



New South Wales
TREASURY₁

ELECTRICITY TARIFF EQUALISATION FUND: INFORMATION PAPER

Office of Financial Management

Research &
Information Paper

Table of contents

<i>Section</i>	<i>Page</i>
1. Introduction.....	1
2. Description of the ETEF	2
2.1. Standard retail supplier payments to and from the ETEF	2
2.1.1. Calculating settlement amounts	3
2.1.2. Timetable for settlement of retailer payments.....	7
2.2. Generator payments to and from the ETEF	8
2.2.1. Calculating generator payments to the ETEF	9
2.2.2. Payments from the ETEF to generators.....	10
2.2.3. Timetable for settlement of generator payments.....	11
2.2.4. Snowy Hydro Ltd.....	11
3. Data issues	12
3.1. NEMMCO settlements: data implications.....	12
3.2. Data required from NEMMCO	13
3.3. First tier data.....	13
3.4. Metering issues.....	14
3.5. Load estimation	14
4. Transitional issues.....	16
4.1. Retailer contract position.....	16
4.2. Embedded generators	17
4.3. Generator contract position	18
5. Legislative and institutional arrangements	19
5.1. Legislative framework	19

Table of contents

<i>Section</i>	<i>Page</i>
5.2. Institutional framework	20
5.2.1. Electricity Tariff Equalisation Ministerial Corporation	20
5.2.2. Funds management and borrowing	21
5.2.3. Method of payment	22
5.2.4. Audit and monitoring	22
Annex 1: Allowance for greenhouse compliance.....	24
Annex 2: Functional Specification.....	.28

Treasury Ref: TRP 00-4
ISBN: 0 7313 3094 3

General inquiries concerning this document should be initially directed to:
Peter Shields of NSW Treasury (Tel: 9228 5815, or E-mail: peter.shields@mail.treasury.nsw.gov.au).
This publication can be accessed from the Treasury's Office of Financial Management Website
[<http://www.treasury.nsw.gov.au/>]. For printed copies contact the Publications Officer on Tel: 9228 4426.

1. Introduction

The Market Implementation Group (MIG) prepared a discussion paper in November 2000 entitled *Replacement for vesting contracts*. The paper considered options for managing retailer risks associated with purchasing wholesale electricity for small retail customers¹ who elect to take electricity under standard terms and conditions including regulated tariffs (hereafter known as small retail customers) when vesting contracts expire on 31 December 2000. The option preferred by the Government was the electricity equalisation pool (EEP). This option has been developed further by MIG and is now called the Electricity Tariff Equalisation Fund (ETEF).

The Government's objective in establishing the ETEF is to allow the Government to offer regulatory price protection to retail customers in a way that does not undermine competition in the market and does not expose retailers or Government to unacceptable financial risk.

The purpose of this paper is to explain how the ETEF will operate and to specify the steps that will be taken to implement the ETEF. This report sets out:

- the basic operation of the ETEF (Section 2);
- the data requirements to implement the ETEF (Section 3);
- a discussion of transitional issues (Section 4); and
- the legislative and institutional arrangements necessary to establish and operate the ETEF (Section 5).

A functional specification for the ETEF is included in the Annex to this report.

This paper should be regarded as a living document. That is, the details of the scheme will be progressively refined over the next few weeks and new versions of this document will be prepared and circulated when significant changes are made.

¹ Regulations will prescribe the customers who, for the purposes of the Electricity Supply Act (1995) NSW, are considered to be small retail customers.

2. Description of the ETEF

As discussed in *Replacement for vesting contracts*, the Government is of the firm view that the ETEF provides the best way for Government to offer small retail customers regulatory price protection without undermining competition in the market and exposing retailers or the shareholder to unacceptable financial risk.

Retailers involved in regulated retail electricity supply (initially the Government owned electricity retailers) are referred to as *standard retail suppliers* in this paper.

The ETEF is a fund that standard retail suppliers will be required to pay money into when pool prices are lower than the energy cost component they recover from regulated customers. When pool prices are higher than the energy cost component in the regulated tariff, the ETEF will make payments to standard retailers to enable them to purchase wholesale electricity for regulated customers and still earn a regulated margin.

If at certain times there are shortfalls in the ETEF, NSW Government-owned generators will make payments to cover the shortfall, thus ensuring the Fund is always in balance.

It will be mandatory for all standard retail suppliers and state owned generators in NSW to comply with the obligations under the rules of the ETEF.

This section describes the mechanics of the ETEF. It discusses:

- standard retail supplier payments to and from the ETEF; and
- the generators role in ensuring the ETEF has a minimum balance at all times.

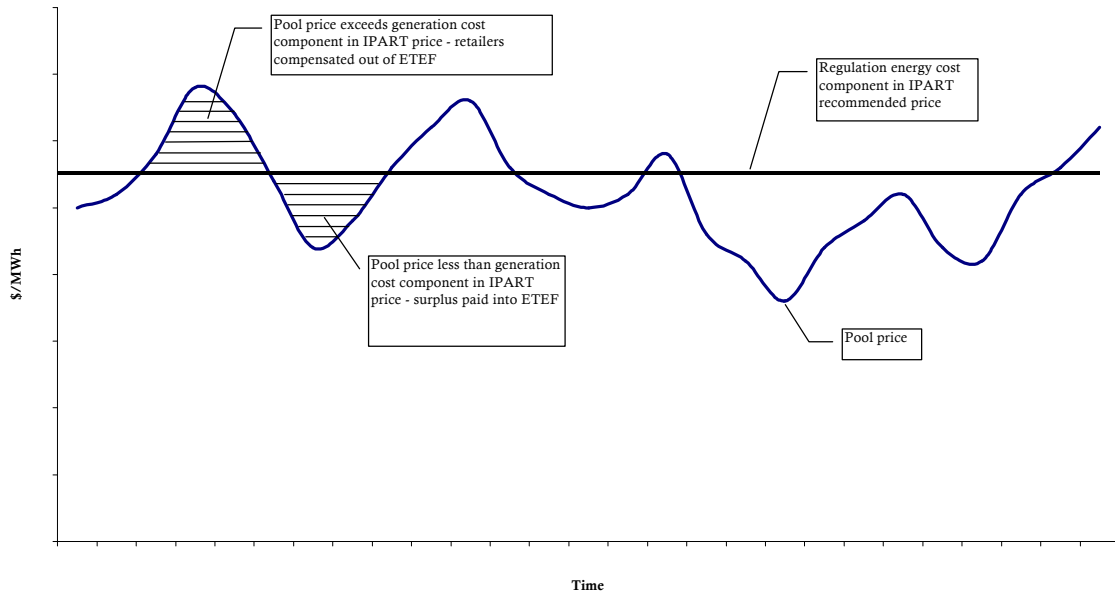
2.1. Standard retail supplier payments to and from the ETEF

From 2001, standard retail customers will pay a regulated tariff as determined by the Independent Pricing and Regulatory Tribunal (IPART). The tariff will contain a Regulated Energy Cost (REC) based on the long run marginal cost (LRMC) of the generation system.

Under the rules of the ETEF, when the pool price is lower than the REC, the difference (the surplus) will be paid by standard retail suppliers into the ETEF. When the pool price is higher than the REC, the deficit will be paid from the ETEF to retailers. This process is illustrated in Figure 1. The methodology for

calculating a standard retail supplier's payments to and from the ETEF is set out below.

Figure 1: Operation of the ETEF



One of the key objectives is to establish and maintain the balance of the ETEF at a level that provides adequate funds for retailers to meet wholesale energy purchase costs for regulated load when pool prices are higher than the REC. Clearly, there is a possibility that the ETEF may at times be insufficient to cover payments to standard retailers. The principal mechanism for managing shortfalls is discussed in Section 2.2

2.1.1. Calculating settlement amounts

Retailer payments to and from the ETEF will be calculated based on the difference between the REC in the regulated tariff(s) and the NSW pool price.

In its simplest form, for each half-hour of trading, for each Transmission Node Identifier (TNI) in its supply district, a retailer's settlement amount (SA) with the ETEF is:

$$SA = (REC - \text{pool price}) * (\text{transmission loss factor}) * (\text{regulated load})$$

When this quantity is negative it represents a payment from the ETEF to the retailer.²

In practice, a number of factors may need to be considered when determining the payment rules for retailer payments to and from the ETEF, including:

- the contract position of standard retail suppliers with respect to customers on regulated tariffs;
- the calculation of the quantity supplied at regulated tariffs; and
- IPART's decision regarding the regulated tariff and the energy cost component of this.

The first point is an issue associated with the transition to the operation of the ETEF (discussed in Section 4); the other two factors are considered below.

Quantity supplied at standard tariffs

As outlined in *Replacement for vesting contracts*, the timetable for the transition to full retail competition will determine which customers are eligible for standard tariffs. This is outlined in Table 1:

- the lightly shaded squares indicate customers who are already able to choose their retailer and whose electricity purchases are not subject to price regulation. The position of these customers in respect of access to a regulated tariff will not change with the introduction of full retail competition;
- the dark shaded squares indicate those customers who could choose their retailer but may also choose to remain on a regulated tariff; and
- the squares with no shading indicate customers who do not have choice of retailer and, therefore, ongoing price protection is required.

It is Government policy to allow contestable customers who use less than 160 MWh per annum the choice of being able to switch between the market and regulated arrangements. Customers may exercise this choice as many times as they like. This means that the quantity of customers covered by regulated tariffs may vary dramatically over time, depending upon the prices being offered in the market. This choice prevents small customers from being exposed to prices any higher than the tariff regulated by IPART.

² Detailed calculations are set out in the Annex to this report.

Some large customers have aggregated to create a (joint) consumption level of greater than 160 MWh per year, in order to be part of the contestable market. These customers will be allowed to disaggregate if they choose to in the future. If disaggregation results in a customer consuming less than 160 MWh per year, that customer will be entitled to elect to receive energy at regulated tariffs.

Table 1: Retail competition, transition and regulatory requirements

	Existing arrangements	Future pricing arrangements		
	→	→	→	→
Consumption (MWh per year)	Up to 31 December 2000	1 January to 30 June 2001	1 July to 31 December 2001	1 January 2002 to a point to be determined by review
Above 160	Contestable No price regulation	Contestable No price regulation	Contestable No price regulation	Contestable No price regulation
100-160	Not contestable Price regulation	Contestable Price regulation	Contestable Price regulation	Contestable Price regulation
40-100	Not contestable Price regulation	Not contestable Price regulation	Contestable Price regulation	Contestable Price regulation
0-40	Not contestable Price regulation	Not contestable Price regulation	Not contestable Price regulation	Contestable Price regulation

It will be necessary to determine the quantity of electricity supplied at regulated tariffs by each standard retail supplier to calculate payments to and from the ETEF. NEMMCO has data on the total load at each TNI and on second tier customer load. However, in order to calculate the load supplied at standard tariffs, it is also necessary to obtain data from retailers on:

- first tier customer load; and
- off-market load.

Off-market load is the quantity of electricity used by customers who have decided to switch retailers but the processing of the transfers of the customers has not been completed. Settlement in relation to these customers is undertaken by retailers and does not go through NEMMCO. Consequently it will be necessary to obtain the data from retailers. The data provided can be audited against customers recorded consumption after the transfer has been completed.

The data issues are discussed in detail in Section 3.

Calculation of the regulated energy component (REC)

As each standard retailer will have customers on a number of different tariffs, the ETEF will take into account these different tariffs by using a separate REC for each standard retailer. Treasury will calculate a REC for each standard retail supplier that:

- is derived from a weighted average of the existing tariffs currently in use by the retailer;
- is sculpted by NEM peak and off-peak times;³ and
- may be updated annually to reflect changes in the distribution of tariffs and the volumes of electricity sales related to those tariffs.

The peak/off-peak sculpting will be such that the average REC for each standard retailer will be equal to the Treasury determined REC for each business. Sculpting the REC in this way helps to alleviate the risks faced by retailers due to differences in their ex-ante calculated REC and the actual REC they receive from standard customers. These differences may be due to changes in the distribution of volumes under the various tariffs because of:

- day-to-day and seasonal variability of consumption by different customer classes; and
- customers leaving default tariffs and entering into negotiated contracts.

Treasury will provide preliminary RECs to the standard retail suppliers in mid December 2000.

Adjustments for purchases of green energy

In order to accommodate the green energy purchase requirements of standard retailers in respect of standard customers, the ETEF will allow for a green premium in the calculated REC. This premium will be calculated based on:

- the estimated average cost of purchasing green energy;
- standard retailer licence obligations relating to carbon emissions by regulated customers; and
- the total quantity of electricity sold in NSW.

³ NEM peak includes all trading intervals between 7:00am and 10:00pm on weekdays excluding NSW Bank Holidays. NEM off-peak is defined as all other intervals.

This premium will be calculated as an average cost that will be applied to the regulated customer load. The allowed green premium component in the calculated REC will not change as the volume of standard customers and regulated load changes due to customers leaving the default tariffs, as this premium is deemed to be an average level across the system and is independent of the number of standard customers.

Annex 1 provides a detailed outline of the background to this issue, including information on the source of cost data, the methodology for calculating the greenhouse allowance and the mechanism for delivering the allowance.

Adjustments for cross-border electricity supplies

Certain small retail customers are supplied electricity from inter-regional networks. While all NSW small retail customers are eligible for standard tariffs, the energy supplied to cross border customers is subject to (for NEM settlement purposes) the pool price of the NEM region from which the energy is served and not the NSW pool price. MIG has considered two alternative methods of treating this load:

- Option 1: the load for these small retail customers will be settled within the ETEF against the regional pool price from which they are served (in line with the NEM settlement process), introducing a degree of inter-regional pool price risk into the ETEF; or
- Option 2: the load for these customers may be hedged by the standard retailer with an external counter-party and ETEF settlements calculated on the difference between the REC and the contract price for this load.

MIG considers option 1 should be treated as the default, but option 2 should also be permitted, subject to the hedge:

- having a commercial contract price; and
- details (including half-hourly load and strike prices) being made available to the ETEF Administrator.

No other purchases for regulated customers will be treated in this manner.

2.1.2. Timetable for settlement of retailer payments

In order to minimise any cash flow risk to standard retailers, the timetable for settlement of the ETEF will follow the NEMMCO timetable for settlement of the

pool, as set out in the National Electricity Code. This is important in ensuring that retailer risk is minimised, consistent with one of the key objectives of the ETEF.

The current timetable of the NEMMCO settlements process means that settlement of the ETEF will occur as follows:

- a preliminary statement of a standard retailer's net payment to the ETEF for a given seven day billing period will be provided five business days after the end of that billing period;
- final settlement statements will be issued 18 business days after the end of the billing period; and
- payments to/from the ETEF must be authorised 20 business days after the end of the billing period via an electronic funds transfer system.

Revisions to settlement payments to and from the ETEF will occur in line with the NEMMCO timetable for revisions to settlement statements.

2.2. Generator payments to and from the ETEF

The obligation on NSW Government-owned generators will be to top-up the fund when the prices they have earned have caused the fund to be depleted.

The ETEF will be established and maintained at a level that will ensure that standard retail suppliers' payments to the ETEF are sufficient to finance the payments from the ETEF to retailers.

Given that the Fund will commence in January 2001, when pool prices tend to be relatively high, it is considered prudent to commence the ETEF with an initial balance of \$50 million. This will smooth the transition from the existing arrangements.

Any payments to retailers made from this float will be repaid over time according to a repayment schedule that will be determined by the Fund Administrator. The repayments of the borrowings from the initial float will be deducted from the level of the ETEF.

After six months, what remains of the initial float will be removed from the Fund. As a result, after six months, the balance of the Fund will be reduced to the greater of zero, and the level of the Fund less \$50 million.

The generators that are required to participate in the ETEF system are all those listed in Part 1, of Schedule 1 to the *Energy Services Corporations Act 1995*. This includes Delta Electricity, Eraring Energy, and Macquarie Generation. Snowy Hydro Limited will also be a participant in the ETEF, but the structure of its payments will differ from other generators. This is discussed in Section 2.2.4.

In the remainder of this section we outline:

- the methodology for calculating generator payments to and from the ETEF;
- the timing of generator payments to and from the ETEF; and
- Snowy's payments to and from the ETEF.

The transitional issue of how to treat generators' existing contract positions is discussed in Section 4.

2.2.1. Calculating generator payments to the ETEF

When state-owned generators are called to make payments to the ETEF, the total required payment will be the shortfall required to meet payments from the ETEF to standard retail suppliers in the relevant settlement week.

The proportion of the total payment that each generator is required to make will be calculated so that it is directly proportionate to the amount by which that generator has benefited from high pool prices – that is, the extent to which generators earn more than a reasonable profit (since payments are only made when generator returns exceed the long run marginal costs of production, which includes a reasonable profit).

In its simplest form, when a payment from generators to the ETEF is required, the payment from generator g , in week w , is calculated as:⁴

$$C(g, w) = C(w) \cdot \frac{GR(g, c)}{GR(c)}$$

Where:

- $C(w)$ is the total revenue required to meet the payments from the ETEF to standard retailers in the relevant settlement week (w); and
- $GR(g, c)/GR(c)$ determines the proportion that each generator is required to pay.

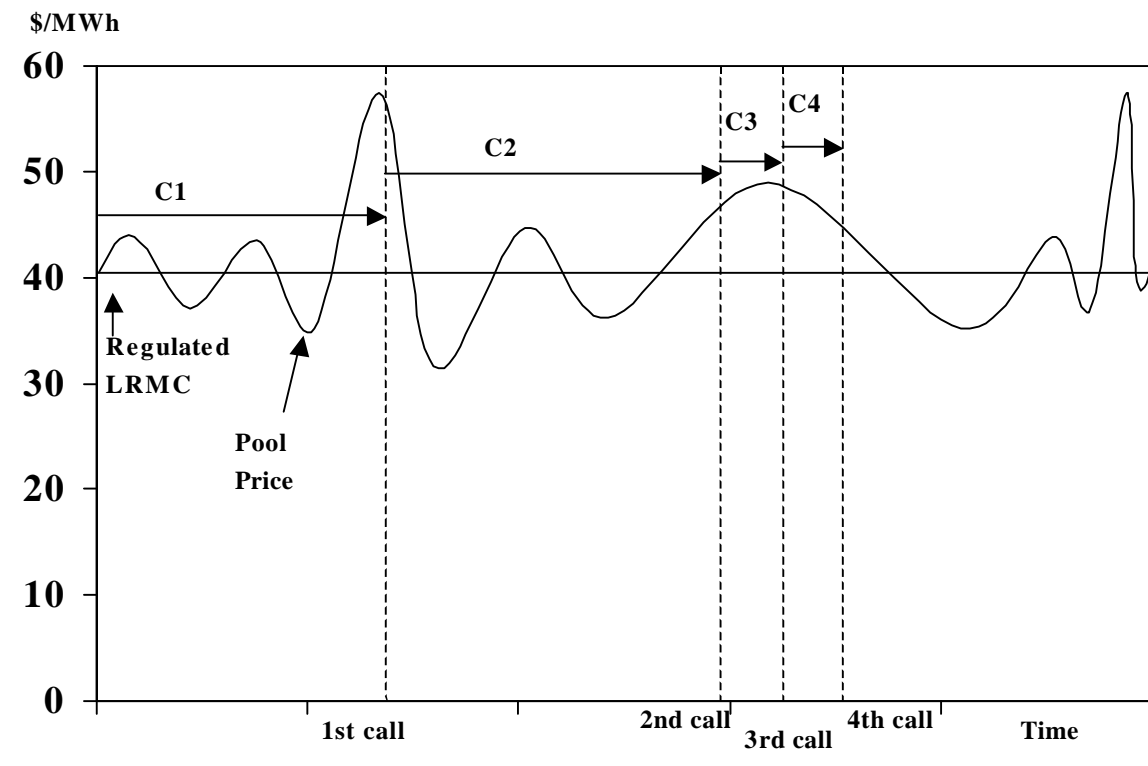
Each generator's revenue used in this calculation ($GR(g, c)$) is based on the difference between pool price and the REC when the pool price is greater than the REC, multiplied by the generator's output in the relevant half hour period. That is, generator payments will be based only on revenue earned when pool prices are higher than the REC.

⁴ The equations used in the calculation are contained in the Annex to this report.

Time periods used to calculate generator payments

The time period used for calculating generator payments to the ETEF is defined as the time since generators were last called to make payments. That is, the first period, denoted C1, is from 1 January 2001 until the first time generators are called to make payments to the ETEF. The second period (C2), is the time between C1 and the second time generators are called to make payments. If generators are required to make payments in successive weeks, then the relevant time period for calculating the contribution would be the previous (settlement) week. This is illustrated in Figure 2 below.

Figure 2: Time periods for generator payments



2.2.2. Payments from the ETEF to generators

When there are sufficient funds in the ETEF, it will make payments to state-owned generators to repay the money that has been paid into the Fund by the generators.

The ETEF will make repayments to generators from the available funds, in proportion to the amount each generator has paid into the Fund. Therefore, the magnitude of any repayments the ETEF will make to generators in a given settlement week will be a function of the available balances in the Fund following

retailer settlement with the ETEF, and the proportion of a given generator's payments of the total generator payments held in the Fund.

2.2.3. Timetable for settlement of generator payments

Generator payments to and from the ETEF will be settled using the settlement timetable described in Section 2.1.2. That is, in line with the current NEMMCO settlement timetable, generators will have:

- 20 business days to make the required payment from the end of the settlement week to which payments relate; and
- 15 business days to make payment after the interim settlement statement that will notify generators that a payment is required.

Information on the quantity of money in the ETEF will be publicly available. Given that a generator has access to pool prices, forecast dispatch and its own actual dispatch data, it should be a relatively straightforward task for a generator to estimate, with a reasonable degree of accuracy, the size of any payments it may be required to make. This information will assist generators' decision making in respect of their contract position.

2.2.4. Snowy Hydro Ltd

Snowy Hydro Ltd (Snowy) is the company that will be formed upon the corporatisation of the Snowy Mountains Hydro Electric Authority. The company will be a Corporations Law company owned by the States of NSW and Victoria and the Commonwealth of Australia. The NSW shareholding in Snowy will be in the order of 58 per cent.

The Treasurer did not include a payment rule relating to Snowy in the rules that were Gazetted on 22 December 2000 due to uncertainty about the timetable for Snowy corporatisation and the accounting treatment of the Snowy dividend. The Fund Administrator will monitor the level of reserves in the ETEF prior to the time that the next Snowy dividend is paid to the NSW Government at the end of each financial year. If the Administrator considers that there are insufficient reserves to meet payments to standard retailers and repayments to generators or a high likelihood of future calls on generators, the Administrator will make a formal recommendation to the Treasurer to include a contribution from the Snowy dividend in the payments rules.

3. Data issues

The principal data issues associated with the ETEF relate to calculating the level of regulated load. The operations of the ETEF will require close alignment with the current systems and processes used by NEMMCO and retailers for energy settlement purposes. This section outlines:

- the data used in the NEMMCO settlement process to identify what information is necessary for settlement of the ETEF;
- the data required from NEMMCO;
- the data required from standard retail suppliers; and
- metering and load profiling issues associated with first tier customers.

3.1. NEMMCO settlements: data implications

The NEMMCO settlement system works on a differencing basis. Each TNI, the exit point from the transmission network, is assigned to a standard retailer and that retailer has the *prima facie* responsibility for payment for all energy that passes through that TNI. That energy is purchased at the appropriate reference node pool price multiplied by the TNI loss factor. The reference node for most NSW retailers is the NSW node, but some standard retailers take supply from other regions (Victoria, Queensland and Snowy) for their regulated customers.

Where the standard retailer is not the retailer of choice for contestable customers, the energy used by those customers must be deducted from the total energy flowing through the appropriate TNI. This is done by taking half-hourly consumption of those customers and adding the appropriate (static) distribution loss factor (DLF). This energy is then subtracted from the total TNI energy. Each customer site that is supplied by a second tier retailer is registered with NEMMCO and assigned a National Metering Identifier (NMI) that identifies the site and related data.

The Fund Administrator must replicate the NEMMCO settlement process. As well as deducting second tier energy from a TNI, the Fund Administrator must deduct the standard retail supplier's first tier contestable load from the load measured at a TNI in order to determine the level of regulated load at the TNI.

Consequently, the ETEF Administrator requires:

- access to the NEMMCO settlement data of each of the six standard retail suppliers; and

- similar information for the first tier contestable customers, specifically metered half-hourly consumption, the appropriate DLFs and the TNI related to each customer.

The data required to identify a retailer's first-tier contestable customer load is similar to that available from NEMMCO for second tier customers.

3.2. Data required from NEMMCO

As detailed above, the ETEF scheme will require access to the following NEMMCO data:

- pool prices at each relevant reference node by each half hour;
- TNI data, including node identifier, transmission loss factors and total interval consumption; and
- second tier consumption data by TNI, which is aggregated by retailer and metering data agent (MDA) and requires information on NMI consumption and distribution loss factors.

Typically, NEMMCO data is only accurate at a point in time and is often revised. The Fund Administrator will need to ensure that ETEF settlement occurs using the most recent data and that re-settlement processes take place when data is revised post-settlement.

3.3. First tier data

Ideally, first tier data would be identical to the second tier data that is available from NEMMCO. However, as the data is internal to the standard retailer it is not as easily audited and verified as NEMMCO data, and it may be held in a variety of forms by each retailer.

First tier data can be aggregated to TNI level for ETEF settlement purposes. However, for audit and verification purposes the following detailed data must be available:

- a register of first tier sites with NMI (or other internal identifier) data for each site, such as address, meter number(s), associated TNI, DLF, start and finish dates; and
- a meter database containing interval data for all appropriate internal NMIs with appropriate data versioning and data status flags (estimated, substituted, actual, revised).

It is likely that daily communications systems do not exist for many first-tier sites. ETEF settlements will require an acceptable data estimation process accompanied by a system to carry revisions as data becomes available to ensure an accurate settlements process.

3.4. Metering issues

An issue that arises for the Fund Administrator is that NMIs are usually only assigned by Distribution Network Service Providers (DNSP) to second tier customers. Assignment of NMIs to first tier customers should not be a large task as networks already monitor the network tariffs and DLFs used by first tier customers for internal charging purposes between DNSPs and their related standard retailers.

A process of estimation and revision will be used to calculate the quantity of electricity consumed by first tier customers with manually read interval meters. Retailers will use estimates of half-hourly load for these customers in their calculation of total first tier load until such time as these meters have been read and actual half-hourly data is available. At this time, retailers will submit revised data to the Fund Administrator to be taken into account in settlement revisions.

Load estimation techniques will be used to estimate the quantity of electricity consumed by first tier customers with accumulation meters. The estimated quantity will be used to calculate ETEF settlements and revisions will be made after the accumulation meters have been read. The load estimate methodology is discussed below.

3.5. Load estimation

Half-hourly electricity usage of first tier customers without interval meters may be estimated in a number of ways. MIG has considered the following two estimation options:

- Net System Load Estimation (NSLE); or
- Lost Customer (or second tier customer) Load Estimation (LCLE).

The NSLE would be calculated by retailer supply district and will assume that all non-interval metered customers within a retailer supply district have the same energy usage profile over time. This profile will be equal to the total load within the retailer supply district, less all interval-metered load. The use of NSLE for this purpose provides the incentive for retailers to interval meter any first tier customers that they deem to have a more attractive load shape than that of the NSLE (taking into account the cost of installing an interval meter).

LCLE is probably more representative of the non-interval metered first tier customer load shape than the NSLE. However, this approach does not provide the same economic incentives to retailers and could potentially be gamed. For example, any non-interval metered first tier customer that has a higher cost load profile compared to the lost customer load profile would effectively be subsidised by the ETEF.

MIG considers that NSLE should be used to estimate non-interval metered first tier customer load.

4. Transitional issues

The three most significant transitional issues relate to retailers' contract positions, and the retailers' obligations under their Power Purchase Agreements. These are discussed below:

- **Retailer contract position** for a range of reasons, it is possible that retailers have signed contracts in respect of their expected regulated load for the period following the termination of the vesting contracts on 31 December 2000;
- **Power purchase agreements** a number of NSW state-owned retailers have power purchase agreements with private generators. Under vesting contract arrangements, these agreements have been allocated to each retailer's franchise load. An issue remains as to whether these agreements are allocated to regulated load from 1 January 2001 onwards; and
- **Generator contract position** the payment rules require generators to make payments from time to time to the ETEF, the proceeds of which are to be used to financially support the regulated tariffs paid by customers. There is an issue as to whether the generators' contract position should or should not be considered in determining these payments.

The options for managing these transitional issues are discussed in more detail below.

4.1. Retailer contract position

Before considering the options for accounting for a retailer's contract position in respect of its regulated load, it is worthwhile considering the implications of ignoring these contracts. The effects will depend upon whether the contract price is more or less favourable than the pool price.

In general, if the price of contracts in respect of regulated load is lower than the pool price, the retailer will earn a windfall. The windfall is equal to the difference between the pool price for each half hour less the settled contract price for the same period multiplied by the amount of regulated load contracted.

It is possible for retailers to use this windfall to cross subsidise their sales to contestable customers and this would frustrate the entry of other retailers to the NSW market. This would be damaging to the interests of customers. This would suggest that the retailers' contract position should be taken into account when assessing ETEF payments.

However, taking these contracts into account is difficult. The difficulties mainly result from the logistics of assembling information and calculating retailers contract positions. Whilst this exercise need only be done once to reflect a snapshot of the retailer contract positions, the magnitude of this task should not be underestimated.

MIG recommends that while it is desirable to determine retailers contract positions for the purposes of maintaining accountability, retailers contract positions should not be taken into account in the ETEF for the following reasons:

- any windfalls are likely to be small;
- there are significant difficulties associated with assembling information and calculating retailers contract positions; and
- if contracts are taken into account, this potentially mutes the commercial incentives of retail managers in the same way that it does if contracts are ignored.

In any case, the standard retail suppliers have confirmed to MIG that they are not contracted in respect of regulated load after the vesting contracts end on 31 December 2000.

4.2. Embedded generators

There are a number of PPAs between NSW retailers and private generators. These include:

- Burrendong with Advance Energy;
- Wyangla with Great Southern Energy;
- Copeton Dam with NorthPower;
- Smithfield and Tower/Appin with Integral Energy; and
- Redbank with Energy Australia.

Other than Redbank, all of these power stations have been commissioned.

Under the vesting contract arrangements, the NSW Government has allowed retailers to reduce their franchise load covered by PPAs.

MIG will treat all existing and future embedded generation contracts as if they were outside the ETEF settlement process. Regulated load will be calculated net of the load supplied under PPAs, in a similar way as vesting load was calculated. This will enable retailers to treat the embedded contracts as contracts against regulated load. This also allows retailers to purchase green energy with respect to standard customers from embedded sources.

4.3. Generator contract position

As described above, the ETEF provides for generators to make payments to the ETEF at times when there are no funds available to make compensation payments to retailers.

It is important to note that the main source of funds to meet compensation payments to retailers will come from regulated customers themselves. In this respect the fund simply smooths, or equalises, energy purchase costs over time.

Calls on generators for cash to support compensation payments to retailers are expected to be infrequent once the fund has been operating for some time.

It is reasonable to expect that generators will take the possibility of being required to make payments to the ETEF into account when determining their contract portfolio. In general, generators will have to consider the possibility that they may be called to support the ETEF as well as making difference payments in respect of hedging contracts they may have with customers.

Given that generator contributions are expected to be relatively infrequent once the fund has been operating for some time, combined with the fact that it could be a difficult logistical exercise to value a generators contract position from week-to-week, MIG does not recommend that the generators contract position be considered when determining their contributions to the ETEF.

Instead, to smooth the transition from the current arrangements, the Fund will start with a \$50m float . In the transition the float will minimise any payments that would be made by generators and, therefore, minimise the chance that generators would have any overlapping financial obligations to meet contract and Fund payments. By the time the float is repaid, it is expected that the generators would have adjusted their contract portfolio to account for the possibility of being called to make contributions to the fund.

As described in Section 2.2 the surpluses that accumulate in the Fund will be used to pay back the float .

5. Legislative and institutional arrangements

The *Electricity Supply Amendment Act 2000* included a statutory framework for the establishment and operation of the ETEF. The Act also set out legal obligations on standard retailers and state-owned generators to comply with payment rules.

The *Electricity Supply Amendment Act 2000* established the Electricity Tariff Equalisation Ministerial Corporation as the legal entity responsible for the operation of the ETEF. The ETEF and the Ministerial Corporation falls within the portfolio responsibility of the Treasurer.

5.1. Legislative framework

To support the institutional structure described above, the Ministerial Corporation has the following statutory functions:

- administering and controlling the ETEF;
- administering the Payment Rules; and
- requiring the provision of information from standard retailers and state-owned generators.

The Ministerial Corporation is listed as an authority under Schedule 2 of the *Public Finance and Audit Act 1983* and would be governed by established reporting and audit arrangements as appropriate to a body managing and investing public monies. In addition, the Ministerial Corporation is subject to the annual reporting process based on financial statements audited by the Auditor-General.

The Payment Rules administered by the Corporation require standard retailers and state-owned generators to undertake certain functions to support the operation of the ETEF in line with payment rules as approved by the Treasurer.

The mandatory payment rules cover payments:

- made by retail suppliers to the ETEF;
- made to retail suppliers from the ETEF;
- made by electricity generators to the ETEF;
- made to electricity generators from the ETEF; and
- to be made to the Consolidated Fund from the ETEF.

On 20 December 2000, the Treasurer approved the initial set of Payment Rules (notified in the Government Gazette on 22 December 2000). The Treasurer, after consultation with the Minister for Energy, can amend the payment rules at any time through a Gazettal notice. A copy of the payment rules can be obtained from the following Government website: www.treasury.nsw.gov.au/etemrule.pdf

The Ministerial Corporation has investment powers under Part 3 of the *Public Authorities (Financial Arrangements) Act 1987*. However, the Corporation is prevented from entering into electricity hedging contracts or investments relating to the electricity industry.

5.2. Institutional framework

The organisational structure for the administration of the ETEF is outlined below.

5.2.1. Electricity Tariff Equalisation Ministerial Corporation

In summary the Ministerial Corporation has responsibility for a range of operations, the key ones being:

- development and advice on the operation of the Payment Rules; and
- administration of the settlements system – design of the settlement process, constructing the necessary IT systems, operating the settlement process for the ETEF, consulting with businesses and interfacing with the Fund Manager.

MIG has responsibility for providing advice to the Treasurer on a regular basis regarding the operation of the payment rules and the performance of the ETEF.

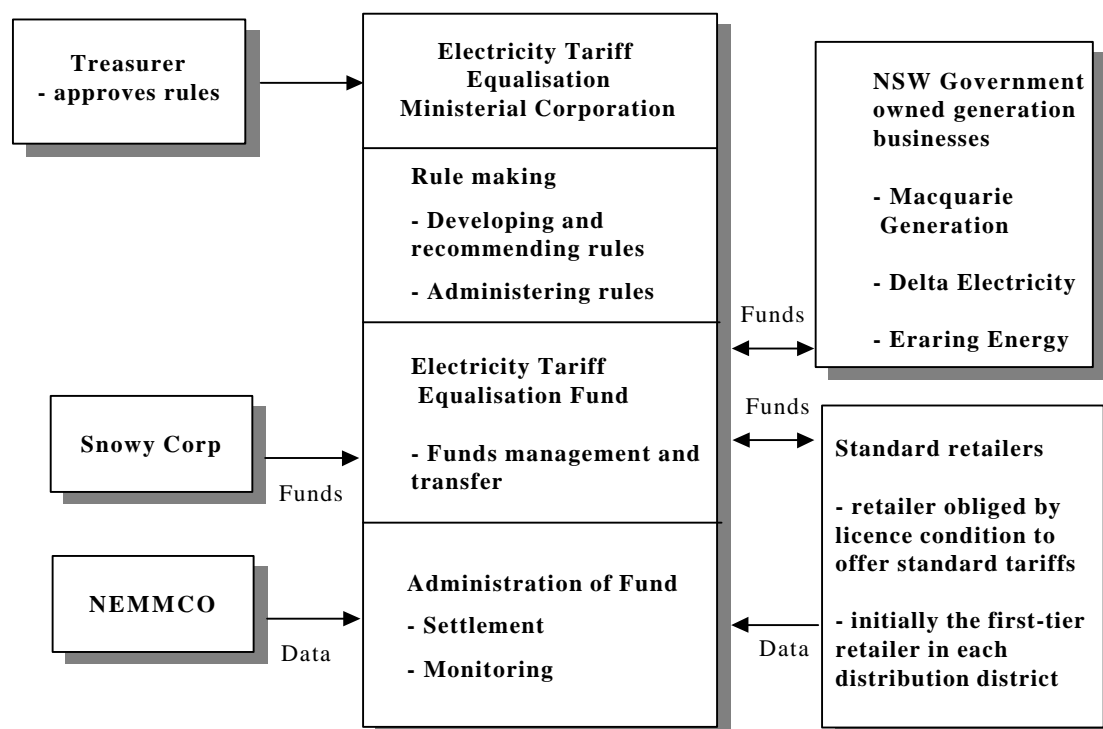
The Executive Director of the Financial Management Directorate of Treasury will have responsibility for the role of Fund Administrator including responsibility for overseeing the operations of the Ministerial Corporation, resolving any dispute regarding payment amounts and signing off financial accounts.

The Directors of the Crown Asset and Liability Management Branch of the Financial Management Directorate of Treasury will have the delegated powers to authorise payments to and from the Fund in accordance with the payment rules.

Given the confidential nature of the data being used to determine the payments to and from retailers and generators, it would be inappropriate to give the responsibility for managing the ETEF to an industry participant or to anyone who may become an industry participant. Thus, the ETEF legislation prohibits the involvement of the electricity businesses in the administration of the ETEF.

The costs associated with establishing and running the Ministerial Corporation may be recovered from reserves that accumulate in the ETEF.

Figure 3: Institutional structure



5.2.2. Funds management and borrowing

Initially, the Treasurer will appoint the Treasury Corporation (TCorp) as the Fund Manager responsible for the following:

- administering the funds transfer process;
- investing financial surpluses that accrue in the ETEF; and
- undertaking borrowings for the ETEF in line with directions made by the Treasurer.

TCorp is considered an appropriate initial Fund Manager for a number of reasons:

- it can be allocated responsibility in time for the 1 January 2001 commencement date;

- TCorp has the necessary attributes of a desirable funds manager – strong investment and borrowing capability, market recognition and accountability systems; and
- TCorp is used by Treasury to carry out similar functions (e.g. funds management for the Insurance Ministerial Corporation) and therefore has the necessary expertise and is likely to have the minimum of implementation problems.

The costs of the Funds Manager function will be met out of the reserves that accumulate in the ETEF.

5.2.3. Method of payment

Payments to and from the ETEF must be made using the electronic funds transfer system, Austraclear. The Fund Manager's account details will be provided to standard retail suppliers and electricity generators, and the businesses will be required to provide their account details to the Fund Administrator.

5.2.4. Audit and monitoring

NEMMCO settlement data will be the prime source of data used to calculate payments. The NEMMCO settlement process currently incorporates accepted systems for resolving disputes about the accuracy of settlement data, provided that NEM data revisions are taken into account.

The one area where ongoing audit and monitoring will be necessary is the verification of retailer information on the classification of first tier customers and standard customers. Standard retailers may misreport the number of first tier customers depending on the level of wholesale prices – the higher the pool price, the greater the incentive to claim first tier customers as regulated customers. The ability of customers below 160 MWh per annum to switch between regulated arrangements and the competitive market complicates this problem.

To overcome this potential problem, the Treasurer, on the advice of the Ministerial Corporation, will be able to request IPART audit and verify retailer data on first tier customers. Retailers will pay for all audits conducted by, or at the request of IPART, consistent with the provisions in the *Electricity Supply Act 1995* (s.87). The auditing system will include the following features:

- IPART will undertake standard audits to verify the accuracy of the data provided by retailers to the Fund Administrator. In order to reduce the costs of this process and avoid disruption of the retailers' business, these audits should be timed to coincide with IPART audits of standard retail suppliers that are undertaken for other purposes;
- if material discrepancies in the data are revealed in the standard audit, the Treasurer may request that a full audit is undertaken; and

- if the full audit verifies that there are material discrepancies in the data provided by a retailer to the Fund Administrator, the Fund Administrator may request that more frequent audits are undertaken of the retailer in question.

If the full audit reveals that that the information provided by a standard retail supplier is considered to be false or misleading to an extent that has a material effect on the level of payments made, the retailer will be subject to the penalty provisions included in the *Electricity Supply Amendment Bill 2000* (s.43EP).

Annex 1: Allowance for greenhouse compliance

In the terms of reference given to IPART by the NSW Premier under Section 9 of the IPART Act, in setting the regulated retail tariffs, IPART was required to make an allowance for purchases of green energy, consistent with retailer licence obligations.

IPART's report to the Premier does not explicitly indicate the allowance it has made for the purchase of green energy consistent with retailer's licence obligations.

MIG, in determining the green energy component in the overall energy cost embodied in the regulated tariff, has relied on recent analyses conducted by IPART on this matter.¹

Licence requirements

Currently, NSW licensed electricity retailers are required to seek reductions in greenhouse emissions by 5% of the average per capita level in 1989/90 by 2000/01.

NSW greenhouse targets

A report commissioned by IPART from Intelligent Energy Systems (IES) states that the average per capita level of CO₂ equivalent emissions in 1989/90 in NSW was 7.65t. The benchmark reduction required is 7.44t per capita in 1999/00 and 7.27t per capita in 2000/01, remaining constant thereafter.¹

Estimated cost of achieving NSW greenhouse target

In the draft report prepared by IES for IPART, the authors considered that green energy purchases would cost a further \$15/MWh over the cost of wholesale energy cost. The IES report indicates (although it does not clearly state) that the \$15/MWh green premium is regarded as a premium over the *pool price*. IES assumed the pool price in the 2000 calendar year would be approximately \$24-\$25/MWh (the NSW pool price has been over \$37/MWh for the 2000 calendar year).

¹ Intelligent Energy Systems, *Energy Costs Pass Through for NSW Franchise Supply*, Draft report prepared for IPART, January, 2000.

Thus, it could be inferred from these IES estimates that they believe the average cost of purchasing green energy sufficient to meet the licence requirements was around \$40/MWh in January 2000.

This \$15/MWh premium is an estimate of the cost of purchasing zero rated green energy for meeting green house obligations, and was regarded by IES as an upper limit of the likely cost to retailers of meeting green energy requirements.

The \$15/MWh premium for green purchases yields an average premium, when spread over all retail electricity customers in NSW of \$2.4/MWh, over and above the wholesale cost of electricity. This estimate was based on the following assumptions:

- estimates of energy consumption in NSW (58,480 GWh),
- total required reduction in greenhouse emissions (46,710t CO₂ equivalents),
- published transmission and distribution loss factors, and
- pool coefficient-average emissions for energy purchased from the NSW grid (value used in IES calculation is 0.878 average for 1998/99 year).

More specifically, the IES report calculated the costs of meeting the NSW greenhouse target as follows:

$$Cost = \left[1 - \frac{46710}{poolcoeff \times (1+l) \times 58480} \right] \times premium$$

IPART's approach in previous (December 1999) Determination

IPART's 1999 Determination (*Pricing for the retail supply of electricity to franchise customers*) is unclear regarding green energy purchase costs.

IPART's report does not explicitly mention the treatment of green energy purchases. However, IPART has informed MIG that the costs are included in the list of additional costs, over and above the 6.6% retail margin, that can be recovered from franchise customers. More specifically IPART have advised that these costs are included as part of the costs referred to in the following statement in its report:

Type 2 vesting contract and any other residual wholesale purchases for franchise retail customers at a price to be determined by the Tribunal (p vii)

IPART has also advised that it has used the IES report's \$15/MWh estimate of the green premium and applied this to retailer's *actual* purchases of green to

determine what should be the allowed increase over the wholesale energy cost. The data on actual purchases was obtained from the LACB Annual Reports.

IPART does not state whether it regarded the premium to be a mark up over pool prices whatever the level of the pool price, or the average cost of purchasing green energy at a level sufficient to meet the licence requirements (and therefore around \$40/MWh).

IPART's approach in November 2000 Determination

IPART assumes that the cost of green purchases is taken into account in the estimate of the wholesale energy cost (based on LRMC), which ranges from \$36-\$56/MWh.

Treatment of green energy costs in the ETEF

If the full difference between the Regulated Energy Cost (REC) allowed by IPART and the NSW pool price (REC-PP) is extracted from standard retailers and deposited into the Equalisation Fund, then this will not allow the retailer any of the premium intended to enable it purchase more expensive green energy in compliance with its licence conditions. Consequently, MIG considers that standard retailers should be allowed to retain an appropriate amount of money for the purchase of green energy consistent with licence requirements, but only in respect of regulated customers.

MIG will calculate the cost per MWh of end use energy of meeting the licence requirement as:

$$$/MWh = \frac{\text{premium} * (\text{actual emissions} - \text{target emissions})}{MWh \text{ of end use electricity}}$$

Where:

premium is the amount over and above the cost of non-green energy, that is necessary in order to purchase green energy. Given the current licence requirements, retailers and generators pool price forecasts, and information supplied by industry on the estimated cost of producing sufficient green energy to meet licence requirements, a premium of \$15/MWh is used for 2000/01.

actual emissions This estimate is based on an assessment of the emissions coefficients for NSW plant (sourced from ESAA data), and imports, and generators estimates of outputs, and imports contained in the SCI (totalling electricity sent out equivalent to the

Transgrid High Case Forecast in the Transgrid Annual Planning Statement (2000)

target emissions is based on the licence requirement target of 7.27 t CO₂ equivalent annual emissions per capita, and an assumed population growth rate of 1% per annum in NSW.

MWh end use energy is then calculated, using the High Case forecast in Transgrid's Annual Planning Statement 2000 estimate of end use electricity (which is calculated as sent out energy plus embedded generation).

The base case estimates suggest that an average premium of around \$1.50/MWh of end use energy applied across the whole amount of end use energy is sufficient to enable retailers to meet green energy purchases specified in their licences.

To check the robustness of these estimates to different growth rates in demand, three growth scenarios were considered:

- Transgrid Base Case demand forecast;
- Transgrid High Case demand forecast; and
- NSW generator forecasts for NSW demand.

Based on previous years, the Transgrid base case could be regarded as somewhat conservative. Underestimating the quantity of energy demanded could lead to an underestimation of the cost associated with meeting the green licence requirements

The Transgrid High Case forecast of end use electricity is somewhat lower than the NSW generator forecast at the end of a five year forecast period (2004/05). The NSW generator forecast show energy consumption growing at a faster rate in 2000/01 and 2001/02 than the Transgrid High Case and then falling to a slower growth rate in the latter years.

MIG also assessed the impact of estimating total emissions using LCAB estimates of the per capita emissions in 2000 carried forward, and multiplied by the population in future years (assumed to grow at 1% pa).

The Treasury analysis suggests greater variation in total emissions due to new green energy sources coming on line, and a higher level of emissions in 2002-2004. Consequently the required revenue is lower when the LCAB estimates are used.

The table below presents the results for the:

- Low emissions scenario using Transgrid base case forecasts of electricity consumption, and the LCAB estimate of emissions per capita in 2000, rolled forward.
- Base case emissions scenario using Transgrid high case forecasts of electricity usage and the Treasury analysis of forecast actual emissions. The source of generation is constructed from the NSW Generators SCIs; and
- High case emissions scenario using the NSW generator demand forecast of generation and energy usage, and Treasury analysis of the resulting carbon emissions.

The results of the three scenarios in terms of the \$/MWh of end use energy required to enable retailers to comply with their licence requirements for green energy are presented in Table 2.

Scenario	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05
Low scenario	0.97	1.24	1.17	1.16	1.14	1.13
Base scenario	0.96	1.29	1.57	1.59	1.52	1.38
High Scenario	1.27	1.65	1.81	1.81	1.78	1.81

Based on these results, MIG considers that an allowance of \$1.50/MWh of end use energy in 2001 is a reasonable estimate of the allowance necessary to ensure that NSW retailers can meet the cost of purchasing green energy sufficient to meet their licence requirements.

This allowance explicitly acknowledges the uncertainty regarding the actual emissions, the quantity of energy produced in NSW, and the fact that the high scenario growth projections are considered too high.

For the purposes of the ETEF, this premium has been built into the regulated margins of the retailers who are required to comply with the rules of the ETEF.

This results in a retail margin premium , for *regulated customers only*, of around 1.5%. The standard retailers serving regulated retail customers are expected to use this premium to assist them meet their licence obligation to reduce carbon according to the agreed targets.