will improve the efficiency of the electricity industry (through avoiding accidental breaches of the Code) for the long-term benefit of consumers.
- 11.6.6 *Principle 3 – Quantitative Assessment:* When considering possible amendments to the Code, the Authority and its advisory groups will ensure disclosure of key assumptions and sensitivities, and use quantitative cost-benefit analysis to assess long-term net benefits for consumers, although the Authority recognises that quantitative analysis will not always be possible. This approach means that competition and reliability are assessed solely in regard to their economic efficiency effects. Particular care will be taken to include dynamic efficiency effects in the assessment, and the assessment will include sensitivity analysis when there is uncertainty about key parameters.
- 11.6.7 The analysis of the costs and benefits of the proposal in section 11.3 discloses all the information used to estimate the net present value of the proposal. Given that the costs of the proposal are regarded as zero, no sensitivity analysis has been performed on the estimated benefits since any significant benefit value would deliver positive net benefits.
- 11.6.8 The proposal is consistent with principles 1 to 3, so the tie-breaker principles (principles 4 to 9) are not considered relevant.

## 11.7 Conclusion

The proposal is expected to have positive net benefits. It is consistent with section 32(1) of the Act and with the Authority's Code amendment principles.



## Appendix A Format for submissions

Question No.	Question	Response
1	Do you agree with the proposal to scale FTR Hedge Values (positive or negative) to manage revenue inadequacy?	
2	In the event of a shortfall of funds into the FTR account arising from a payer default, do you agree with the proposal to give payments from the FTR account to grid owners the same priority as payments to FTR participants?	
3	<p>Do you agree that payee invoices should contain:</p> <ul style="list-style-type: none"> <li>(i) for each FTR held by the payee, the net of the FTR Hedge Value minus the FTR Acquisition Cost, where that net value is positive, and</li> <li>(ii) for each assignment for which the payee is the assignor and for which the Assignment Difference Payment is negative, the absolute value of the Assignment Difference Payment?</li> </ul> <p>In this case, payer invoices would contain:</p> <ul style="list-style-type: none"> <li>(i) for each FTR held by the payer, the net of the FTR Acquisition Cost minus the FTR Hedge Value, where that net value is positive, and</li> <li>(ii) for each assignment for which the payer is the assignor and for which the Assignment Difference Payment is positive, the Assignment Difference Payment.</li> </ul>	
4	Do you agree with the proposal to remove the requirement from clause 14.36(3) that the clearing manager issue invoices within 2 business days of delayed final prices being published? Note that this proposal would allow the clearing manager and the Authority to negotiate appropriate system features to help deal with invoicing following delays in final prices, with a view to later amendment of the Code.	

5	Do you agree with the proposal to only use balanced injection patterns for schedule 14.6 calculations?	
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## **Appendix B Draft Code amendments**

# Draft proposed amendments to the Electricity Industry Participation Code

## Amendments to Part 1

**FTR ~~payment~~ acquisition cost** means—

- (a) the amount a **participant** must pay or be paid in respect of the acquisition of an **FTR** in an **FTR auction**; or
- (b) if an **FTR** has been assigned by the first holder of the **FTR**, the amount that becomes payable under clause 13.249(3)

**FTR hedge value** means the gross amount that becomes due and payable by the **clearing manager** or the holder of an **FTR** on the settlement of the **FTR** in accordance with the terms of the **FTR** (excluding the **FTR acquisition cost** and any amount payable under clause 13.249(4) or (7))

**obligation FTR** means an **FTR** for which the terms and conditions provide that—

- (a) (excluding **the FTR acquisition cost** ~~any amount payable by, or to be paid to, the holder of the FTR in respect of the acquisition of the FTR~~) the holder of the **FTR** is entitled to receive a payment when, for the **FTR period**, the difference between the price (calculated in accordance with the terms of the **FTR**) at the **hub** identified as hub B and the price at the **hub** identified as hub A in the **FTR** is positive; and
- (b) (excluding **the FTR acquisition cost** ~~any amount payable for the acquisition of the FTR~~) the holder must make a payment when the difference between those prices is negative

**option FTR** means an **FTR** for which the terms and conditions provide that—

- (a) (excluding **the FTR acquisition cost** ~~any amount payable by, or to be paid to, the holder of the FTR in respect of the acquisition of the FTR~~) the holder of the **FTR** is entitled to receive a payment when, for the **FTR period**, the difference between the price (calculated in accordance with the terms of the **FTR**) at the **hub** identified as hub B and the price at the **hub** identified as hub A in the **FTR** is positive; but
- (b) (excluding **the FTR acquisition cost** ~~any amount payable for the acquisition of the FTR~~) the holder is not required to make a payment when the difference between those prices is negative

## Amendments to Part 13

### *FTR register*

#### **13.247 FTR manager must operate FTR register**

- (1) The **FTR manager** must create and operate an **FTR register** that records—
  - (a) the holdings of **FTRs**; and
  - (b) the **FTR acquisition cost**~~payment~~ for each **FTR**; and
  - (c) assignments of **FTRs** including any price disclosed under clause 13.249; and
  - (d) the amount of **electricity** (in **MW**) to which each **FTR** relates.
- (2) The **FTR register** must contain an account for each holder of an **FTR**.
- (3) The **FTR manager** must assign a registered number to each **FTR** recorded in the **FTR register**.
- (4) The **FTR manager** must maintain an up to date copy of the **FTR register** and make it available to the public at no cost on the **FTR manager's** website at all reasonable times.

### *Assignment of FTRs*

#### **13.248 Assignment of FTRs**

- (1) If a person ("assignor") wishes to assign an **FTR** or part of an **FTR** to another person ("assignee") and have that assignment registered by the **FTR manager**, the assignor and assignee must complete and sign Form 1 in Schedule 13.6 and provide it to the **FTR manager**.
- (2) The form may be transmitted in electronic form through the **information system** if—
  - (a) both the assignor and assignee consent to completing and signing the form electronically; and
  - (b) the electronic form contains all of the information required by Form 1 in Schedule 13.6; and
  - (c) the notification of assignment to the **FTR manager** is in a format specified by the **FTR manager**.
- (3) The **FTR manager** must not register an assignment in the **FTR register** unless the **FTR manager** is satisfied that the assignee meets the prudential security requirements in Part 14.
- (4) The **FTR manager**, on being satisfied that all requirements for an assignment are met, must register the assignment on the **FTR register**.
- (4A) If an assignment is made under this clause in respect of part of an **FTR**, the **FTR manager** must register the assignment as follows:
  - (a) create a new record for an **FTR** in respect of the amount of **electricity** (in **MW**) to which the

- assignment relates; and
  - (b) amend the record for the **FTR** retained by the assignor by reducing the amount of **electricity** (in **MW**) to which the **FTR** relates so as to reflect the assignment.
- (5) An assignment of an **FTR** or part of an **FTR** is not effective unless it is registered on the **FTR register** by the **FTR manager**.
- (6) The **FTR manager** must not register an assignment that is expressed to have effect after the end of the **billing period** to which the **FTR** relates.

**13.249 Liability for FTR acquisition cost ~~payments~~ when FTR assigned and price disclosed**

- (1) This clause applies if—
  - (a) an **FTR** is assigned under clause 13.248; and
  - (b) the notification of assignment discloses the price (being an amount that may be positive or negative) at which the **FTR** has been assigned.
- (2) The **FTR manager** must provide a copy of the notification of assignment to the **clearing manager**.
- (3) The assignee becomes liable for the price disclosed under subclause (1)(b) when it becomes due on settlement of the **FTR**.
- (4) If the price disclosed in the notification is less than the **FTR acquisition cost ~~payment~~** in respect of the **FTR** that would, if the assignment had not taken place, become due on settlement of the **FTR**, the assignor becomes liable to pay the **clearing manager** an amount equal to the difference between the **FTR acquisition cost ~~payment~~** and the price at which the **FTR** has been assigned.
- (5) The **clearing manager** must include the amount payable under subclause (4) in the invoice for the **billing period** in which the assignment ~~took place~~ was registered.
- (6) The **clearing manager** must transfer to the **FTR account** any amount received pursuant to an invoice issued under this clause, but that amount must not be applied for the settlement of **FTRs** until the **billing period** in which the **FTR** to which the payment relates is due to be settled.
- (7) If the price disclosed in the notification is more than the **FTR acquisition cost ~~payment~~** in respect of the **FTR** that would, if the assignment had not taken place, become due on settlement of the **FTR**, the assignor becomes entitled to be paid by the **clearing manager** on settlement of the **FTR** an amount equal to the difference between the price at which the FTR has been assigned and the **FTR acquisition cost ~~payment~~** ~~and the price at which the FTR has been assigned~~.

**13.250 Liability for FTR acquisition cost ~~payments~~ when FTR assigned and price not disclosed**

- (1) This clause applies if—

- (a) an **FTR** is assigned under clause 13.248; and
  - (b) the notification of assignment does not disclose the price at which the **FTR** has been assigned.
- (2) The **FTR manager** must provide a copy of the notification of assignment to the **clearing manager**.
- (3) The assignee becomes liable to pay the **FTR acquisition cost** ~~payment~~ in respect of the **FTR** that has been assigned when it becomes due on settlement of the **FTR**.

...

### **13.252 Information to be provided to clearing manager**

- (1) The **FTR manager** must provide the following information to the **clearing manager** in relation to each successful bidder in an **FTR auction**:
  - (a) the details of each **FTR** allocated under an **FTR auction**, including—
    - (i) the period to which the **FTR** applies; and
    - (ii) whether the **FTR** is an **option FTR** or an **obligation FTR**; and
    - (iii) the formula under which the **FTR hedge value** ~~amount payable or to be paid~~ is to be calculated for the settlement of the **FTR**:
  - (b) ~~the **FTR acquisition cost** in respect of each **FTR**. the price at which each **FTR** has been allocated.~~
- (2) The **FTR manager** must provide the information specified in subclause (1) to the **clearing manager** as soon as practicable and no later than 1 week after each **FTR auction**.

## Amendments to Part 14

### 14.19 Determination of security level

The **clearing manager** must determine the minimum level of security required from a **payer** by assessing the expected amount of the **clearing manager's** financial exposure to that **payer** based on the sum of the following amounts:

- (a) the **clearing manager's** estimate of the amount (including **GST**) incurred, and to be incurred, by that **payer** in purchasing **electricity**;
- (b) the **clearing manager's** estimate of the amount (including **GST**) allocated, and to be allocated, to that **payer** in relation to **ancillary services**;
- (c) the **clearing manager's** estimate of the amount (including **GST**) earned, and to be earned, by that **payer** on account of gross revenue from sales of **electricity**;
- (d) the **clearing manager's** estimate of the amount (including **GST**) incurred or earned, and to be incurred or earned, by that **payer** in respect of any **hedge settlement agreement** lodged with the **clearing manager** under clause 14.5(e);
- (da) the **clearing manager's** estimate of an amount to be required by that **payer** in respect of any **FTR** in respect of which the **payer** is named in the **FTR register**, calculated in accordance with the methodology approved by the **Authority** under clause 14.19B—

during the complete **billing period** that precedes the next date on which invoices are due for payment under clause 14.37(1) (“the next invoice payment date”), the period from the end of that **billing period** up to and including the next invoice payment date and the 7 days following the next invoice payment date:

- (db) the amount of any **FTR** acquisition cost ~~payment~~ due in respect of an **FTR**;
- (dc) the amount payable by that payer to the clearing manager under clause 13.249(4) minus any amount payable by the clearing manager to that payer under clause 13.249(7);
- (e) any amount that the **system operator** advises the **clearing manager** that a **payer** has incurred as a result of that **payer** causing an **under-frequency event**, where the **payer** has not yet paid that liability.

### 14.19A Methodology for determining minimum level of security required in respect of FTRs

- (1) The **clearing manager** must formulate and **publish** a methodology for determining the minimum level of security required from a **payer** in relation to a matter set out in



clause 14.19(da).

- (2) The methodology formulated by the **clearing manager** under subclause (1) must comply with the principle that the amount taken into account under clause 14.19(da) is an estimate of the FTR hedge value ~~value~~ (being an amount that may be positive or negative) of the **FTR** at the time that the estimate is made and the potential for that value to change prior to settlement.

...

#### *Invoices to and payments by payers*

##### **14.36 Issue of invoices**

- (1) **2 business days** after the **clearing manager** receives **reconciliation information** in respect of the prior **billing period** from the **reconciliation manager** in accordance with clause 28(c) of Schedule 15.4, the **clearing manager** must issue to each **purchaser** an invoice in respect of the **trading period** of the **billing period** to which the **reconciliation information** applies.
- (2) At the same time as the **clearing manager** issues invoices under subclause (1), the **clearing manager** must issue an invoice to each person to whom **ancillary service** costs have been allocated.
- (3) At the same time as the **clearing manager** issues invoices under subclause (1), ~~or, if publication of final prices is delayed under clause 13.184 for any trading period in the billing period, 2 business days after the relevant final prices are published,~~ the **clearing manager** must issue an invoice in respect of ~~the settlement of any amount owing under an FTR and any FTR payment~~ any amount due in respect of an **FTR**.

##### **14.37 Payment of invoices**

- (1) Subject to clause 14.39, for each **billing period**, payment of an invoice issued in accordance with clauses 14.36, 14.40, and 14.64(8) must be made by each **payer** in **cleared funds** into the **operating account** by 1400 hours on the 20th calendar day of the month following the **billing period** in respect of which the invoice was issued. If that day is not a **business day**, payment must be made by 1400 hours on the next **business day**. If the **clearing manager** does not issue an invoice within **2 business days** of receiving **reconciliation information** from the **reconciliation manager**, or the invoice is delayed for any other reason, payment may, if the **payer** so elects, be delayed for a period corresponding to the period of delay in the issue of the

invoice. In the case of a late invoice, the **clearing manager** must notify the **payer** of the new payment date.

- (2) The allocation by the **clearing manager** of a payment received from a **payer** in respect of an invoice must be dealt with in accordance with subclause (3), and clauses 14.47 and 14.47A. A **payer** may not direct the **clearing manager** to apply any funds paid in respect of an invoice other than in accordance with clauses 14.47 and 14.47A.
- (3) The **clearing manager** must transfer to the **FTR account**—
- ~~(a) any amount received under subclause (1) in respect of an amount referred to in clause 14.40(fa) and (fb), the settlement of any amount owing under an FTR; and~~
  - ~~(b) any amount to pay under clause 14.45(ga) in respect of the settlement of any amount owing under an FTR; and~~
  - ~~(c) any FTR payment due in respect of an FTR.~~

#### 14.38 Failure to pay invoice amount

Failure of a **payer** to pay an invoice in accordance with clause 14.37 constitutes an **event of default**.

#### 14.39 If money is owed to payer then deemed to be payee

If a **payer** is issued with an invoice by the **clearing manager**, and the total sum of the items specified in the invoice is a credit so that the **clearing manager** is obliged to pay that total sum to the **payer**, the **payer** must, for the purpose of clauses 14.36 to 14.54 only, be deemed to be, in relation to that invoice, a **payee**. Clauses 14.36 to 14.54 therefore, apply to the **payer** as if it were a **payee** for the purposes of issue and payment of the invoice.

#### 14.40 Content of invoice

Invoices issued to **payers** in accordance with clause 14.36 must specify the following as is relevant to the extent that the **clearing manager** has received the necessary information:

- (a) payment under the contracts formed in accordance with clauses 14.30 to 14.35 as determined by the following formula:

$$Q_f * P_f$$

where

$Q_f$  is the final quantity of **electricity** purchased at the relevant **grid exit point** obtained from **reconciliation information** for a **trading period** of the **billing period**

$P_f$  is the **final price** at that **grid exit point** for that **trading period** of the **billing period**:

- (b) the amount to be debited for **constrained on**

- compensation** calculated in accordance with clause 13.212(7):
- (c) the sum of the **washup** amount and any interest payable on that amount to be credited or debited in accordance with clauses 14.65 to 14.72 as a result of the **clearing manager** receiving corrected information in accordance with clauses 8.68, 8.69, 14.64(13) or (14), 15.26(4), 15.29, or clause 28 of Schedule 15.4:
  - (d) the **auction revenue** calculated in accordance with clause 13.112(1):
  - (e) the amount of any **costs** to pay or be paid for any **ancillary services** under clauses 8.6, 8.31(1)(a), and 8.68:
  - (f) the amount to pay, or to be paid, as a result of settlement for that **billing period** of any **hedge settlement agreements** lodged with the **clearing manager**:
  - (fa) for each **FTR** applying to that **billing period** in respect of which the **payer** is registered as the holder of the **FTR**, the net amount of the **FTR acquisition cost** for the **FTR** minus the **FTR hedge value** for the **FTR**, if that net amount is positive:  
~~the net amount to pay, or to be paid, for that **billing period** in respect of—~~
    - ~~(i) the settlement of every **FTR** in respect of which the **payer** is registered as the holder of the **FTR**; and~~
    - ~~(ii) every **FTR payment** that has become due:~~
  - (fb) any amount payable to the **clearing manager** under clause 13.249(4):
  - (g) the amount to pay, or to be paid, for fees and taxes under clause 14.11:
  - (h) the amount of **GST** payable (**GST** will be charged on each supply made under this Code):
  - (i) the total sum of the amounts referred to in paragraphs (a) to (h).

#### 14.41 Procedure for invoice distribution

The **clearing manager** must comply with the following procedure when issuing invoices under clauses 14.36 and 14.44. Proof of dispatch by the electronic facility contained in the **information system** for this purpose or facsimile is deemed to be proof of the issue of the invoice, despite the procedures set out in this clause and in clause 14.42(1) and (2). The **clearing manager** must—

- (a) post the invoice to each **payer** through the electronic facility contained in the **information system** for this purpose; or
- (b) if the electronic facility, referred to in paragraph (a), is not available, transmit the invoice to the **payer** by facsimile; and

- (c) in either case, if the **payer** requests, post or hand deliver the original invoice to the **payer**.

#### **14.42 Payer to confirm receipt**

- (1) Each **payer** must immediately confirm, through either the electronic facility contained in the **information system** for this purpose or by facsimile, receipt of any invoice sent by the **clearing manager** under clause 14.41(a) or (b).
- (2) If the **clearing manager** has not received a confirmation that an invoice has been received by a **payer** by 1200 hours on the **business day** after the day of dispatch of the invoice, the **clearing manager** must telephone the **payer** to check if the invoice has been received. If the invoice has not been received by the **payer**, the **clearing manager** must resend the invoice.
- (3) Delayed confirmation by a **payer** that an invoice has been received does not extend the payment period for that invoice set out in clause 14.37.

#### **14.43 Clearing manager must establish operating account**

- (1) The **clearing manager** must establish, in its name, an **operating account** with a **bank**. The **operating account** must be held by the **clearing manager** as a trust account for the benefit of the persons referred to in clause 14.47, must be clearly identified as such and, subject to this Code, be entirely separate from the **cash deposit accounts** and any other account of the **clearing manager**. Subject to this Code, payments from the **operating account** may only be made in accordance with clause 14.48.
- (2) The **clearing manager** must obtain an acknowledgement from the **bank** with which the **operating account** is held that the funds in that account are held on trust for the purposes set out in clause 14.47 and that the **bank** has no right of set-off or combination in relation to the funds.

#### **14.43A Clearing manager must establish FTR account**

- (1) The **clearing manager** must establish, in its name, an **FTR account** with a **bank**.
- (2) The **FTR account** must—
  - (a) be held by the **clearing manager** as a trust account for the benefit of the persons who are entitled to any payment from the **FTR account**; and
  - (b) be clearly identified as such; and
  - (c) subject to this Code, be entirely separate from the **cash deposit accounts** and any other account of the **clearing manager**.
- (3) Subject to this Code, the **clearing manager** may only make payments from the **FTR account** in accordance with clause 14.48A.
- (4) The **clearing manager** must obtain an acknowledgement

from the **bank** with which the **FTR account** is held that—

- (a) the funds in that account are held on trust for the purposes set out in clause 14.47A; and
- (b) the **bank** has no right of set-off or combination in relation to the funds.

*Payments to and from payees*

**14.44 Issue of invoices to payees**

**Payee** invoices must be issued as follows:

- (a) concurrently with issuing invoices to **payers**, the **clearing manager** must issue pro forma invoices to each **payee**. Each such pro forma invoice must detail the amount that the **clearing manager** must pay in respect of a **billing period** upon receiving payment from the **payers**, subject to clause 14.47 and clause 14.47A and the issue of an actual **GST** invoice for the amount payable to that **payee**. **Payees** must not issue **GST** invoices for supplies of **electricity** or **ancillary services** or **ancillary service administrative costs** to the **clearing manager**:
- (b) if the **clearing manager** issues a pro forma invoice to a **payee** and the total sum of the items specified in that pro forma invoice is such that the **payee** is obliged to pay the **clearing manager**, the **payee** is deemed to have been issued with an invoice, and the **payee** is deemed to be, in relation to that invoice, a **payer**. Clauses 14.36 to 14.54 apply to the **payee** as if it were a **payer** for the purposes of issue and payment of the invoice.

**14.45 Content of pro forma invoice**

Pro forma invoices issued to **payees** in accordance with clause 14.44 must specify such of the following as is relevant to the extent that the **clearing manager** has received the necessary information:

- (a) payment for the contracts formed in accordance with clauses 14.30 to 14.35 as determined by the following formula:

$$Q_f * P_f$$

where

$Q_f$  is the final quantity of **electricity** sold at the relevant **grid injection point** obtained from **reconciliation information** for a **trading period** of the **billing period**

$P_f$  is the **final price** at that **grid injection point** for that **trading period** of the **billing period**:

- (b) **constrained on compensation** being **constrained on amounts** calculated in accordance with clause 13.204 less any **constrained on amounts** calculated in accordance with clause 13.205:
- (c) the sum of the **washup** amount and any interest payable on that amount to be credited or debited in accordance with clauses 14.65 to 14.72 as a result of the **clearing manager** receiving corrected information in accordance with clauses 8.68, 8.69, 14.64(13) or (14), 15.26(4), 15.29, or clause 28 of Schedule 15.4.
- (d) the sum calculated in accordance with clause 13.110(1):
- (e) the amount to pay, or to be paid, to **ancillary service agents** in relation to **ancillary services** under clause 8.55(a):
- (f) the amount to pay, or to be paid, to the **system operator** for **ancillary services administrative costs** under clause 8.55(b):
- (g) the amount to pay, or be paid, as a result of the settlement for that **billing period** of any **hedge settlement agreements** lodged with the **clearing manager**:
- (ga) for each **FTR** applying to that **billing period** in respect of which the **payee** is registered as the holder of the **FTR**, the net amount of the **FTR hedge value** minus the **FTR acquisition cost** for the **FTR**, if that net amount is positive:
  - ~~the net amount to pay, or to be paid, for that **billing period** in respect of—~~
  - ~~(i) the settlement of every **FTR** in respect of which the **payee** is registered as the holder; and~~
  - ~~(ii) every **FTR payment** that has become due;~~
- (gb) any amount payable by the **clearing manager** under clause 13.249(7):
- (h) the amount of **GST** payable (**GST** will be charged on each supply made under to this Code):
- (i) the total sum of the amounts referred to in paragraphs (a) to (h).

#### **14.46 Clearing manager to make payments**

- (1) The **clearing manager** must pay each **payee** the amount invoiced to the **payee** in accordance with clause 14.44.
- (2) The **clearing manager** must pay each **payee** in **cleared funds**.
- (3) The **clearing manager** must pay the amount by 1630 hours on the final **business day** for payment under clause 14.37.
- (4) Subclause (1) applies subject to clauses 14.47, ~~14.47A,~~ 14.48C, and 14.49.

#### **14.47 Clearing manager to prioritise payment of funds**

The **clearing manager** must hold each amount paid into the

**operating account** by or on behalf of a **payer** in payment or part payment of an invoice rendered under clauses 14.36 or 14.44 (excluding any amount referred to in clause 14.40(fa) and (fb)~~any amount in respect of an FTR or an FTR payment~~) upon trust for those persons who are entitled to receive payment from the **clearing manager**, in relation to that invoice and as identified or referred to in paragraphs (a) to (d), and must make such payments in the following order of priorities:

- (a) to satisfy any liability to pay **GST** and other governmental charges or levies, that are payable by the **clearing manager** in respect of the invoices issued under clauses 14.36, 14.44, 14.69(b), 14.70(b), or 14.71(b), taking into account any **GST** input tax credits available to the **clearing manager** in respect of payments to the **system operator** for **ancillary services** under paragraph (b), payment of the **loss and constraint excess** under paragraph (c) and payments to **generators** under paragraph (d):
- (b) to satisfy any amounts due to the **system operator** for **ancillary services** under clauses 8.6, 8.31(1)(a), and 8.55 to 8.67, as set out in the invoice:
- (c) to satisfy any amounts due to each **grid owner** for **loss and constraint excesses** in accordance with clause 14.73. The **clearing manager** may rely on information provided by the **Authority** to determine what payments are required to be made under this clause:
- (d) to satisfy any amounts due to **generators** determined under clause 14.45, excluding any amounts specified for **ancillary services** in accordance with clause 14.45(e)—

and the balance, if any, consisting of interest payments on the amounts deposited in the **operating account**, must be paid to those persons listed in this clause in proportion to the amounts held on trust in respect of each such person in that account in respect of the previous **billing period**.

#### **14.47A Payments in respect of FTRs**

- (1) The **clearing manager** must calculate the total amount payable by the **clearing manager** in respect of **FTRs** in respect of the current **billing period**.
- (2) The **clearing manager** must **publish** the amount payable by a person or to a person per **MW** in respect of **FTRs** in respect of the current **billing period**.
- (3) The **clearing manager** must pay any amount payable in respect of **FTRs** in respect of the current **billing period** from the **FTR account**, in accordance with the terms of the **FTR**.
- (4) Subclause (5) applies if, in respect of a **billing period**, the total amount to be invoiced by the **clearing manager** under clause 14.45(ga) and (gb) exceeds the sum of the following

amounts:

- (a) the total amount to be invoiced by the **clearing manager** under clause 14.40(fa):
  - (b) any amount available under clause 13.249(6) for the settlement of **FTRs** in the **billing period**:
  - (c) the amount of the **loss and constraint excess** to be paid into the **FTR account** under clause 14.73(2C) or (2D).
- (5) The **clearing manager** must, in calculating the amount included on an invoice in respect of each **FTR** under clause 14.40(fa) and 14.45(ga), use an amended **FTR hedge value** scaled according to the following formula:

$$\underline{\hspace{1cm}} A = B \times (C/D)$$

where

A is the scaled **FTR hedge value**

B is the original **FTR hedge value** that would be invoiced if this subclause did not apply

C is the amount calculated in accordance with the formula in subclause (6)

D is the amount calculated in accordance with the formula in subclause (7)

- (6) The value for C in the formula in subclause (5) is as follows:

$$\underline{\hspace{1cm}} C = E + F + G - H - I$$

where

E is the amount of the **loss and constraint excess** to be paid into the **FTR account** under clause 14.73(2C) or (2D)

F is the sum of any **FTR acquisition costs** payable to the **clearing manager**

G is the sum of any amounts payable to the **clearing manager** under clause 13.249(4)

H is the sum of any **FTR acquisition costs** payable by the **clearing manager**

I is the sum of any amounts payable by the **clearing manager** under clause 13.249(7)

- (7) The value for D in the formula in subclause (5) is as follows:



$$D = J - K$$

where

J is the sum of any **FTR hedge values** payable by the clearing manager

K is the sum of any **FTR hedge values** payable to the clearing manager

~~(4) If the total amount required to be paid by the clearing manager in respect of FTRs in respect of the billing period exceeds the amount of all funds in the FTR account available for the settlement of FTRs in the relevant billing period, the clearing manager must amend each amount payable to a person in respect of each FTR for that billing period so that the amount payable is calculated according to the following formula:~~

$$A = B \times (C/D)$$

~~where~~

~~A is the amount payable under each FTR~~

~~B is the amount owing under the FTR minus the amount of the FTR payment owing under the FTR~~

~~C is the total amount available to make payments under subclause (3)~~

~~D is the total amount required to settle FTRs in respect of the billing period~~

~~(5) Subclause (4) does not apply to an FTR in respect of which the holder of the FTR is required to pay an amount to the clearing manager.~~

#### **14.48 Payment from operating account**

Subject to clause 14.46, all payments required to be made by the **clearing manager** from the **operating account** to the persons entitled to the payments must be made by direct payment to the **bank** accounts that the persons entitled to the payments may notify the **clearing manager** in writing from time to time. Except as expressly permitted by this Code or as required by law, the payments must be free and clear of any withholding or deduction and without any set-off or counter claim.

#### 14.48A Payment from FTR account

- (1) Subject to clause 14.46, each payment required to be made by the **clearing manager** from the **FTR account** to the person entitled to the payment must be made by direct payment to the **bank** account that the person entitled to the payment may advise the **clearing manager** in writing from time to time.
- (2) Except as expressly permitted by this Code or as required by law, all payments from the **FTR account** must be free and clear of any withholding or deduction and without any set-off or counter claim.

#### 14.48B Allocation of funds to FTR account

- (1) This clause applies if—
  - (a) a **payer** pays an amount in respect of an invoice that is less than the amount of the invoice; and
  - (b) the amount of the invoice includes an amount payable referred to in clause 14.40(fa) or (fb) ~~in respect of an FTR.~~
- (2) The **clearing manager** must apportion the amount to be transferred to the **FTR account** and the amount in respect of other amounts invoiced according to the proportion that each amount bears to the total amount invoiced.

#### 14.48C Inadequate funds in respect of FTRs

- (1) Subclause (2) applies if, in respect of a **billing period**, a **payer** fails to pay an amount invoiced in respect of an **FTR** and, as a result, the total amount required to be paid by the **clearing manager** in respect of **FTRs** and any amount to be paid under clause 14.73(4)(b) exceeds the amount of all funds in the **FTR account** available for the settlement of **FTRs** in the relevant **billing period**.
- (2) The **clearing manager** must adjust each amount payable to a person in respect of an **FTR**, and any amount payable to a **grid owner** under clause 14.73(4)(b), according to the following formula:

$$A = B \times (C/D)$$

where

A is the amount payable in respect of the **FTR**, or amount payable to a **grid owner** under clause 14.73(4)(b)

B is the amount specified in a pro forma invoice issued under clause 14.44 as being payable to the **payee** in respect of that **billing period** in respect of an amount specified in clause 14.45(ga) or (gb), or amount calculated as being payable to a **grid owner** under clause

14.73(4)(b)

C is the total amount in the FTR account available to make payments to payees in respect of FTRs and to grid owners under clause 14.73(4)(b)

D is the sum of all amounts required to settle FTRs in respect of the billing period, and all amounts calculated as being payable to each grid owner under clause 14.73(4)(b)

**14.49 Inadequate funds reduces amounts paid to generators**

If, in respect of any **billing period**, a **payer** fails to pay the total amount invoiced by the **clearing manager** (excluding any amount referred to in clause 14.40(fa) or (fb) ~~excluding any amount in respect of an FTR or an FTR payment~~),—

- (a) payment to each **generator** must be calculated according to the following formula:

$$\text{InvG} * (\text{RecP} / \text{TotInvG})$$

where

**InvG** is the amount specified in a pro forma invoice issued under clause 14.44(a) as being payable to the **generator** in respect of that **billing period**, excluding any amount specified for **ancillary services** in accordance with clause 14.45(e) or **ancillary service administrative costs** in accordance with clause 14.45(f)

**RecP** is the total amount actually received by the **clearing manager** from **payers** for that **billing period**, excluding all payments that have been made by the **clearing manager** in accordance with clause 14.47(a) to (c)

**TotInvG** is the sum of all amounts determined under clause 14.44(a) as being payable to all **generators** in respect of that **billing period**, excluding any amounts specified for **ancillary services** in accordance with clause 14.45(e) or **ancillary service administrative costs** in accordance with clause 14.45(f); and

- (b) if a payment is calculated under paragraph (a) as a result of a **payer** failing to pay the total amount invoiced by the **clearing manager**, the amount payable to each **generator** must be adjusted by reducing payments for items contained in the pro

forma invoice issued under clause 14.45 using the following order of priorities:

- (i) by reducing any payment for the sale of **electricity** determined in accordance with clause 14.45(a):
- (ii) by reducing **constrained on compensation** determined in accordance with clause 14.45(b):
- (iii) by reducing any **washup** amounts, if the total amount is payable to the **generator**, determined in accordance with clause 14.45(c):
- (iv) by reducing a **hedge settlement agreement** amount, if the total amount is payable to the **generator**, determined in accordance with clause 14.45(g).

#### **14.50 Interest is payable to generators**

- (1) Subject to clause 14.53, if a **generator** does not receive the full amount specified in a pro forma invoice issued under clause 14.44(a), the **clearing manager** is liable to pay interest on the unpaid amount. The interest must be calculated daily from the date payment would otherwise have been due, at the **default interest rate**, until the date that payment is actually made by the **clearing manager** to the **generator** and compounded at the end of each calendar month.
- (2) If a **payer** has not paid any amount due in respect of an invoice after the due date for payment, interest must be payable on the unpaid amount. The interest must be calculated daily from the date on which the payment was due, at the **default interest rate**, until the date that full payment is received in **cleared funds** and compounded at the end of each calendar month.

#### **14.51 Further funds paid according to priority**

- (1) As further funds constituting late payments in respect of any **billing period** are received by the **clearing manager** (excluding any amount referred to in clause 14.40(fa) or (fb) ~~in respect of an FTR or an FTR payment~~), those funds must be paid in accordance with the priorities set out in clause 14.47.
- (2) If funds received by the **clearing manager** are identifiable as relating to a specific **billing period**, then the **clearing manager** must apply those funds in satisfaction or part satisfaction of amounts payable by the **clearing manager** in respect of that **billing period**. However, if it is not clear to which **billing period** the funds relate, the funds must be applied in satisfaction or part satisfaction of amounts payable by the **clearing manager** in respect of the earliest **billing period** in respect of which amounts are outstanding to the extent that full payment has not been received by the relevant **payees** in relation to the relevant invoice.

#### 14.51A Late payments in respect of FTRs

- (1) As further funds constituting late payments (including any interest payable under clause 14.50(2)) in respect of any **billing period** are received by the **clearing manager** in respect of an amount referred to in clause 14.40(fa) or (fb) ~~FTRs or FTR payments~~, the **clearing manager** must pay those funds into the **FTR account**.
- (2) The **clearing manager** must apply late payments received under subclause (1) in satisfaction or part satisfaction of amounts payable (including interest calculated on the same basis as set out in clause 14.50(2) if interest is paid under that subclause) by the **clearing manager** under clause 14.47A in respect of the **billing period** in which the late payments were owed by paying the parties who have received scaled payments under clause 14.48C in proportion to the amounts paid-owed to each party.

#### 14.52 Payer to remain in default

Despite anything else in this Code, the application of money under clauses 14.46 to 14.49 and 14.51 (provided that a **payer** has still not paid the full amount invoiced and any interest due on that amount) does not—

- (a) satisfy the obligation of the **payer** to pay the full amount invoiced together with the interest due on that amount to the **clearing manager** or to the **generators** acting in accordance with clause 14.54; or
- (b) prejudice any remedies available to the **clearing manager** in an **event of default** or to the **generators** under clause 14.54.

#### 14.53 Clearing manager to exercise rights to recover amounts outstanding

The **clearing manager** must exercise such rights, including those rights under the **Act** and this Code, as is reasonable to recover any amounts outstanding from a **payer** in default.

#### 14.54 Generators assigned or subrogated to all clearing manager's rights of recovery

If a **payer's** default means that the **clearing manager** is unable to pay **generators** the full outstanding amount that would otherwise be payable to them so that any amount paid to **generators** is reduced under clause 14.49, the **generators** are entitled to be assigned or subrogated to the rights of the **clearing manager** in respect of amounts payable to the **clearing manager** by the relevant defaulting **payer** which, if paid, would have been required to be held on trust by the **clearing manager** for the **generators** in accordance with this Code. The **clearing manager** must do all that is reasonably necessary, including the granting of a power of attorney in favour of the **generators**, to assist the **generators** in the exercise of the rights. The **generators** may then—

- (a) in the name of the **clearing manager** (if requested), take any step to enforce repayment or exercise any other rights of the **clearing manager** in respect of money for the time being due to the **clearing manager** from a **payer** in default or a guarantor of any **payer** or any person that has provided a letter of credit or bond in favour of the **clearing manager** in respect the **payer**; and
- (b) directly or indirectly, in the name of the **clearing manager** (if requested), prove in, claim, share in or receive the benefit of any distribution, dividend or payment arising out of any insolvency of a **payer** in default or a guarantor of a **payer** in default or any person that has provided a letter of credit or bond in favour of the **clearing manager** in respect of a **payer** in default.

### *Default*

#### **14.55 Definition of an event of default**

Each of the following events constitutes an **event of default**:

- (a) the failure of a **payer** to comply with clauses 14.2 to 14.17 or to satisfy a **call** in accordance with clause 14.18(4):
- (b) the failure of a **payer** to pay the full amount invoiced to it in accordance with clauses 14.36 to 14.54:
- (c) any action taken for, or with a view to, the declaration of a **payer** as a corporation at risk under the Corporations (Investigation and Management) Act 1989:
- (d) a statutory manager being appointed under the Corporations (Investigation and Management) Act 1989 (or a recommendation or submission is made by a person to the Securities Commission supporting such an appointment):
- (e) a person being appointed under section 19 of the Corporations (Investigation and Management) Act 1989 to investigate the affairs or run the **business** of the **payer**:
- (f) if a **payer** is (or admits that it is or is deemed under any applicable law to be) unable to pay its debts as they fall due or is otherwise insolvent, or stops or suspends, or threatens to stop or suspend, or a moratorium is declared on, payment of its indebtedness, or makes or commences negotiations or takes any other steps with a view to making any assignment or composition with, or for the benefit of, its creditors, or any other arrangement for the rescheduling of its indebtedness or otherwise with a view to avoiding, or in expectation of its inability to

- pay, its debts:
- (g) a holder of a security interest or other encumbrancer takes possession of, or a receiver, manager, receiver and manager, liquidator, provisional liquidator, trustee, statutory or official manager or inspector, administrator or similar officer is appointed in respect of the whole or any part of the assets of the **payer** or if the **payer** requests that such an appointment be made.

#### **14.56 Anticipated events of default must be referred to Authority**

If the **clearing manager** has reasonable grounds to believe that an **event of default** is likely to occur, the **clearing manager** must refer the matter to the **Authority** for its urgent consideration and instruction of an appropriate course of action to minimise the risk of default occurring.

#### **14.57 Procedure upon event of default**

- (1) Upon an **event of default** occurring, the **clearing manager** must, without prejudice to its rights under clause 14.58, notify the person in default that it has committed an **event of default**.
- (2) Without prejudice to its rights under clause 14.58, the **clearing manager** must refer an issue concerning an **event of default** to the **Authority**.

#### **14.58 Event of default gives clearing manager certain remedies**

- (1) If an **event of default** has occurred, the **clearing manager** has the power to exercise, as appropriate, all or any of the following remedies without prejudice to any other remedy it may have at law:
  - (a) apply the balance of the **cash deposit** of the defaulting **payer** in accordance with clauses 14.9(a), 14.9(aa), and 14.47. In such a case, the **clearing manager** must give notice to the **payer**, and the **payer** must comply with the notice, requiring the **payer** to reinstate the **cash deposit** to at least the level of the **cash deposit** before the application of the **cash deposit** was made in accordance with the following procedure:
    - (i) if notice is given before 1200 hours on a **business day**, the **payer** must reinstate the **cash deposit** no later than 1600 hours on that same **business day**:
    - (ii) if notice is given between 1200 hours and 1700 hours on a **business day**, the **payer** must make reinstatement of the **cash deposit** no later than 1200 hours on the next **business day** following the notice:
  - (b) a demand may be made by the **clearing manager** under a guarantee, letter of credit or bond provided under this Part in respect of the **payer**, and the

**clearing manager** must pay any amounts received as a consequence of the demand into the **operating account**. In such a case, the **payer** must procure the reinstatement of the guarantee, letter of credit or bond to at least the level of that guarantee, letter of credit or bond before the demand was made in accordance with the following procedures:

- (i) if a demand is made before 1200 hours on a **business day**, reinstatement of the level of the security must be procured by the **purchaser** no later than 1600 hours on that same **business day**;
- (ii) if a demand is made between 1200 hours and 1700 hours on a **business day**, reinstatement of the level of security must be procured by the **payer** no later than 1200 hours on the next **business day** following the demand;
- (c) if a **generator** has not paid an amount due in respect of an invoice by the due date for payment (whether the amount became owing in its capacity as a **generator** or otherwise), the **clearing manager** may set-off the unpaid amount against any amount payable by the **clearing manager** to the **generator**. The amount payable by the generator to the **clearing manager** in respect of the invoiced amounts must be reduced by the amount set-off in accordance with this paragraph;
- (d) if any other **payer** has not paid an amount due in respect of an invoice by the due date for payment (whether the amount became owing in its capacity as a **purchaser, distributor or grid owner** or otherwise), the **clearing manager** may set-off any amount payable by the **clearing manager** (whether the amount became payable to the **payer** in its capacity as a **purchaser, distributor, grid owner** or otherwise) to the **payer** against the unpaid amount payable by the **payer** to the **clearing manager** in accordance with clauses 14.39 or 14.40;
- (e) take possession of any **FTRs** held by the defaulting **payer** in accordance with subclauses (2) and (3).
- (2) The **clearing manager** on application to the **FTR manager** is entitled to be registered on the **FTR register** as the holder of any **FTR** that the **clearing manager** takes possession of under subclause (1)(e) without any further authorisation than this subclause.
- (3) If the **FTR hedge values** ~~value~~ or estimated **FTR hedge values** of the **FTRs** held by the defaulting **payer** exceeds the amount required to remedy the **event of default**, the **clearing manager** may exercise its discretion in deciding which **FTRs** are transferred to the **clearing manager**.
- (4) If the amount received by the **clearing manager** on settlement or sale of an **FTR** taken possession of under



subclause (1)(e) exceeds the amount required to remedy the **event of default**, the **clearing manager** must repay the excess amount to the defaulting **payer**.

- (5) If the **clearing manager** holds an **FTR** in respect of which an amount would be payable if the **FTR** was held by another person, no amount is payable by the **clearing manager**.

#### **14.59 Pro rata call on security**

If the **clearing manager** exercises any of the remedies under clause 14.58(1)(a) or (b) against a **payer**, and the **payer** has procured the provision of a combination of securities to meet any prudential requirements in this Part, the **clearing manager** must, for a period of 7 days from the time the **event of default** occurred, exercise its remedies against each of any **cash deposits**, guarantees, letters of credit or bonds provided by or on behalf of that **payer** on a pro rata basis in accordance with the following formula:

$$\frac{SA}{TS} \times DA = \$ML$$

where

SA is the total amount of any **cash deposits** provided by or for the **payer** or the maximum liability of any person under a guarantee, letter of credit or bond provided in respect of the **payer**

TS is the total amount of all **cash deposits**, guarantees, letters of credit and bonds provided by or in respect of the **payer**

DA is the amount required to be paid to remedy the **payer's event of default**

\$ML is the maximum amount that can be utilised or claimed against that security during the first 7 days after the **event of default** occurs.

#### **14.60 Clearing manager to specify pro rata proportion**

Upon application of any part of a **cash deposit** under clause 14.58(1)(a), and in any demand made under clause 14.58(1)(b), the **clearing manager** must specify in writing to the providers of the relevant security the total amount required from the **payer** to remedy the **event of default** (the "default amount") and the pro rata proportion of any **cash deposit** applied under clause 14.58(1)(a) or the pro rata proportion of the default amount demanded under clause 14.58(1)(b), as appropriate.

#### **14.61 Pro rata application or demand limited to 7 days**

If, after 7 days, the default amount has not been recovered by the pro rata **call** methodology in clause 14.59, the **clearing manager** may **call** all or part of any security provided by the

defaulting **payer** to meet any part of the default amount still outstanding.

#### **14.62 If security to be pro rated**

The **clearing manager** may only follow the procedures set out in clauses 14.59 to 14.61 if the **payer** against which the **clearing manager** is exercising any of the remedies under clause 14.58(1)(a) or (b), and which has procured the provision of a combination of securities, has previously notified the **clearing manager** that it wishes to have those procedures followed in respect of its combination of securities.

#### **14.62A Allocation of amounts to FTR obligations and other obligations**

- (1) If the **clearing manager** exercises any of the remedies under clause 14.58(1)(a) or (b) against a **payer**, the **clearing manager** must transfer to the **FTR account** any amounts recovered to satisfy amounts that may be due and owing by the defaulting **payer** in respect of **FTRs** in accordance with the following formula:

$$C_{\text{FTR}} = C_{\text{TOT}} \times (O_{\text{FTR}}/O_{\text{TOT}})$$

where

$C_{\text{FTR}}$  is the amount that must be transferred to the **FTR account**

$C_{\text{TOT}}$  is the total amount recovered under clause 14.58(1)(a) and (b)

$O_{\text{FTR}}$  is the amount owing in respect of **FTRs** held by the defaulting **payer**

$O_{\text{TOT}}$  is the total amount owing by the defaulting **payer** under this Code

- (2) The **clearing manager** must apply any amounts recovered under subclause (1) that have not been transferred in accordance with subclause (1) to satisfy any amounts that may be due and owing by the defaulting **payer** to the **clearing manager** under this Code.

#### **14.63 Rights of generators to exercise rights**

- (1) Any 1 or more of the **generators** is entitled to exercise its rights under clause 14.54, if—
- (a) the **clearing manager** has not, within 3 **business days** of receiving notice of, or otherwise becoming aware of, the occurrence of an **event of default**, taken any action under clause 14.58; or

- (b) the **clearing manager** has failed within 2 months of an **event of default** to collect all amounts (other than an amount referred to in clause 14.40(fa) or (fb)~~other than an amount in respect of the settlement of an FTR or an FTR payment~~) due from the defaulting payer.

then any 1 or more of the **generators** is entitled to exercise its rights under clause 14.54.

- (2) Nothing in subclause (1) or clauses 14.55 to 14.62 limits the statutory right of the **clearing manager** to apply to the Court for the appointment of a receiver, interim liquidator or liquidator.

...

#### **14.73 Payment of loss and constraint excess**

- (1) On the final day for payment under clause 14.37, and when the **clearing manager** has received notification from its **bank** that the **generators** and **purchasers** have deposited **cleared funds** in the **operating account**, the **clearing manager** must, subject to clause 14.47, pay the appropriate **loss and constraint excess** and **residual loss and constraint excess** to each **grid owner** in accordance with subclause (3) and subclause (4).
- (2) A **loss and constraint excess** accrues for a **billing period** when the total amounts to be paid by the **clearing manager** to the **generators** for that **billing period** for the contracts formed in accordance with clause 14.30 differ from the total amounts to be paid to the **clearing manager** by the **purchasers** for that **billing period** for the contracts formed in accordance with clause 14.33.
- (2A) The **FTR manager** must—
  - (a) determine the amount of **loss and constraint excess** that must be retained by the **clearing manager** and paid into the **FTR account** in accordance with Schedule 14.6; and
  - (b) advise the **clearing manager** of that amount no later than 1600 hours on the 7<sup>th</sup> **business day** of the month following the relevant **billing period**.
- (2B) The **system operator** and **pricing manager** must provide information to the **FTR manager** in accordance with Schedule 14.6.
- (2C) The **clearing manager** must retain the amount advised under subclause (2A) and pay the amount into the **FTR account**.
- (2D) If the amount that the **FTR manager** advises the **clearing manager** under subclause (2A) exceeds the amount of the **loss and constraint excess** for the **billing period**, the **clearing manager** must retain all of the **loss and constraint excess** and pay all of the **loss and constraint excess** into the **FTR account**.

- (3) The **Authority** must advise the **clearing manager** of the proportion of the **loss and constraint excess** and **residual loss and constraint excess** each **grid owner** is to be paid.
- (4) Unless the **Authority** has directed otherwise under this clause, the **clearing manager** must pay to each **grid owner** in the proportions advised under subclause (3)—
  - (a) the amount of any **loss and constraint excess** less the amount retained under subclause (2C); and
  - (b) the amount of any **residual loss and constraint excess**.
- (5) Each **grid owner** must treat **residual loss and constraint excess** paid to it under subclause (4) as **loss and constraint excess**.

## Amendments to Schedule 14.6

### 2 Interpretation

...

**simultaneously feasible**, in relation to an **FTR injection pattern**, means that the implied flows can be carried by the transmission system, subject to the **constraints** as defined by clause 5(82)

~~**unbalanced**, in relation to an **FTR injection pattern**, means that total positive **hub injections** exceed total negative **hub injections** by the amount of total losses. An **unbalanced FTR injection pattern** is consistent with a **grid** in which losses are modelled~~

...

### 5 FTR manager must determine FTR injection patterns

- (1) The **FTR manager** must determine a set of ~~un~~**balanced** extreme **FTR injection patterns**.
- (2) Each ~~un~~**balanced** extreme **FTR injection pattern** determined under subclause (1) must be **simultaneously feasible** assuming—
  - (a) the normal **grid** configuration determined under clause 4; and
  - (b) the absence of all other **grid** flows; and
  - (c) all **AC line** and **HVDC link** capacity limits applied; and
  - (d) all risk and reserve **constraints** disabled; and
  - (e) all **branch** variable losses ~~modelled set to 0~~; and
  - (f) all **branch** fixed losses set to 0.
- (3) The set of ~~un~~**balanced** extreme **FTR injection patterns** determined under subclause (1) must, in the reasonable opinion of the **FTR manager**, be the set of **FTR injection patterns** that best represents the extreme limits of the **feasible region** of **FTR injection patterns** as defined by the assumptions listed under subclause (2).
- ~~(4) The **FTR manager** must determine a set of **balanced** extreme **FTR injection patterns** that approximates the set of **unbalanced** extreme **FTR injection patterns** determined under subclause (1).~~
- ~~(5) For each **balanced** extreme **FTR injection pattern** determined under subclause (4), the implied flow on each **AC branch** under the following assumptions must be greater than or equal to the flow on that **branch** implied by the corresponding **unbalanced** extreme **FTR injection pattern** determined under subclause (1):~~
  - ~~(a) the normal **grid** configuration determined under clause 4;~~
  - ~~(b) the absence of all other **grid** flows;~~

- ~~(c) — all **branch** capacity limits disabled;~~
- ~~(d) — all **branch constraints** disabled;~~
- ~~(e) — all **mixed constraints** disabled;~~
- ~~(f) — all risk and reserve **constraints** disabled;~~
- ~~(g) — all **branch** variable and fixed **losses** set to 0.~~
- (6) The **FTR manager** must determine ~~a new set of **unbalanced extreme FTR injection patterns** and~~ a new set of **balanced extreme FTR injection patterns** if—
  - (a) the **system operator** provides the **FTR manager** with new model data under clause 4(5) that results in a change to the **feasible region** of **FTR injection patterns**; or
  - (b) there is a change to the **hubs** or set of **hubs** specified in the **FTR allocation plan**.