Australian Energy Market Commission
PO Box A2449
SYDNEY SOUTH NSW 1235

Lodged online: www.aemc.gov.au

30 August 2022

ERC0355 – Recovering the cost of AEMO's participant fees (additional submission)

The Australian Energy Council (AEC) wishes to make an additional, late submission to the Australian Energy Market Commission's (AEMC) *Recovering the Cost of AEMO's Participant Fees* Directions Paper (the Paper). This is to provide a further historical references to those which were included in our submission dated 18 August. These have been attached for convenience to this submission.

The Australian Energy Council is the peak industry body for electricity and downstream natural gas businesses operating in the competitive wholesale and retail energy markets. AEC members generate and sell energy to over 10 million homes and businesses and are major investors in renewable energy generation. The AEC supports reaching net-zero by 2050 as well as a 55 per cent emissions reduction target by 2035 and is committed to delivering the energy transition for the benefit of consumers.

Allen Consulting Advice

In our 18 September submission we stated that "Since 2005, fee structures have been expressly designed to discourage passing through fees immediately to customers" and in support referred to material from Allen Consulting Group who were engaged by the National Electricity Market Management Company (NEMMCO) in 2005, 2010 and 2016.

In further review of these documents, only the 2005 document (attached to the 2005 NEMMCO fee determination) provides relevant argument. This can be found in section 3.2 in relation to economic efficiency:

> "A fee structure that promotes productive efficiency is one that places some discipline on NEMMCO's costs. A fee structure that Participants are not simply able to pass on to their customers would create such a discipline, since Participants would be motivated to ensure that NEMMCO operates at minimum cost (for a given level of service)."

The above quote was then relied upon by NEMMCO in 4.4.2 and 4.4.7 of their determination as justification for designing a fee structure that is difficult to pass through to customers.

And, in section 4.3, in defence of NEMMCO's use of only fixed fees for generators, ACG said:

> "Variable fees on Generators
> An obvious candidate for variable fees for Generators is one based on energy scheduled in the contemporaneous year that the fee is to be paid. However, since Generators operate upstream from Market Customers, such fees would be very likely to be passed on in higher bid prices in the NEM. To the extent that the wholesale market is competitive (with generators' bids equal to their marginal costs), variable fees on Generators would be passed on dollar for dollar, thus defeating the purpose of levying fees on Generators in the first place."

NERA Advice

Level 14, 50 Market Street
Melbourne 3000
GPO Box 1823 Melbourne Victoria 3001

P +61 3 9205 3100
E info@energycouncil.com.au
W energycouncil.com.au

ABN 926 084 953 07

The 2005 ACG advice referenced above largely re-endorsed work performed earlier by National Economic Research Associates (NERA) in March 2003. The AEC overlooked this reference in its 18 August submission.

In this advice, at 4.5.1, NERA rebutted participant argument that the fees should be structured in such a way as to expedited pass through to customers:

> "While it may be appropriate to facilitate pass through of NEMMCO's fees from an equity perspective, this principle does not generally apply from an economic efficiency perspective. As discussed above, economic efficiency is maximised if the impact on final customer demand is minimised. The most obvious way to achieve this is to set fees in a manner that prevents or delays those fees being passed on to end customers. We have already argued that NEMMCO's current fee structure may achieve this to the extent that market constraints cause fees on historically installed (and sunk) generation capacity to be difficult for generators to pass on (discussed further below)."

The above quotes are consistent with a subsequent two decades of practice in NEMMCO and AEMO structuring allocated fees in a way that was difficult for those captured by them to directly pass them through.

As the AEC noted in its 18 September submission, over the last two decades, market participants have repeatedly argued that NEMMCO or AEMO should employ structures to assist their passing through of participant fees. However, in all those determinations, this request has been rejected.

ENA's proposal is therefore not substantively novel. It seeks to achieve what has been rejected many times previously simply by using a different administrative instrument: introducing a new pass-through rule outside rather than within AEMO's fee determination.

Although the 2003 determination did not allocate fees to networks, NERA anticipated a circumstance where it might arise in future, and explicitly considered that these businesses will have to wait until the end of the next review period for these costs to be passed through to final customers:

> "It is also possible that imposing fees on other Code Participants could achieve the same effect if regulatory constraints mean that those businesses could not immediately pass on NEMMCO fees to their customers. This may well be the case for regulated retail, distribution and transmission businesses where there are no provisions in their regulatory arrangements for the pass through of changes in NEMMCO fees. If this is the case then those businesses will generally have to wait until the end of the next review period for these costs to be passed through to final customers."

The ENA rule change is intended to not avoid the businesses having to wait as anticipated by NERA and is therefore contrary to NERA's recommended approach.

Level 14, 50 Market Street
Melbourne 3000
GPO Box 1823 Melbourne Victoria 3001

P +61 3 9205 3100
E info@energycouncil.com.au
W energycouncil.com.au

ABN 926 084 953 07

Any questions about this submission should be addressed to me directly, by email to ben.skinner@energycouncil.com.au or by telephone on (03) 9205 3116.

Yours sincerely,

Ben Skinner
General Manager, Policy

Attachments:

(1) NEMMCO 2005 participant fees determination (including ACG advice)
(2) Assessment of Economic Efficiency of Participant Fee Structures, A Final Report for NEMMCO, National Economic Research Associates, March 2003

Level 14, 50 Market Street
Melbourne 3000
GPO Box 1823 Melbourne Victoria 3001

P +61 3 9205 3100
E info@energycouncil.com.au
W energycouncil.com.au

ABN 926 084 953 07

NEMMCO

National Electricity Market Management Company Limited
ABN 94 072 010 327

Determination and Report

Structure of Participant Fees under clause 2.11 of the National Electricity Rules

24 March 2006

TABLE OF CONTENTS

1 Determination - Structure of Participant fees

In accordance with clause 2.11.1 of the National Electricity Rules (**Rules**) and on the basis of the reasoning and in light of the considerations set out in this Determination and Report, NEMMCO determines that the structure of *Participant fees* for the period 1 July 2006 to 30 June 2011 will be as follows:

NEMMCO general fees: allocated cost component (Part A)[1]

1. For each *financial year* covered by the structure, 70% of NEMMCO's budgeted revenue requirements determined under the Rules (excluding budgeted revenue requirements for FRC, new *declared NEM projects* and the *Participant compensation fund* and less forecast revenue from registration fees and fees for Incremental Services) are called "allocated costs" and are apportioned on the following basis:

   (a) 55% to *Market Customers*; and

   (b) 45% to *Generators* and *Market Network Service Providers*, of which:

      (i) two-thirds is apportioned to *Market Generators* in respect of their *market generating units*, Non-Market Scheduled Generators in respect of their non market scheduled generating units and *Market Network Service Providers* in respect of their *market network services*;

      (ii) one-third is apportioned only to *Market Generators* in respect of their *market generating units* and *Market Network Service Providers* in respect of their *market network services*; and

      (iii) none is apportioned to Non-Market Non-Scheduled Generators in respect of their non market non scheduled generating units.

2. The allocated costs apportioned to *Market Customers* under paragraph 1(a) for a *financial year* will be converted to a rate per MWh set on the basis of NEMMCO's estimate of total MWh to be settled in *spot market transactions* by *Market Customers* during that *financial year*. The amount payable by each *Market Customer* for a *billing period* is that rate multiplied by the actual MWh settled in *spot market transactions* for that *Market Customer* in respect of that *billing period*.

3. Of the allocated costs apportioned to a group of *Generators* and *Market Network Service Providers* under paragraph 1(b)(i) or 1(b)(ii) for a *financial year:*

   (a) 50% will be shared between each member of that group, on the basis of the aggregate of the MWh of energy scheduled[2] or

[1] The references to Parts in this determination are to be read with Figure 1: Overview of fee structure determination.

[2] For a *scheduled generating unit* or a *market network service*.

energy metered[3] in the previous calendar year in respect of their *generating units* of the relevant category and *market network services* as a proportion of the total of the equivalent figures for all those members, and converted to a daily rate for each member; and

(b) 50% will be shared between each member of that group, on the basis of the aggregate of the higher of the greatest registered capacity and greatest notified maximum capacity in the previous calendar year in respect of each of their *generating units* of the relevant category and *market network services* as a proportion of the total of the equivalent figures for all those members, and converted to a daily rate for each member.

4. The amount payable by each *Generator*[4] and *Market Network Service Provider* for a *billing period* is the sum of the rates calculated for it under paragraph 3 multiplied by the number of days in the *billing period*.

NEMMCO general fees: administration and other cost component (Part B)

5. For each *financial year* covered by the structure, 30% of NEMMCO's budgeted revenue requirements determined under the Rules (excluding budgeted revenue requirements for FRC, new *declared NEM projects* and the *Participant compensation fund* and less forecast revenue from registration fees and fees for Incremental Services) and the Establishment Receivable are called "administration and other costs" and are allocated to *Market Customers.*

6. The administration and other costs for a *financial year* will be converted to a rate per MWh set on the basis of NEMMCO's estimate of total MWh to be settled in *spot market transactions* by *Market Customers* during that *financial year*. The amount payable by each *Market Customer* for a *billing period* is that rate multiplied by the actual MWh settled in *spot market transactions* for that *Market Customer* in that *billing period*.

NEMMCO FRC fees (Parts C and D)

7. For each *financial year* covered by the structure, NEMMCO's budgeted revenue requirements determined under the Rules for FRC will be allocated to *Market Customers* that are licensed under the laws of a *participating jurisdiction* as a retailer (**Retailers**) and levied in two components as follows:

(a) **FRC establishment component:** the budgeted revenue requirements related to NEMMCO's FRC establishment costs for a *financial year* (including depreciation on establishment assets, pre-operating receivables and interest) will be converted to a rate per MWh set on the basis of NEMMCO's estimate of total MWh to be settled in *spot market transactions* by Retailers during that *financial year*;

[3] For a *non-scheduled generating unit*.

[4] Except Non-Market Non-Scheduled Generators.

(b) **FRC operations component:** the budgeted revenue requirements related to NEMMCO's FRC operating costs for a *financial year* will be converted to a rate per MWh set on the basis of NEMMCO's estimate of total MWh to be settled in *spot market transactions* by Retailers during that *financial year* against *regional reference nodes* within *participating jurisdictions* that have implemented FRC.

8. The amount payable by each Retailer for a *billing period* for each component is the relevant rate multiplied by:

   (a) in the case of the FRC establishment component, the actual MWh settled in *spot market transactions* for that Retailer in that *billing period*; and

   (b) in the case of the FRC operations component, the actual MWh settled in *spot market transactions* (against *regional reference nodes* within *participating jurisdictions* that have implemented FRC) for that Retailer in that *billing period.*

Incremental Services components (Part E)

9. There will be a registration fee of $3,500 per registration application for all new registrations. This will be a one off charge at the time of registration. The registration fee will be escalated for each *financial year* after 30 June 2007 in line with movements in:

   (a) the average CPI figure in respect of the 4 quarters ending on 31 March immediately preceding the *financial year* in which the escalated fee is to apply

   compared to:

   (b) the average CPI figure in respect of the 4 quarters immediately preceding the 4 quarters referred to in paragraph (a).

10. There will be Incremental Services fees that will be charged for the acquisition of Incremental Services.

11. An Incremental Service is a service that, in NEMMCO's opinion, is provided to a Participant or other person where the recipient is receiving some benefit over and above Participants of the relevant class and is:

   - (identifiable) the cost of the service is able to be separately accounted for; and
   - (material) the identified costs in providing the service are material; and
   - (voluntary) the service is provided at the request of the recipient.

   If the Rules contemplate NEMMCO levying a separate fee or charge for a service, that service is likely to be an Incremental Service.

12. Incremental Service fees will be levied on the basis of NEMMCO's assessment of the labour, overheads and other material costs involved in providing the service.

Participant Compensation Fund component[5]

13. For each *financial year* covered by the structure, NEMMCO's budgeted revenue requirements in respect of the *Participant compensation fund* under clause 3.16.1(c) of the Rules (if any) will be allocated to *Scheduled Generators* in respect of their *scheduled generating units* and *Scheduled Network Service Providers* in respect of their *scheduled network services* and levied on the same basis as the allocated costs apportioned to a group of *Generators* and *Market Network Service Providers* under paragraphs 3 and 4, with any necessary changes.

Recovery principles for certain expenditure

14. NEMMCO's expenditure associated with the following items will be recovered on the basis set out below:

    (a) non-capital expenditure associated with FRC establishment prior to February 2002 is being recovered over a 10 year period from 1 July 2003[6];

    (b) capitalised costs associated with the construction of a new control centre will be recovered over a period of 30 years, and capitalised costs associated with the fitout of a new control centre will be recovered over a period of 15 years, by way of depreciation of the relevant assets. A straight-line depreciation method will be used. The costs associated with the acquisition of the land on which a new control centre is located will also be recovered over a period of 30 years on a similar basis. In the case of the new control centre in New South Wales, the recovery periods will commence on 1 July 2006[7].

General

15. In this structure:

    (a) a term that appears *in this style*, has the meaning given in the Rules;

    (b) **"FRC"** means full retail competition;

    (c) **"CPI"** means the Consumer Price Index as published by the Australian Bureau of Statistics (Cat no. 6401.0) for All Groups, Weighted Average of Eight Capital Cities, or if that index ceases to be published, an equivalent index selected by NEMMCO;

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5 The *Participant compensation fund* component will only be applied when there is a funding requirement under clause 3.16.1(c) of the Rules, ie when the fund has been drawn on as a result of a scheduling error and needs to be replenished.

6 Capital expenditure associated with FRC establishment is being recovered through the depreciation of the assets acquired by the capital expenditure over the effective life of the relevant assets in a manner that is consistent with generally accepted accounting principles

7 These costs will be included in NEMMCO's budgeted revenue requirements for general fees for future financial years.

(d) a **"Non-Market Scheduled Generator"** is a *Non-Market Generator* that is also a *Scheduled Generator* and a **"non market scheduled generating unit"** is a *generating unit* that is classified as a *non-market generating unit* and also a *scheduled generating unit*;

(e) a **"Non-Market Non-Scheduled Generator"** is a *Non-Market Generator* that is also a *Non-Scheduled Generator* and a **"non market non scheduled generating unit"** is a *generating unit* that is classified as a *non-market generating unit* and also a *non-scheduled generating unit*;

(f) a *participating jurisdiction* has **"implemented FRC"** when, in NEMMCO's opinion, it becomes possible for any Retailer licensed under the laws of the *participating jurisdiction* to sell electricity to any customer (whatever the size of its load) in respect of a *connection point* located in that jurisdiction; and

(g) all fees exclude GST (as defined in clause 3.15.11A of the Rules).

16. This determination is only in respect of the structure of *Participant fees* provided for under clause 2.11.1 of the Rules. It does not alter or affect fees payable under other provisions of the Rules. NEMMCO's budgeted revenue requirements determined under the Rules for a new *declared NEM project* will be recovered by an additional *Participant fee* determined under clause 2.11.1(bb) of the Rules.

2 Executive Summary

2.1 Structure of Participant fees: criteria

Clause 2.11.1 of the Rules requires NEMMCO to determine the structure of Participant fees that will apply from 1 July 2006. Participant fees are levied on Registered Participants under the Rules to recover NEMMCO's budgeted revenue requirements determined under the Rules, which relate to operating the National Electricity Market (**NEM**).

Under section 50 of the National Electricity Law (**NEL**), NEMMCO is required to exercise its functions efficiently and on a full cost recovery but not for profit basis.

Clause 2.11.1(b) of the Rules contains four key principles that apply in addition to section 50:

(a) the structure of Participant fees should be simple;

(b) the structure of Participant fees should provide for the recovery of NEMMCO's budgeted revenue requirements on a specified basis;

(c) the components of Participant fees charged should be "reflective of the extent to which the budgeted revenue requirements ... involve that Registered Participant" – referred to below as the "reflective of involvement criterion"; and

(d) the Participant fees should not unreasonably discriminate against a category or categories of Registered Participants.

The NEL does not contain an explicit obligation on NEMMCO to apply the NEM objective in performing its functions. That said, the NEM objective is a relevant consideration where NEMMCO has to exercise judgment or discretion in reaching its determination, for example, if there are a number of Participant fee structures that each satisfy the criteria referred to above or the relevant provisions of the Rules are ambiguous.

There is a degree of tension between these principles and they reflect criteria that, far from being clear-cut, are abstractions in respect of which legal, economic and business minds may reasonably differ.

NEMMCO must make the 2006 Fee Determination "afresh". That is, it must freshly consider the application of the relevant criteria above to the facts and analysis available to it at this time. In doing so, however, NEMMCO has had regard to the reasoning and decision of the Second Group[8] and NEMMCO's previous fee determinations, where appropriate.

Since the 2003 Fee Determination was made, the NEL has been amended and the Rules have replaced the National Electricity Code. These changes are taken into account in the discussion of the criteria to be applied by NEMMCO in determining a new structure of Participant fees contained in

[8] A group of 3 legal and economic experts appointed under Chapter 8 of the Code to resolve the dispute under the Code concerning the 2000 Fee Determination.

section 4.4 of this Determination and Report. Although the changes to the regulatory framework have had some impact on the criteria to be applied, the criteria remain very similar to those which NEMMCO applied in previous fee determinations.

NEMMCO is not required by clause 2.11.1 of the Rules to publish the actual level of fees, expressed in dollar terms, at this time. The actual level of Participant fees will not be set until NEMMCO has prepared and published its budget of revenue requirements for the relevant financial year. These budgets are required to be published prior to the commencement of the relevant financial year.

These issues are discussed in section 4 of this Determination and Report.

2.2 Consultation process

NEMMCO undertook a consultation process in determining the new structure of Participant fees.

As part of the process, NEMMCO sought submissions on the new structure of Participant fees and on a draft of this Determination and Report. NEMMCO received five submissions during Stage 1 and three submissions in Stage 2.

NEMMCO has considered all submissions received and has also completed, with the assistance of external advisers, an analysis of the structure of Participant fees.

The submissions are set out in Attachment G, and are discussed in section 5 and Attachment E, of this Determination and Report.

2.3 Analysis of NEMMCO's activities, outputs & costs

In order to have a practical and reasonable basis on which to allocate NEMMCO's budgeted revenue requirements, it is necessary to understand NEMMCO's activities and outputs, and the cost drivers associated with them.

NEMMCO therefore has undertaken a thorough and robust analysis of its costs, activities and outputs. This analysis included surveying NEMMCO staff in order to allocate labour time to NEMMCO's activities and outputs.

NEMMCO has used the 2005/2006 budgets from the May 2005 Statement of Corporate Intent and Budget as the starting point for the cost attribution analysis. There are two relevant budgets in the SCI, one dealing with FRC and the other dealing with general expenses. Some modifications were made to remove the effect of costs that are recovered by other means (such as expenses relating to settlement residue auctions).

As part of this analysis, NEMMCO sought to identify more clearly what might be considered to be the final "outputs" of NEMMCO's activities in an operational sense.

NEMMCO identified a total of 162 reasonably discrete activities undertaken internally by NEMMCO staff on a regular basis. These activities were then categorised into 10 broad, non-FRC, outputs as follows:

(a) power system security;

(b) power system reliability;

(c) market operation;

(d) market settlement (cash transactions and clearing, metering and billing);

(e) prudential supervision;

(f) settlement residue auctions[9];

(g) wholesale market improvement;

(h) information dissemination;

(i) retail market improvement; and

(j) data and system management.

NEMMCO administration has been identified separately.

NEMMCO considers that these 10 broad outputs represent a sufficient level of detail by which to practically inform the development of a fee structure that will satisfy the reflective of involvement criterion. FRC is not included in the analysis, because this "output" is already budgeted for separately by NEMMCO.

The analysis shows that, of NEMMCO's general budgeted revenue requirements, approximately $41 million is attributable to the 10 identified outputs and it is not possible to attribute the balance of approximately $17 million to any of those outputs.

On this basis, NEMMCO considers that 70% of the general portion of its budgeted revenue requirements (excluding FRC and the Establishment Receivable) can be allocated against the outputs identified above, while 30% cannot be readily allocated. (The percentages have been rounded for simplicity.)

This analysis is presented in section 7 of this Determination and Report and the NEMMCO Activity Survey and Cost Analysis contained in Attachment D.

2.4 NEMMCO general costs

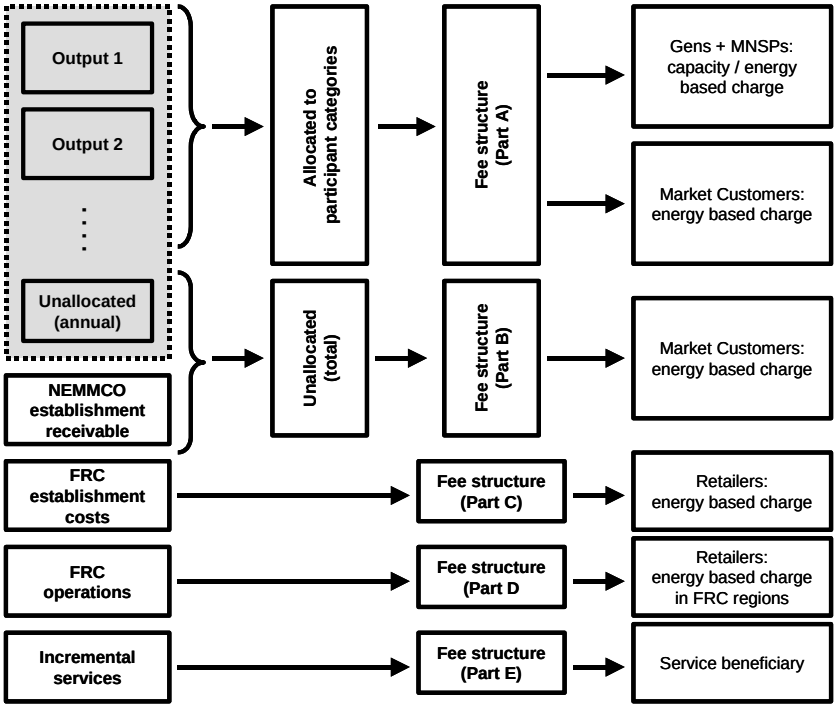
"Allocatable" amount

Using the experience and expertise of its staff and general managers, NEMMCO has considered each of the outputs referred to above, and has formed a view as to the extent of involvement of each category of Registered Participant in the budgeted revenue requirements associated with that output.

[9] Although settlement residue auction services has been included as an output, it will be extracted for the purposes of determining fees, because these costs are recovered separately by way of auction expense fees.

Figure 1 below shows the process NEMMCO has undertaken to allocate outputs to Registered Participants.

Figure 1: Overview of fee structure determination



The following table summarises NEMMCO's views as to the extent of involvement of the various categories of Registered Participant in relation to the outputs identified above.

Allocation of outputs to Participants

Category of Participant	Power System Security	Power System Reliability	Market Settlement	Market Operation	Prudential Supervision	Settlement Residue Auctions	Wholesale Market Improvement	Information Dissemination	Retail Market Improvement	Data & System Management
Market Customers	50%	75%	51%	50%	25%	Not Allocated - recovered separately	50%	50%	100%	50%
Generators and MNSPs *(except for Non-Market Non-Scheduled Generators)*	50%	25%	49%	50%	75%		50%	50%	0%	50%
Total	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%

The analysis underpinning this table is set out in detail in section 8 of this Determination and Report.

NEMMCO is satisfied, on the basis of the experience and expertise of its general managers and staff, that each Participant in these categories is likely to be involved with NEMMCO's costs in relevantly similar ways (but see the discussion below concerning Non-Market Scheduled Generators).

The percentage allocation determined for each Participant category in the case of each output was then applied to the costs attributed to each of those outputs. This is shown in Table 5 of the NEMMCO Activity Survey and Cost Analysis.

As a result of a submission received on the Draft Determination and Report, NEMMCO has further considered the extent of involvement of Non-Market Scheduled Generators in the outputs identified above. NEMMCO has concluded that Non-Market Scheduled Generators are substantially involved in only the power system security, power system reliability and data and system management outputs.

Accordingly, NEMMCO believes it is appropriate to break the "allocatable costs" apportioned to Generators and MNSPs into two pools, one representing the Generators/MNSPs' share of costs related to the power system security, power system reliability and data and system management outputs, and the other representing the Generators/MNSPs' share of costs related to the other outputs. All Generators (except Non-Market Non-Scheduled Generators) and MNSPs would share the costs in the first pool, but only Market Generators and MNSPs would share the costs in the second pool.

As close to two thirds of "allocatable costs" relate to power system security, power system reliability and data and system management (see Table 5 of the NEMMCO Activity Survey and Cost Analysis), NEMMCO believes it is appropriate to set the first cost pool at two-thirds of the "allocatable costs" apportioned to Generators and MNSPs and the second cost pool at one-third of that amount.

NEMMCO, therefore, proposes apportioning 55% of its "allocatable" general budgeted revenue requirements to Market Customers, 30% to Market Generators, Non-Market Scheduled Generators and MNSPs and 15% to Market Generators and MNSPs. (The percentages have been rounded for simplicity.) The Establishment Receivable is attributed to the "unallocatable" amount directly.

Costed allocation on basis of involvement

Participant	$'000's	%
Market Customers	22,642	55.39%
Market Generators, Non-Market Scheduled Generators and MNSPs	12,157	29.74%
Market Generators and MNSPs	6,079	14.87%
Total	40,878	100.00%

TNSPs, DNSPs and Non-Market Non-Scheduled Generators

NEMMCO has not apportioned any of its budgeted revenue requirements to three categories of Participant: TNSPs, DNSPs and Non-Market Non-Scheduled Generators, for the following reasons:

(a) **TNSPs:** The relationship between TNSPs and NEMMCO has two aspects. In some respects, TNSPs may be considered to be involved in NEMMCO activities – for example, the security and integrity of the

equipment of TNSPs is preserved by NEMMCO's power system security activities. TNSPs, however, also provide "services" to NEMMCO that contribute to NEMMCO's ability to manage power system security and perform its other functions. Some of these services are provided to NEMMCO under agreements entered into between NEMMCO and the relevant TNSP. Others are provided as a result of obligations imposed on TNSPs under the Rules. NEMMCO does not believe it is appropriate to allocate any of its budgeted revenue requirements to TNSPs because these two aspects are so intertwined, and the services TNSPs provide significantly contribute to NEMMCO's ability to perform its functions.

(b) **DNSPs:** NEMMCO has only limited interaction with DNSPs in relation to power system security and reliability outputs. It advises a DNSP if the DNSP's network will be affected by load shedding or a system security risk so that the DNSP can manage the consequences. This communication is undertaken by the TNSPs on NEMMCO's behalf. Accordingly, NEMMCO considers that the extent of involvement of DNSPs in those outputs is minor and incidental. Although NEMMCO interacts with DNSPs on retail market improvement activities, that output in the main supports retail competition and the DNSPs' involvement is also only incidental.

(c) **Non-Market Non-Scheduled Generators:** NEMMCO has only marginal interaction with Generators in relation to non market non scheduled generating units.

"Unallocatable" amount

Even after this allocation exercise, there remains a significant proportion of NEMMCO's budgeted revenue requirements (approximately 30% of its general budgeted operating costs, plus the Establishment Receivable) that cannot be readily allocated to particular categories of Registered Participant. Therefore, it is not possible to determine the extent of involvement of different Participants in relation to this "unallocatable" amount.

Section 50 of the NEL requires NEMMCO to operate on a "full cost recovery but not for profit basis". Clause 2.11.1(b)(2) also contemplates that Participant fees should recover the budgeted revenue requirements for NEMMCO. In other words, NEMMCO is required to recover all its costs, and not just those that can be allocated to particular Participants, or categories of Participants, on the basis of the reflective of involvement criterion.

The Allen Consulting Group, in its report, states that:

> *In the circumstances, a reasonable and efficient method for recovering unallocated costs is from end users* via *the Participants that are closest in the electricity supply chain to those end users.*
>
> *This can be achieved by a fee that is levied on Market Customers based on load in the current year. It is reasonable to expect that Market Customers would relatively quickly pass*

the fee onto end users, so that it would be end users, not Market Customers, who would bear the burden of the fee.[10]

This is, of course, the same way in which the "unallocatable" amount is dealt with under the current structure of Participant fees. In their joint submission, NGF and ERAA state that:

The issues and parameters … have not materially changed and thus the ERAA and the NGF believe that there is no requirement to change the current participant fee structure.[11]

Given The Allen Consulting Group's recommendations, and the views expressed by Participants, NEMMCO proposes that this category of costs should be allocated to Market Customers.

This analysis is discussed in detail in section 8 of this Determination and Report and in the NEMMCO Activity Survey and Cost Analysis.

2.5 Incremental Service fees and registration fees

NEMMCO recognises that some of the services it provides are incremental, in that the recipient is receiving some benefit by NEMMCO providing the service over and above other Participants of the relevant class. An example is where NEMMCO has been requested to provide additional bandwidth for access to NEMMCO's market systems.

Where it is practical for NEMMCO to identify that it is doing something specific for a Participant or other parties, and that action causes identifiable and material costs for NEMMCO, NEMMCO will levy fees to recover the incremental costs incurred.

NEMMCO recognises that identifying whether a particular service falls within this category or forms part of the services NEMMCO provides the market generally is not always easy. Given the evolving nature of the market and Registered Participants' needs, it is also not possible to specifically identify every service that falls in this category now.

The fee will be levied on the basis of NEMMCO's assessment of the labour, overheads and other material costs involved in providing the service.

In previous determinations, NEMMCO set a registration fee of $1,700 per registration application for all new registrations. In preparing the NEMMCO Activity Survey and Cost Analysis, NEMMCO considered the costs involved in assessing registration applications, and concluded that the actual labour cost per registration application is approximately $3,655.

The current registration fee of $1,700 (which has been in place since 2000), therefore, does not adequately reflect the time taken to process Participant registration applications.

Accordingly, NEMMCO has decided to set the registration fee at $3,500 per registration application for all new registrations (escalated in line with

[10] Chapter 4.4 of the Allen Consulting report.

[11] NGF and ERAA, Submission to the NEMMCO Structure of Participant Fee Consultation, 28 October 2005, p.1.

movements in the CPI). NEMMCO does not believe that a fee of this magnitude constitutes a material barrier to entry to the NEM.

2.6 Allocation of FRC costs

As discussed above, NEMMCO budgets for FRC separately.

In its Issues Paper, NEMMCO sought comment on the appropriateness of its current cost recovery systems for FRC and B2B costs. NEMMCO currently charges FRC fees separately to other Participant fees, and is recovering the cost of the implementation of B2B communications through those FRC fees. The consensus among the submissions received was that it was appropriate that B2B related costs should be recovered on the same basis as FRC costs.

NEMMCO's FRC and B2B activities and systems serve a reasonably discrete purpose: the provision of services that support the transfer of retail customers between Retailers. That is, in general terms, it is Retailers who are involved in these services.

Participating jurisdictions have adopted different timeframes for the introduction of FRC. New South Wales and Victoria introduced FRC in January 2002. FRC was introduced in South Australia in January 2003 and in the ACT in July 2003. Queensland has recently announced that FRC will be introduced in that State from 1 July 2007. Tasmania has announced that it anticipates implementing FRC in that State from 1 July 2010[12].

Despite the staggered introduction of FRC, NEMMCO's FRC systems have had to be designed and scaled to accommodate FRC in all jurisdictions. That is, the decision by some jurisdictions to implement FRC later than others has not resulted in NEMMCO avoiding any of the capital costs associated with establishing its FRC systems. Rather, all Retailers, irrespective of location, have the option of obtaining customer transfer services that include the functionality and scale required to support FRC.

NEMMCO, therefore, believes that its budgeted revenue requirements for FRC (including B2B) should be allocated to Retailers. As FRC has not yet been implemented in all participating jurisdictions, the FRC operating costs will be allocated to Retailers on the basis of the energy they purchase through the NEM in those participating jurisdictions that have implemented FRC. FRC establishment related costs, however, will be allocated to all Retailers on the basis of the energy they purchase through the NEM in any participating jurisdiction.

This analysis is presented in section 9 of this Determination and Report.

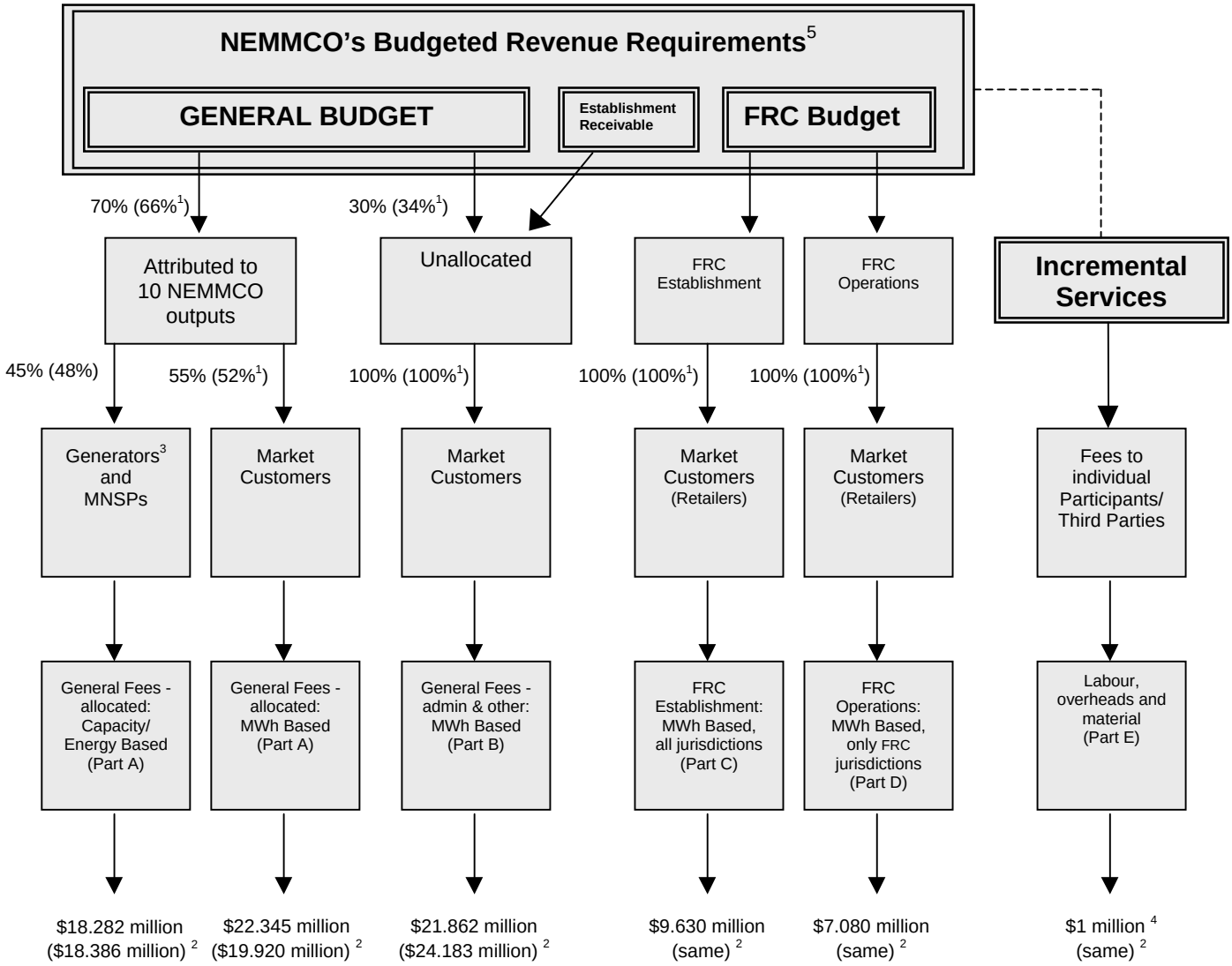
2.7 Proposed structure of Participant fees

The proposed structure of Participant fees for the period after 1 July 2006 is set out in section 1 of this Determination and Report, and is summarised in Figure 2 below.

[12] NEMMCO understands that Tasmania has, however, reserved a final decision on whether retail competition should be extended to the final tranche of customers until an assessment is made of the costs and benefits of doing so.

Figure 2: Summary of New Participant Fee Determination

(The numbers in brackets have been included for comparison purposes)



[1] Equivalent figure for the 2003 Fee Determination.

[2] These figures have been derived using NEMMCO's 2005/2006 budgets from the latest Statement of Corporate Intent. The numbers in brackets show the 2005/2006 budgets applied to the 2003 Fee Determination structure, to enable a comparison of the financial impact of the changes in the proposed fee structure.

[3] Excluding Non-Market Non-Scheduled Generators. Non-Market Scheduled Generators will pay a lower level of fees than Market Generators and MNSPs.

[4] Notional amount only.

[5] If the Participant Compensation Fund is depleted due to a scheduling error, an additional fee will be levied on Scheduled Generators and Scheduled Network Service Providers to replenish the fund.

2.8 Participant fee components

Consistent with the recommendations of The Allen Consulting Group, NEMMCO proposes that there will be the following components of Participant fees:

(a) **NEMMCO general fees: allocated cost component (Part A)[13]:** As discussed above, the portion of NEMMCO's budgeted revenue requirements which is classified as "allocated" will be collected from Market Customers and different categories of Generators[14]/MNSPs in specified proportions. The proportion of allocated costs apportioned to Market Customers will be collected on the basis of MWh settled in spot market transactions in each billing period using a rate set on the basis of forecast total MWh for the current year. Of the proportion of allocated costs apportioned to a category of Generators/MNSPs, 50% will be collected on the basis of MWh of energy scheduled or metered in the previous calendar year, and 50% will be collected on the basis of the higher of the greatest registered capacity and highest notified maximum capacity in the previous calendar year. A generating unit that is classified as both a non market and also a non scheduled generating unit is not taken into account for the purpose of these calculations;

(b) **NEMMCO general fees: administration and other cost component (Part B):** As discussed above, the portion of NEMMCO's budgeted revenue requirements which is classified as "unallocatable" will be collected from Market Customers on the basis of MWh settled in spot market transactions in each billing period using a rate set on the basis of forecast total MWh for the current year;

(c) **NEMMCO FRC fees: FRC establishment cost component (Part C):** The budgeted revenue requirements relating to NEMMCO's FRC establishment related costs will be collected from Retailers on the basis of MWh settled in spot market transactions in each billing period using a rate set on the basis of forecast total MWh for the current year;

(d) **NEMMCO FRC fees: FRC operations component (Part D):** The budgeted revenue requirements relating to NEMMCO's FRC operations will be collected from Retailers on the basis of MWh settled in spot market transactions in each billing period against regional reference nodes in participating jurisdictions that have implemented FRC using a rate set on the basis of forecast total MWh against those nodes for the current year;

(e) **Incremental Services component (Part E):** These fees will be collected on the basis of NEMMCO's assessment of the labour, overheads and other material costs involved in providing the relevant Incremental Service; and

[13] The references to Parts in this Determination and Report are to be read with Figure 1: Overview of fee structure determination.

[14] Except Non-Market Non-Scheduled Generators.

(f) **Participant Compensation Fund component:** The budgeted revenue requirements (if any) in respect of the Participant Compensation Fund will be allocated to Scheduled Generators and Scheduled Network Service Providers and collected on the same basis as NEMMCO general fees: allocated cost component for Generators and MNSPs, with any necessary changes.

These issues are discussed in section 10 of this Determination and Report.

2.9 Recovery principles for certain expenditure

Clause 2.11.1(b) of the Rules contains principles that should be applied for the recovery of particular items of expenditure. In effect, these set out the recovery periods NEMMCO is required to apply in preparing its annual budget of revenue requirements. Special rules apply to establishment costs and declared NEM projects. There are also general rules that apply to other recurrent and capital expenditures.

Establishment costs

Establishment costs are the expenditures incurred by NEMMCO prior to the commencement of the NEM in preparation for its commencement. Establishment costs comprise three main components: depreciation expense, interest on borrowings and the "Establishment Receivable". The Establishment Receivable represents the non-capital expenditure that NEMMCO incurred while setting up the NEM. These costs were separately recorded and capitalised at the commencement of the NEM and are being collected over a 10 year period. As at 30 June 2006, the Establishment Receivable outstanding will be $11.4 million. This will be covered over the first three financial years covered by the new structure at a rate of $4.45 million per year for each of the first two financial years and the remainder in the third financial year. As discussed above, the Establishment Receivable forms part of the "unallocatable amount" (see sections 2.4 and 2.8(b) of this Determination and Report).

FRC

In the 2003 Fee Determination, NEMMCO determined that FRC establishment costs would be recovered over a 10 year period for any capitalised operating costs and up to 5 years (depending on the nature of the capital investment) for any capital investment costs. In practice, the second part of this decision meant that FRC expenditure relating to capital equipment is recovered through the depreciation of the assets acquired by the expenditure over the effective lives of those assets in a manner that is consistent with generally accepted accounting principles.

Since January 2004, NEMMCO has been actively involved in facilitating the development and implementation of systems and procedures to allow the automation of data exchange and reconciliation between Participants. This is known as "B2B". B2B communications are closely related to FRC, and NEMMCO considers that its costs associated with B2B should be recouped through FRC fees as operating expenses – there will be no establishment component for B2B.

New control centre

NEMMCO is building a new control centre for the NEM to replace the existing facility located in New South Wales, which is currently leased. A suitable site has been purchased and the new facility has been specifically designed to meet the NEM's future requirements.

The capital expenditure associated with the project has two components, the costs associated with acquiring the land, and the costs associated with the construction and fitout of the building. NEMMCO expects the new control centre to be in use for approximately 30 years, and the initial fitout is expected to last approximately 15 years.

NEMMCO intends to recover the capitalised costs associated with construction over a period of 30 years from 1 July 2006 and the capitalised costs associated with fitout over a period of 15 years from 1 July 2006, by way of depreciation of the relevant assets. NEMMCO has decided to recover the cost of the land over a period of 30 years from 1 July 2006, consistent with the recovery period for the capitalised costs associated with construction.

The recovery principles for the new control centre were also considered by the Participant Advisory Committee on 14 April 2005. The Committee, which is comprised of senior representatives of the various industry sectors, agreed that the costs of the land and buildings should be recovered over a longer period, namely 30 years. This approach was also reflected in NEMMCO's May 2005 Statement of Corporate Intent and Budget.

These issues are analysed in section 6 of this Determination and Report.

2.10 Duration of structure of fees

A number of competing considerations impact on the optimal period for the new structure of Participant fees. On the one hand, there is an advantage in the predictability and certainty of Participant fees and their structure and, therefore, having the structure apply over a longer period. On the other hand, the reflective of involvement criterion suggests that, as circumstances change, the structure of Participant fees is likely to need adjustment.

The NEM commenced 7 years ago. Operationally, the NEM is now a mature market and there is more experience to draw on in order to allocate costs on the basis of NEMMCO's existing functions.

Given the basis on which NEMMCO has arrived at the proposed new structure of Participant fees, it is likely that a requirement to change that structure will only arise where there is some change in the functions that NEMMCO performs. The Rules now contain a framework for dealing with significant market developments between fee determinations that did not exist before the introduction of the concept of declared NEM projects.

Another consideration is that, in the electricity industry, most pricing determinations made by the national and State regulators in respect of the regulated activities of TNSPs and DNSPs are for five years.

The requirements of the Rules mean that the process of determining a structure of Participant fees is time consuming and expensive for the NEM.

In the submissions received, TransGrid has suggested that the next fee determination should have a duration of 5 years, and the NGF and ERAA believe that the duration should be "at least" 5 years.

Having regard to these competing considerations, NEMMCO believes that a duration of five years for the new structure for Participant fees (ie commencing 1 July 2006 until 30 June 2011) strikes the right balance.

This analysis is presented in section 11 of this Determination and Report.

2.11 Fee structure comparisons

Clause 2.11.1(d) of the Rules requires NEMMCO to consider other fee structures that it thinks are appropriate. Chapter 5 of The Allen Consulting Group report contains an analysis of the fee structures used by other electricity market operators in Australia and around the world, to the extent that it has been possible to obtain the information.

That analysis shows that each market has adopted a structure appropriate to its own regulatory environment and circumstances. While the analysis is interesting, it is not possible to draw any specific guidance for this current determination.

These issues are discussed further in section 12.4 of this Determination and Report.

3 Background

3.1 NEMMCO's role under clause 2.11.1 of the Rules

Participant fees are levied on Registered Participants under the Rules to recover the budgeted revenue requirements of NEMMCO.

Clause 2.11.1 of the Rules requires NEMMCO to determine the structure of Participant fees for such period as NEMMCO considers appropriate.

The current structure of Participant fees was determined in March 2003. At that time, NEMMCO published a report detailing the rationale for the current structure of Participant fees. In making its March 2003 Determination, NEMMCO considered various issues and, in accordance with clause 2.11.1 of the then National Electricity Code (**Code**), developed a structure of Participant fees that would apply until 30 June 2006.

3.2 NEMMCO's Consultative and Decision Making Process

NEMMCO is required to comply with clause 8.9 of the Rules in determining a new structure of Participant fees. Following is an outline of the consultation process.

Process	Date
Notice of First Stage of Rules Consultation issued	13 September 2005
Closing date for submissions received in response to the Notice of First Stage of Rules Consultation	28 October 2005
Publication of the Draft Determination and Report and issue of Notice of Second Stage of Rules Consultation inviting submissions in response to the Draft Determination and Report	22 December 2005
Closing date for submissions received in response to the Draft Determination and Report	17 February 2006
Publication of this Determination and Report	24 March 2006

On 13 September 2005, NEMMCO issued a Notice of First Stage of Rules Consultation to Registered Participants (including Intending Participants) and other interested parties[15] (**Consulted Persons**) regarding the proposed new structure of Participant fees under clause 8.9 of the Rules (**First Stage Notice**), together with an Issues Paper. The purpose of the Issues Paper was to assist Consulted Persons in providing their views to NEMMCO.

Copies of the First Stage Notice and Issues Paper are set out in Attachments A and B. The First Stage Notice and Issues Paper were also circulated widely

[15] That is, persons (including an end user or its representative) who, in *NEMMCO's* opinion, has or identifies themselves to *NEMMCO* as having an interest in relation to the structure of Participant fees and such other persons as NEMMCO considers appropriate.

by way of a NEM Communication and published on NEMMCO's website. A notice was also published in the Australian Financial Review.

The First Stage Notice invited written submissions by 28 October 2005. NEMMCO received 5 submissions in its first round of consultations (**Stage 1**). All submissions were published on the NEMMCO website. The submissions are also reproduced in Attachment G.

NEMMCO also scheduled a forum on 11 November 2005 to which all Consulted Persons were invited. None of the Stage 1 submissions requested a meeting (as they were entitled to do under clause 8.9(e) of the Rules). NEMMCO considered the submissions received, and concluded that it was not desirable or necessary to hold meetings with Consulted Persons at that stage. NEMMCO, therefore, sent an email to each Consulted Person asking whether they wished to proceed with the initial forum. As no Consulted Person requested that the initial forum proceed in response to the email, the forum was not held.

On 22 December 2005, NEMMCO issued a Draft Determination and Report on the Structure of Participant Fees under clause 2.11 of the National Electricity Rules (**Draft Determination and Report**), together with a Notice of Second Stage of Rules Consultation (**Second Stage Notice**) to Consulted Persons. A copy of the Second Stage Notice is set out in Attachment C. The Second Stage Notice was also circulated widely by way of a NEM Communication and published on NEMMCO's website.

The Second Stage Notice invited written submissions on the Draft Determination and Report on the Structure of Participant Fees by 17 February 2006. NEMMCO received three submissions in this second round of consultations (**Stage 2**). These submissions were published on the NEMMCO website. The submissions are also reproduced in Attachment G.

NEMMCO also scheduled a public forum on 24 February 2006 to which Consulted Persons were invited. None of the Stage 2 submissions requested a meeting. NEMMCO considered the submissions received, and concluded that it was not necessary to hold the public forum. NEMMCO, therefore, sent a NEM Communication on 20 February 2006 asking whether a Registered Participant, interested party or other person wished to proceed with the public forum. As no-one requested that the public forum proceed in response to the NEM Communication, the forum was not held.

NEMMCO considered all of the issues that were raised in the submissions. The key points raised in the submissions are summarised in section 5 of this Determination and Report. NEMMCO's response to those key points is set out in section 5, or, where appropriate, another section of this Determination and Report.

3.3 Advisers

In addition to consulting with Consulted Persons, NEMMCO has also been advised by external experts. NEMMCO engaged the services of economic adviser The Allen Consulting Group (**Allen Consulting**), Tony Snell as legal advisor, and Dench McClean Carlson as probity auditors. Allen Consulting

produced a report (**Allen Consulting report**), which is set out in Attachment F.

3.4 NEMMCO Participant Fee Working Group

NEMMCO established a NEMMCO Participant Fee Working Group (**Working Group**), the members of which included NEMMCO officers and NEMMCO advisers. The Working Group met periodically to co-ordinate the process of reviewing and developing the draft fee structure in accordance with the consultation process.

NEMMCO required the members of the Working Group to declare to NEMMCO, on a continuing basis, matters that could give rise to a perception of a conflict of interest in order that NEMMCO could determine whether or not such a conflict arose. No relevant conflicts have been identified.

4 Criteria for structuring fees

4.1 Introduction

The NEM is governed by the NEL and the Rules that are made under the NEL, and also have the force of law[16].

Section 50 of the NEL requires NEMMCO to perform the functions detailed in section 49 "efficiently and on a full cost recovery but not for profit basis".

The determination as to the structure of Participant fees appears in the context of clauses 2.11.1 to 2.11.3 of the Rules. These clauses operate to:

(a) require NEMMCO to develop, review and publish the structure of Participant fees according to certain rules – clause 2.11.1 of the Rules;

(b) require NEMMCO to determine its budgeted annual revenue requirements according to certain rules – clause 2.11.3 of the Rules; and

(c) empower NEMMCO to recover the budgeted revenue requirements by charging Registered Participants in accordance with the structure of Participant fees – clause 2.11.2 of the Rules.

Clause 2.11.1 of the Rules provides:

(a) *NEMMCO* must develop, review and publish, in consultation with *Registered Participants* and *interested parties* and such other persons as *NEMMCO* thinks appropriate, in accordance with the *Rules consultation procedures*, the structure (including the introduction and determination) of *Participant fees* for such periods as *NEMMCO* considers appropriate.

(b) The structure of *Participant fees* must, to the extent practicable, be consistent with the following principles:

(1) the structure of *Participant fees* should be simple;

(2) *Participant fees* should recover the budgeted revenue requirements for *NEMMCO* determined under clause 2.11.3 on a basis where:

(i) recurring expenditure requirements and payments are recovered in the year of expenditure or payment (or the following year, should there be a revenue shortfall);

(ii) capital expenditures (incurred after *market commencement*) are recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles;

(iii) establishment costs in the nature of:

(A) all expenditure (that is not in the nature of capital expenditure) incurred by, and depreciation and amortisation charged to, *NEMMCO* prior to *market commencement*, to the extent that the expenditures have not been funded by the *participating jurisdictions*, are recovered over a period of 10 years from *market commencement*; and

[16] Section 9 of the NEL.

(B) **[Deleted]**

(C) capital expenditure incurred by *NEMMCO* before *market commencement*, to the extent that the expenditure has not been funded by *participating jurisdictions* or recovered under clause 2.11.1(b)(2)(iii)(A) as depreciation or amortisation, is recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles; and

(iv) notwithstanding clauses 2.11.1(b)(2)(i), (ii) and (iii), expenditure incurred by, and depreciation and amortisation charged to, *NEMMCO* associated with a *declared NEM project* are recovered from the start date and over the period determined for that *declared NEM project* under clauses 2.11.1(bb) or 2.11.1(bd). Amounts associated with a *declared NEM project* determined in accordance with this clause are to be recovered through an additional *Participant fee* determined in accordance with clauses 2.11.1(bb) or 2.11.1(bd) until the next general determination of all *Participant fees* is made under clause 2.11.1(a);

(3) the components of *Participant fees* charged to each *Registered Participant* should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* involve that *Registered Participant*;

(4) *Participant fees* should not unreasonably discriminate against a category or categories of *Registered Participants*; and

(5) the fixed component of *Participant fees* for a *Market Customer* who:

(i) is registered with *NEMMCO* solely for the purpose of providing *market ancillary services*; and

(ii) does not classify any of its *market loads* as a *scheduled load*,

may be zero.

(ba) *NEMMCO* may determine any of the following projects to be a *declared NEM project*:

(1) a major development to the *market*;

(2) a major change to a function, responsibility, obligation or power of *NEMMCO* under the *Rules*; or

(3) a major change to any of the computer software or systems which *NEMMCO* uses in the performance of any of its functions, responsibilities, obligations or powers under the *Rules*.

(bb) When *NEMMCO* determines a project to be a *declared NEM project* under clause 2.11.1(ba), it must also determine the start date for recovery and the period or periods over which recovery will occur for the *declared NEM project*. *NEMMCO* must also determine the structure of an additional *Participant fee* to be used in the recovery of costs associated with a *declared NEM project* until the next general determination of all *Participant fees* is made under clause 2.11.1(a).

(bc) In making determinations under clauses 2.11.1(ba) and (bb), *NEMMCO* must comply with the *Rules consultation procedures*.

(bd) The introduction and facilitation of full retail competition is taken to have been determined to be a *declared NEM project* under clause 2.11.1(ba) and *NEMMCO* will be entitled to recover through *Participant fees* expenditure incurred by, and depreciation and amortisation charged to, *NEMMCO* in respect of full retail

competition. The period or periods over which recovery will occur for this *declared NEM project* will be determined by *NEMMCO* using the *Rules consultation procedures.* If any amounts associated with the introduction and facilitation of full retail competition are to be recovered prior to the next general determination of all *Participant fees* under clause 2.11.1(a), such recovery must be through an additional *Participant fee* determined using the *Rules consultation procedures.*

(c) The components of the *Participant fees* may include, but are not limited to:

(1) registration fees, comprising an annual fee payable by each person for each *Registered Participant* category in which they are registered;

(2) *ancillary service fees*, to recover *NEMMCO's* budgeted revenue requirements in relation to its procurement of *non-market ancillary services*;

(3) *power system* operations fees, to recover *NEMMCO's* budgeted revenue requirements in relation to its *power system* operation activities described in clause 2.11.3(b)(2);

(4) *metering* fees to recover *NEMMCO's* budgeted revenue requirements for the collection, storage and processing of *metering data*;

(5) billing and *settlements* fees, to recover *NEMMCO's* budgeted revenue requirements as described in clause 2.11.3(b)(4); and

(6) administration fees, to recover the remainder of *NEMMCO's* budgeted revenue requirements;

and each component of the *Participant fees* may take into account adjustments which may be appropriate in light of the matters described in clauses 2.11.3(b)(7) or (8).

(d) In undertaking the process described in clause 2.11.1(a) *NEMMCO* must consider other fee structures in existence which it thinks appropriate for comparison purposes.

(e) *NEMMCO* must publish to *Registered Participants* and to such other persons as *NEMMCO* thinks appropriate, the structure of *Participant fees* determined, the methods used in determining the structure and an assessment of the extent to which the structure complies with the principles set out in clause 2.11.1(b) at least 3 months prior to the implementation of the structure.

Clause 2.11.1 of the Rules is substantially the same as the equivalent clause in the Code.

There was a dispute under the Code concerning the structure of Participant fees determined by NEMMCO for the period 1 July 2000 to 30 June 2003 (**2000 Fee Determination**). The dispute was resolved by a group of three legal and economic experts (known as the **Second Group**) appointed under Chapter 8 of the Code. The 2000 Fee Determination and the substantive issues in the dispute are summarised in the Determination of the Structure of Participant Fees under Clause 2.11 of the National Electricity Code dated 26 March 2003 (**2003 Fee Determination**). In their decision, the Second Group made a number of comments on the relevant provisions of the Code.

The 2003 Fee Determination sets out NEMMCO's interpretation of clause 2.11.1 of the Code as at the time that determination was made.

NEMMCO must determine the structure of Participant fees "afresh". That is, it must freshly consider the application of the criteria in clause 2.11.1 of the Rules and the NEL to the facts and analysis available to it at this time. In

doing so, however, NEMMCO has had regard to the reasoning and decision of the Second Group and its previous determinations under clause 2.11.1 of the Code, where appropriate.

4.2 Recent changes to the framework within which NEMMCO operates

Since the 2003 Fee Determination was made, the NEL has been amended[17] and the Rules replaced the Code. The key changes that might impact on this determination are as follows:

(a) the provisions of the Code that set out the lists of diverse Code and Market Objectives and NEMMCO Objectives do not appear in the Rules.

(b) the NEL now includes an "omnibus" National Electricity Market objective, replacing the previous lists of Code and Market Objectives. The NEM objective provides:

> *The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.*[18]

(c) NEMMCO's functions in respect of the NEM now appear in the NEL. These include:

> *(a) to operate and administer, in accordance with this Law and the Rules, the wholesale exchange; and*
>
> *(b) to promote the development and improve the effectiveness of the operation and administration of the wholesale exchange; and*
>
> *(c) to register persons as Registered participants in accordance with this Law and the Rules or otherwise in accordance with the Rules; and*
>
> *(d) to exempt certain persons from being registered as Registered participants; and*
>
> *(e) to maintain and improve power system security; and*
>
> *(f) to undertake the coordination of the planning of augmentations to the national electricity system; and*
>
> *(g) any other functions conferred on it under this Law or the Rules.*[19]

NEMMCO must exercise those functions in accordance with the NEL and the Rules[20].

17 The National Electricity (South Australia) (New National Electricity Law) Amendment Act 2005 made the 2005 changes to the NEL.

18 Section 7 of the NEL.

19 Section 49(1) of the NEL.

20 Section 49(2) of the NEL.

(d) NEMMCO now has a duty under the NEL to:

> *perform a function referred to in section 49 efficiently and on a full cost recovery but not for profit basis.*[21]

Previously, NEMMCO's objectives under the Code had been:

> *(a) to establish and conduct the national electricity market efficiently in accordance with the Code on a self funding/break even basis;*
>
> *(b) to promote the ongoing development of, and changes to, the national electricity market with the objective of continually improving its efficiency; and*
>
> *(c) to undertake responsibility for co-ordination of power system planning in relation to the national electricity market as specified in Chapter 5 of the Code.*[22]

(e) the Rules now clearly constitute law[23], and the principles of statutory interpretation apply.

These changes are taken into account in the discussion of the criteria to be applied by NEMMCO in determining a new structure of Participant fees contained in section 4.4 of this Determination and Report. Although the changes to the regulatory framework have had some impact on the criteria to be applied, the criteria remain very similar to those which NEMMCO applied in previous fee determinations.

4.3 What NEMMCO must determine under clause 2.11.1 of the Rules

Clause 2.11.1 of the Rules requires NEMMCO to determine the structure of Participant fees.

Determining a Participant fee structure involves a determination of "who" will pay Participant fees and "how", or in what manner, those fees will be calculated. A structure of Participant fees must be published at least three months prior to its implementation.

NEMMCO is not required by clause 2.11.1 of the Rules to publish the actual level of fees, expressed in dollar terms, at this time. The actual level of Participant fees will not be set until NEMMCO has prepared and published its budget of revenue requirements for the relevant financial year. These budgets are required to be published prior to the commencement of the relevant financial year. Following the publication of these budgets NEMMCO will publish an annual fee schedule that sets out the level of fees, consistent with the structure determined by NEMMCO.

21 Section 50 of the NEL.
22 Clause 1.6.2 of the Code.
23 Section 9 of the NEL.

4.4 Criteria for structure

4.4.1 Introduction

The development, review and publishing of a structure of Participant fees is a function[24] conferred on NEMMCO under the Rules, and referred to in section 49 of the NEL. Section 49(2) of the NEL provides that "NEMMCO must exercise the functions referred to in this section in accordance with this Law and the Rules".

Under section 50 of the NEL, NEMMCO is required to exercise "a function referred to in section 49 efficiently and on a full cost recovery but not for profit basis".

Clause 2.11.1(b) of the Rules contains four key principles that apply in addition to section 50:

(a) the structure of Participant fees should be simple;

(b) the structure of Participant fees should provide for the recovery of NEMMCO's budgeted revenue requirements on a specified basis;

(c) the components of Participant fees charged should be "reflective of the extent to which the budgeted revenue requirements ... involve that Registered Participant"; and

(d) the Participant fees should not unreasonably discriminate against a category or categories of Registered Participants.

Neither the NEL, nor the Rules, expressly indicate that any one or more of these principles should have greater weight than the others. Where it is not "practicable" for NEMMCO to satisfy all of the principles in clause 2.11.1 of the Rules, or satisfy them all to an equal degree, NEMMCO is permitted, by the language of the clause, to adopt a structure that is not equally "consistent" with each of these principles.

In the 2000 Fee Determination dispute, the Second Group observed:

> *..there is a degree of tension between the principles in clause 2.11.1(b). For example, the principle that the structure of participant fees should be simple does not sit entirely easily with the third principle that the fee components should be reflective of Code Participants' involvement: there may be a trade off between simplicity and precise allocation of fees.*[25]
>
> *It is important to stress that not only is the language of the principles in Clause 2.11.1(b) expressed in exhortatory language, but the principles themselves reflect criteria ("simple", "reflective of involvement" and "not unreasonably discriminate") which, far from being clear-*

[24] "Function" includes "duty" (see clause 10 of Schedule 2 of the NEL), that is the behaviour due by moral or legal obligation (the New Shorter Oxford English Dictionary). Under clause 2.11.1(a) of the Rules, NEMMCO "must" develop etc the structure of Participant fees.

[25] Decision of Second Group on Amended Dispute Reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraph 5.13.

cut, are abstractions as to which legal, economic and business minds may reasonably differ.[26]

These criteria are discussed in the remainder of this section.

4.4.2 Efficiency and full cost recovery

Under section 50 of the NEL, NEMMCO is required to exercise a function "efficiently and on a full cost recovery but not for profit basis".

NEMMCO's duty under section 50 of the NEL will clearly be relevant when NEMMCO prepares its budgets of revenue requirements under clause 2.11.3 of the Rules. It is also relevant, however, in the process of developing, reviewing and publishing fee structures under clause 2.11.1 of the Rules.

In this context, the statutory duty could be interpreted as simply requiring NEMMCO to go about its process of developing, reviewing and publishing fee structures in an "efficient" way and recover its costs of doing so (ie run a tight and cost-effective process in accordance with the Rules). Given that a fee determination cuts across all of NEMMCO's functions, however, NEMMCO considers that the NEL requires NEMMCO to consider the impact of the determination in light of its statutory duty in addition to running an efficient process. How NEMMCO recovers the costs of performing a function is relevant to assessing how "efficiently" NEMMCO has performed that function.

In other words, a fee structure must itself be consistent with NEMMCO acting efficiently and on a full cost recovery but not for profit basis. The New Shorter Oxford English Dictionary (relevantly) defines "efficient" as follows:

Effective, producing the desired result with the minimum wasted effort; (of a person) capable, competent,

and "efficiently" as:

in an efficient manner, effectively.

As described in chapter 3 of the Allen Consulting report (a copy of which is contained in Attachment F), there are three types of economic efficiency: allocative efficiency, productive (or technical) efficiency and dynamic efficiency. The link between section 50 of the NEL and the NEM objective is productive efficiency[27]. Productive efficiency is attained when firms produce goods and services for the minimum cost, which implies that the lowest-cost combination of society's resources is used and the best technology is employed. The "efficiently" component of NEMMCO's statutory duty can be interpreted as prescribing, in economists' language, an objective of productive efficiency for NEMMCO in respect of its own operations.

The relevance of productive efficiency to NEMMCO's determination is that some structures of Participant fees are more likely than others to lead to NEMMCO conducting its own operations in a productively efficient manner, or

[26] Decision of Second Group on Amended Dispute Reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraph 5.14.

[27] See chapter 3.2 of the Allen Consulting report. All types of economic efficiency (productive, allocative and dynamic) described in the Allen Consulting report may need to be considered as a result of NEM objective (see section 4.4.7).

more likely to discipline the demands made on NEMMCO by Registered Participants. For example, as described in the Allen Consulting report, if Participant fees are set on the basis of NEMMCO's average costs, this will place no bound on the amount of services provided by NEMMCO, or the cost of producing them – the costs will simply be passed on as higher Participant fees (to the extent that this is possible)[28].

4.4.3 Simplicity

Clause 2.11.1(b)(1) of the Rules provides that the structure of Participant fees should be simple. As "simple" is not defined in the Rules, it must be given its ordinary meaning as understood in the context of clause 2.11 of the Rules. The New Shorter Oxford English Dictionary's definition of "simple" (in this context) is: "not complicated or elaborate" and "plain, unadorned". Whether a fee structure fits these definitions is largely a matter of judgement.

As discussed in the Allen Consulting report, there is a wide range of possible fee structures. There is no single identifiable point where "simple" becomes "complicated".

It is clear from this provision that a certain degree of complexity was envisaged in that the structure of Participant fees may involve several components and budgeted revenue consists of several elements. The structure of Participant fees need not demonstrate absolute simplicity.

As noted in the Allen Consulting report:

> *… the* simplest *fee structures are unlikely to be consistent with the other criteria. However, it is possible to find fee structures that, while consistent with the other criteria, are* relatively simple*, in comparison to alternative structures.*[29]

Further, NEMMCO considers that the use of the word "simple" in this context also involves a degree of transparency.

4.4.4 Basis for recovering budgeted revenue requirements

Clauses 2.11.1(b)(2)(i) to (iv) of the Rules provide that Participant fees should recover budgeted revenue requirements on a specific basis in respect of recurring and capital expenditure, establishment costs and declared NEM projects.

The budgeted revenue requirement for which fees are to be recovered must be calculated under clause 2.11.3 of the Rules. The main requirements are that the budget must take into account and separately identify nine projected revenue requirements. These separate revenue requirements do not need to be reflected in different components of any fee structure, but in total must be recovered.

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[28] The link between productive efficiency as it relates to NEMMCO and wider market efficiency (which may need to be considered as a result of the NEM objective – see section 4.4.7) is that these higher NEMMCO fees may retard investment, or if they are passed on to consumers as higher charges, may reduce the consumption of electricity, both outcomes being inconsistent with economic efficiency.

[29] Chapter 3.2 of the Allen Consulting report.

4.4.5 Reflective of involvement

Clause 2.11.1(b)(3) of the Rules provides that the components of Participant fees charged to each Registered Participant "should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* involve that Participant".

In the 2000 Fee Determination dispute, the Second Group observed that:

> *The pivotal principle of "reflective of extent of involvement" does not have a specialised meaning in the discourse of economics. It is consistent with the economic notion of 'user pays' but as a matter of ordinary language, it may properly be construed as indicating a degree of correspondence (between NEMMCO and its costs and participants) without connoting identity. Taking into account the language of the whole clause we reject the contention that it must involve a precise degree of correspondence ...*
>
> *although the Code principle speaks of each Code Participant in the singular, it was entirely appropriate for NEMMCO to conclude that where fixed and common costs were involved it was likely to be the case that multiple Code participants were involved with NEMMCO costs in relevantly similar ways.*[30]

In its report, Allen Consulting states that:

> *… a reasonable economic interpretation might be that budgeted revenue requirements are reflective of the extent of the involvement of a Participant to the extent that those revenue requirements are given rise to, or caused by, that Participant's presence in the market.*[31]

NEMMCO's analysis and experience shows that there are categories or classes of Registered Participants that share certain characteristics that mean that the way in which they interact with NEMMCO is likely to have the same or similar cost implications for NEMMCO. Where it is practical for NEMMCO to identify costs that are fixed or common in nature that can reasonably be allocated to a class or classes of Participants that share characteristics such that their involvement with NEMMCO's outputs is likely to have the same or similar cost implications, it will seek to do so.

In determining whether the extent to which the budgeted revenue requirement relating to a particular output involves a class of Registered Participant, NEMMCO relies on the experience and expertise of its general managers and staff, and considers factors such as the degree to which the class of Registered Participant:

(a) interacts with NEMMCO in relation to the output;

(b) uses the output;

(c) receives the output; and

(d) benefits from the output.

30 Decision of Second Group on Amended Dispute Reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraphs 5.17 and 5.19.

31 Chapter 3.2 of the Allen Consulting report.

4.4.6 Unreasonably discriminate

Clause 2.11.1(b)(4) of the Rules states that Participant fees should not unreasonably discriminate against a category or categories of Registered Participants.

In its 2000 Fee Determination, NEMMCO adopted the following definition of discriminate:

> *Discriminate means to treat people or categories of people differently or unequally. Discriminate also means to treat people, who are different in a material manner, in the same or identical fashion. Further, "discriminate against" has a legal meaning which is to accord "different treatment … to persons or things by reference to considerations which are irrelevant to the object to be attained".* [32]

Where a degree of discrimination between categories of Registered Participants is necessary or appropriate to achieve consistency with the other principles in clause 2.11.1(b) of the Rules, or the NEL, the discrimination will not be "unreasonable".

The Second Group did not find fault with this approach and it made the following observations:

> *At the onset two observations should be made about Clause 2.11.1(b)(4) of the Code…They are:*
>
> *(1) the principle is to be applied to the extent practicable; and*
>
> *(2) it is only unreasonable discrimination that offends.* [33]

4.4.7 NEM objective

The NEL does not contain an explicit obligation on NEMMCO to apply the NEM objective in performing its functions. That said, the NEM objective is clearly a relevant consideration where NEMMCO has to exercise judgment or discretion in reaching its determination, for example, if there is a number of Participant fee structures each of which can satisfy the criteria referred to in sections 4.4.2 to 4.4.6, or where the relevant provisions of the Rules are ambiguous.

In other words, where there are alternative Participant fees structures that each satisfy the criteria referred to above, NEMMCO will adopt the structure that best satisfies the NEM objective, that is to:

> *promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system.*[34]

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32 2000 Fee Determination, p 14.

33 Decision of Second Group on Amended Dispute Reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraph 7.3.

34 Section 7 of the NEL. NEMMCO also adopted a similar approach in the 2000 and 2003 Fee Determinations. In those determinations, NEMMCO adopted, as a guiding principle, the proposition that, if there are a number of Participant fee structures that satisfy the criteria in the Rules, NEMMCO should adopt the structure that is most likely to foster economically efficient outcomes in the NEM.

The Second Reading Speech to the National Electricity (South Australia) (New National Electricity Law) Amendment Bill 2005[35] makes it clear that the NEM objective is an economic concept and should be interpreted as such. The Speech gives an example that investment in and use of electricity services will be efficient when services are supplied in the long run at least cost, resources, including infrastructure, are used to deliver the greatest possible benefit and there is innovation and investment in response to changes in consumer needs and productive opportunities. The Speech goes on to state that the long term interests of consumers of electricity requires the economic welfare of consumers, over the long term, to be maximised. If the NEM is efficient in an economic sense, the long term economic interests of consumers in respect of price, quality, reliability, safety and security of electricity services will be maximised. Applying an objective of economic efficiency recognises that, in a general sense, the NEM should be competitive, that any person wishing to enter the market should not be treated more, or less, favourably than persons already participating, and that particular energy sources or technologies should not be treated more, or less, favourably than others.

Chapter 3 of the Allen Consulting report analyses various structures of Participant fees in light of the NEM objective of promoting efficient investment in, and use of, electricity services.

Allen Consulting notes that it should be borne in mind that the level of NEMMCO's fees is very small relative to industry turnover and so the material effect of NEMMCO's fees on industry efficiency is unlikely to be significant[36].

Allen Consulting states there are three types of economic efficiency: allocative efficiency, productive (or technical) efficiency and dynamic efficiency.

In the context of NEMMCO's Participant fees, Allen Consulting finds that:

> *a fee structure that promotes allocative efficiency will be one that least distorts prices in the end-user markets for electricity. For this reason, amongst others, past fee structures have included a component levied on Generators based on their MW capacity, as this is a fixed charge that is not directly related to the amount of electricity produced (or consumed).*
>
> *A fee structure that promotes productive efficiency is one that places some discipline on NEMMCO's costs. A fee structure that Participants are not simply able to pass on to their customers would create such a discipline, since Participants would be motivated to ensure that NEMMCO operates at minimum cost (for a given level of service).*[37]
>
> *…*
>
> *A fee structure consistent with dynamic efficiency is one that promotes, or at least does not significantly impede, innovation and investment in the industry. This objective will be satisfied by a fee structure that is consistent with the criteria set out in clause 2.11.1(b) of the Rules – a fee structure that is simple, reflects the involvement of Participants and does not unreasonably discriminate between them should not have any negative effects on*

35 By virtue of clause 8 of Schedule 2 to the NEL, the Second Reading Speech can be used in some cases to assist in the interpretation of the Law.

36 See chapter 3.2 of the Allen Consulting report.

37 See also the discussion in section 4.4.2 of this Determination and Report.

investment and innovation in the industry as a whole, nor distort investment and innovation incentives within the industry; for example, investment in different types of generation[38].

4.5 Fee structure comparisons

Clause 2.11.1(d) of the Rules requires NEMMCO to consider other fee structures that it thinks are appropriate. NEMMCO believes fee structures used in other power exchanges and by other independent system operators around the world should be considered. These are discussed in section 12.4 of this Determination and Report.

[38] Chapter 3.2 of the Allen Consulting report.

5 Consideration of Submissions

5.1 List of submissions received

NEMMCO received 5 submissions in response to the First Stage Notice. Following is a list of respondents:

Respondent	Participant Type or other Role
National Generators' Forum (NGF) & Energy Retailers Association of Australia Inc. (ERAA)	Generators' and Retailers' Associations, representing 30 organisations in total
United Energy Distribution Pty Ltd (UED)	Distribution Network Service Provider
Citipower Pty (Citipower) & Powercor Australia Ltd (Powercor)	Distribution Network Service Providers
SPI Electricity Pty Ltd (trading as SP AusNet) (SP AusNet)	Distribution and Transmission Network Service Providers
TransGrid	Transmission Network Service Provider

All of these submissions were published on NEMMCO's website before the Draft Determination and Report was released and are reproduced in Attachment G.

NEMMCO received three submissions in response to the Second Stage Notice. Following is a list of respondents:

Respondent	Participant Type or other Role
Marubeni Australia Power Services Pty Limited (Marubeni)	Non-Market Scheduled Generator
Ergon Energy Pty Ltd (Ergon Energy)	Market Customer (and other categories)
AGL Electricity Limited (AGL)	Market Customer (and other categories)

All of these submissions were published on NEMMCO's website before this Determination and Report was released and are reproduced in Attachment G.

Attachment E details, for each Consulted Person, each issue raised and refers to NEMMCO's response.

5.2 Material issues raised by Consulted Persons

Consulted Persons raised the issues detailed in the following table. The table also indicates where in this Determination and Report each issue is addressed.

Issue No.	Issue	Raised by	Section in which issue is addressed
1	Whether NEMMCO should alter the current Participant fee structure	NGF & ERAA UED	5.3
2	FRC Fees	UED SP AusNet AGL	6.3, 9
3	B2B Fees	NGF & ERAA UED SP AusNet	6.3, 9
4	Application of NEL & Rules, and Interpretation of clause 2.11.1(b) of the Rules	TransGrid	4
5	Imposition of Participant fees on NSPs	UED Citipower & Powercor SP AusNet TransGrid	5.4 and 8.2.2
6	Recovery of costs of new control centre	NGF & ERAA	6.4
7	Recovery of fees specifically for the benefit of a specified Registered Participant	NGF & ERAA	8.5
8	Recovery of fees for activities that do not directly support NEMMCO's statutory functions	NGF & ERAA	5.5
9	Length of Determination	NGF & ERAA TransGrid	11
10	Level of Participant fees payable by Non-Market Scheduled Generators	Marubeni	8.2.4
11	Proportion of NEMMCO's budgeted revenue requirements that are attributable	Ergon Energy	5.6 and 7.4.2

5.3 Whether NEMMCO should alter the current Participant fee structure

In their joint submission, NGF and ERAA state that:

> *The issues and parameters … have not materially changed and thus the ERAA and the NGF believe that there is no requirement to change the current participant fee structure*.[39]

[39] NGF and ERAA Submission, p.1.

In a similar vein, the UED submission states that:

> *Given the push to national reform and possible convergence of gas and electricity, UED does not believe that the structure of the participant fees should be further complicated by the addition of any new categories.*[40]

NEMMCO is required by clause 2.11.1 of the Rules to review the structure of Participant fees in light of the upcoming expiry of the current structure. In doing so, NEMMCO is required to consider the matter afresh in light of the current circumstances.

As noted in section 4.2 of this Determination and Report, there have been developments in the NEM since March 2003. In addition, the experience of the last three years has shown that there are some changes in the extent of NEMMCO's involvement with Registered Participants in some areas.

5.4 Imposition of Participant fees on NSPs

The submissions from UED, Citipower and Powercor, SP AusNet and TransGrid all supported the current structure to the extent that it did not impose Participant fees on network service providers.

For example, TransGrid commented that:

> *TransGrid and other TNSPs are, and remain, minimal users of NEMMCO's systems, such as the Energy Market Settlements and Energy Market Dispatch systems. TransGrid and other TNSPs also provide various services to NEMMCO, (including information to help maintain a safe and secure power system, that ultimately benefits all Registered Participants and the long term interests of consumers) as well as responding to System Security directions, providing voltage and network control functions, and the provision of the facilities to convey signals from market systems to generator controls.*[41]

This issue is generally considered in section 8.2.2 of this Determination and Report.

Each of UED, Citipower and Powercor and SP AusNet made the point that if a fee was imposed on them they would not be able to pass it on. As the combined Citipower and Powercor submission stated:

> *The revenues of these businesses are regulated … The Essential Services Commission of Victoria … has not included provision for NEMMCO fees and the businesses will have no opportunity to recover the costs of such fees during the next regulatory period.*[42]

While this may be correct during the period covered by a particular pricing determination, the inability to pass on costs during the current regulatory period is not one of the criteria NEMMCO is required to apply in determining the structure of Participant fees. NEMMCO also understands that there may also be Retailers who face a similar issue in relation to some categories of customers in particular jurisdictions.

40 UED, Submission to the NEMMCO Structure of Participant Fee Consultation, 28 October 2005, p.1.

41 TransGrid, Submission to the NEMMCO Structure of Participant Fee Consultation, 28 October 2005, p.1.

42 Citipower and Powercor, Submission to the NEMMCO Structure of Participant Fee Consultation, 28 October 2005, p.1.

That said, NEMMCO concluded, after applying the reflective of involvement criterion, that the main categories of Participant fees should not be levied on NSPs – see section 8.2.2 of this Determination and Report.

In its submission, TransGrid stated:

> *TNSPs can be categorised as a discrete class of Registered Participant for the purpose of levying Participant fees…TNSPs provide information and services to NEMMCO and receive no benefit from NEMMCO's activities or outputs. Levying Participant fees on categories of Registered Participants other then TNSPs does* not *constitute discrimination. NEMMCO is not discriminating when it treats different entities differently.* [43]

NEMMCO agrees with these comments.

5.5 Recovery of fees for activities that do not directly support NEMMCO's statutory functions

In their joint submission, NGF and ERAA stated that:

> *… ERAA and the NGF consider that costs associated with new activities of NEMMCO, that is activities that do not directly support NEMMCO's functions under the National Electricity Law and National Electricity Rules, should not be recovered from participants through market fees.*[44]

Participant fees are clearly designed to recover the budgeted revenue requirements of NEMMCO for carrying out its functions and responsibilities under the NEL and the Rules. Under the Rules, NEMMCO cannot seek to include in its budgeted revenue requirements (and therefore in its fees) expenditure that is not related to its functions and responsibilities under the NEL and the Rules.

Any new activities that are unrelated to those functions and responsibilities will be funded by other means. An example of this is the recovery of NEMMCO's costs for providing gas market B2B services. As outlined in NEMMCO's 2005 Statement of Corporate Intent and Budget dated May 2005, NEMMCO will recover those costs on a fee-for-service basis[45].

The financial information used for the purposes of NEMMCO's Activity Survey and Cost Analysis and sections 7, 8 and 9 of this Determination and Report exclude expenditure that is not related to NEMMCO's functions and responsibilities under the NEL and the Rules[46].

5.6 Transparency, accountability and cost allocation

In its submission, Ergon Energy noted that the reform process of the NEM has been protracted, as has the development of a structure of Participant fees over that time, and commented:

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43 TransGrid Submission, p. 3.

44 NGF and ERAA Submission, p.1.

45 NEMMCO's 2005 Statement of Corporate Intent and Budget dated May 2005, p.44.

46 See also the discussion in section 7.3 of this Determination and Report.

> *Over this period, there has been general acknowledgement within the market and stakeholders on the need for increased transparency and accountability of all participants in the NEM. Despite this widely accepted need, the Draft Determination fails to demonstrate a significant incremental improvement, especially in regard to cost allocation*[47].

Of particular concern to Ergon Energy was the various cost categories in NEMMCO's budgeted revenue requirements that, in the Draft Determination and Report, NEMMCO believed could not be directly attributed. These included travel, printing & stationery, directors' fees and other fees. This specific issue is addressed in section 7.4.2 of this Determination and Report.

On the wider issue of transparency and accountability, NEMMCO considers that this Determination and Report constitutes a substantial development on the previous three determinations. In preparing this Determination and Report, NEMMCO has gone to considerable lengths to set out the cost and budget information on which the determination is based, and, where judgement has been exercised, to set out the reasons why NEMMCO has made the decision it did.

NEMMCO notes that the consultation process surrounding the determination of a structure of Participant fees is only one element of the accountability framework which applies in the NEM. This framework includes the preparation of annual Statements of Corporate Intent and Budgets, with the opportunity for Participant input, the publication of Annual Reports (including statutory accounts) and regular market audits. Special governance arrangements have also been put in place in relation to the development of B2B procedures (eg the IEC).

In its submission, Ergon Energy asked that NEMMCO consider establishing procedures to enable information to be captured, presumably to enable a higher degree of attribution in the next fee determination. NEMMCO has considered introducing an activity based costing system, and believes that the cost involved (including the time it would take for staff to administer) would be significant compared to the benefits that might accrue. It needs to be recognised that, in determining a structure of Participant fees, NEMMCO makes a number of judgements, and refining the information further will not necessarily assist in making the ultimate outcome more precise.

[47] Ergon Energy, Submission to the NEMMCO Structure of Participant Fee Consultation, 17 February 2006, p.1.

6 Basis of Recovery of Budgeted Revenue Requirements

6.1 Introduction

Clause 2.11.1(b) of the Rules contains principles that should be applied for the recovery of particular items of expenditure. In effect, these set out the recovery periods NEMMCO is required to apply in preparing its annual budget of revenue requirements. Special rules apply to the establishment costs and declared NEM projects. There are also general rules that apply to other recurrent and capital expenditures.

6.2 NEMMCO Establishment Costs

Establishment costs are the expenditures incurred by NEMMCO prior to the commencement of the NEM in preparation for its commencement.

Clause 2.11.1(b)(2)(iii) of the Rules requires establishment costs to be recovered over either 10 years, or in accordance with generally accepted accounting principles, depending on their nature.

Establishment costs comprise three main components: depreciation expenses, interest on borrowings and the "Establishment Receivable". The Establishment Receivable represents the non-capital expenditure (ie operating establishment costs) that NEMMCO incurred while setting up the NEM. These costs were separately recorded and capitalised at the commencement of the NEM and are being collected over a ten year period.

As at 30 June 2006, the Establishment Receivable outstanding will be $11.4 million. This will be recovered over the first three financial years covered by the new structure at a rate of $4.45 million per year for each of the first two financial years, and the remainder in the third financial year.

6.3 FRC Costs

NEMMCO has incurred costs in the vicinity of $46 million, in establishing (approximately $38 million) and operating (approximately $8 million) the systems necessary to support the transfer of retail customers between Retailers as a result of the introduction of FRC in their jurisdictions.

The introduction and facilitation of FRC is taken to have been determined to be a declared NEM project for the purposes of the Rules[48].

In the 2003 Fee Determination, NEMMCO determined that FRC establishment costs (incurred up until 31 January 2002[49]) will be recovered over a 10 year period for any capitalised operating costs and up to 5 years (depending on the nature of the capital investments) for any capital investment costs. In practice, the second part of this decision meant that FRC expenditure related to capital equipment is recovered through the depreciation of the assets

[48] Clause 2.11.1(bd) of the Rules.

[49] Costs incurred in operating the system between 1 February 2002 and 30 June 2003 are treated as part of the operational costs.

acquired by the expenditure over the effective lives of those assets in a manner that is consistent with generally accepted accounting principles.

The elements comprising the FRC operating costs and FRC establishment costs are shown in the 2005/2006 FRC Budget in section 7.3 of this Determination and Report.

Data relating to customer transfers has in the past largely been processed manually by Market Customers and DNSPs. Since January 2004, NEMMCO has been actively involved in facilitating the development and implementation of systems and procedures to allow the automation of data exchange and reconciliation between Participants. This solution is known as "B2B".

B2B communications are closely related to FRC – the automation of data exchanges between businesses is necessary to permit large numbers of retail transfers to occur in an efficient manner.

B2B communications will primarily occur between Retailers and DNSPs relating to the transfer of end use customers. In addition to providing the B2B Hub, NEMMCO supports the Information Exchange Committee (**IEC**) in the formulation of B2B standards and coordinating the testing of Retailer and DNSP systems as part of a standard implementation process. NEMMCO is also providing assistance in coordinating implementation and testing activities.

NEMMCO estimates that it will incur costs in the vicinity of $2.075 million in carrying out its B2B activities. The FRC budget in the SCI also includes $561,000 to support the work of the IEC.

Currently, costs associated with B2B are recouped through FRC fees as operating expenses, and there is no establishment component.

6.4 New Control Centre

NEMMCO is building a new control centre for the NEM to replace the existing facility located in New South Wales, which is currently leased. A suitable site has been purchased and the new facility has been specifically designed to meet the NEM's future requirements.

Clause 2.11.1(b)(2) of the Rules provides that, to the extent practicable, recurring expenditure requirements and payments are recovered in the year of expenditure, or payment, and capital expenditures of this kind are recovered through the depreciation, or amortisation, of the assets acquired by the capital expenditure in a manner that is consistent with "generally accepted accounting principles".

In their joint submission, the NGF and ERAA state that:

> *The costs of the new control centre should be recovered according to common accounting practice and allocated to participants in the same manner as other major capital costs;*[50]

NEMMCO has put in place a financing facility with a bank to fund its costs associated with the new control centre. The facility will be for a term of 7 years and will be refinanced during the effective life of the new control centre. From

[50] NGF and ERAA Submission, p.1.

1 July 2006, NEMMCO's interest expense for the loan will be recovered from Registered Participants as recurring expenditure in accordance with clause 2.11.1(b)(2)(i) of the Rules.

The capital expenditure associated with the project has two components: the cost associated with acquiring the land, and the costs associated with the construction and fitout of the building. NEMMCO expects the new control centre to be in use for approximately 30 years, and the initial fitout is expected to last about 15 years.

NEMMCO has been advised by Ernst & Young that generally accepted accounting principles require that the building and fitout be depreciated over the expected useful life of the relevant assets. NEMMCO, therefore, intends to recover the capitalised costs associated with construction over a period of 30 years from 1 July 2006 and the capitalised costs associated with fitout over a period of 15 years from 1 July 2006 by way of depreciation of the relevant assets under clause 2.11.1(b)(2)(ii) of the Rules. A straight-line depreciation method will be used.

NEMMCO has been advised by Ernst & Young that land is not a depreciable asset under generally accepted accounting principles. NEMMCO does not believe that the cost of the land can be amortised, either.

Under section 50 of the NEL, NEMMCO is required to operate "on a full cost recovery but not for profit basis". Clause 2.11.1(b)(2)(ii) of the Rules (that only applies "to the extent practicable") does not provide NEMMCO with any guidance on the appropriate basis for recovering the costs associated with the acquisition of the land. NEMMCO has decided to recover those costs over a period of 30 years from 1 July 2006, consistent with the recovery period for the capitalised costs associated with construction.

The recovery principles for the new control centre were considered by the Participant Advisory Committee on 14 April 2005. The Committee, which is comprised of senior representatives of the various industry sectors, agreed that the costs of the land and building should be recovered over a longer period, namely 30 years.

The approach was also reflected in NEMMCO's Statement of Corporate Intent and Budget for 2005/2006.

Because of its unique role, this is the first time that NEMMCO has acquired a significant asset that is likely to appreciate in value. NEMMCO acknowledges that the acquisition of the land could be seen as effectively increasing the jurisdictions' "equity" in NEMMCO, however, it needs to be borne in mind that:

- the new control centre is a specialist facility and the land is located within a secure complex. It will not be used for any other purpose in the foreseeable future;
- the jurisdictions will only access the additional "equity" in NEMMCO if the company is wound up, or sold, which is unlikely;
- there will always be a need for a control room and a complex of this type to manage the national electricity system and the market – if the NEM is

restructured in the future, it is reasonable to assume that the new control centre will be transferred to NEMMCO's successor; and

- after its initial period of operation, the new control centre is likely to be refurbished and continue to be used for a further period for the same purpose, or alternatively, it could be sold and the proceeds applied to minimise the future costs of a more modern and appropriate replacement facility.

NEMMCO considers that these recovery principles should also apply if NEMMCO were to acquire other land during the life of the new structure of Participant fees.

7 NEMMCO's budgeted revenue requirements

7.1 Introduction

Clause 2.11.1(b)(3) of the Rules requires that, to the extent practicable:

> the components of *Participant fees* charged to each *Registered Participant* should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* involve that *Registered Participant.*

In light of this principle, NEMMCO has undertaken a thorough and robust analysis of its costs, activities and outputs with a view to developing a reasonable basis for determining the extent to which its budgeted revenue requirements involve individual Registered Participants or categories of Registered Participants. In order to have a basis on which to allocate NEMMCO's budgeted revenue requirements (ie costs), it is necessary to understand NEMMCO's activities and outputs and the costs attributed to them.

In the NEMMCO Activity Survey and Cost Analysis contained in Attachment D, NEMMCO has analysed its costs and attributed them (where possible) to its main outputs. This section of the Determination and Report summarises the results of the cost attribution analysis contained in the NEMMCO Activity Survey and Cost Analysis.

7.2 Categorisation of outputs and activities

NEMMCO's functions encompass a wide range of activities, with individual Registered Participants and categories of Registered Participants having varying levels of interaction in each activity. NEMMCO has two core functions: that of an independent system operator, and that of an independent power exchange. In performing the first function, NEMMCO is responsible for ensuring the power system operates in a safe, secure and reliable manner. In performing the second function, NEMMCO is responsible for ensuring that the market operates in an efficient manner subject to the constraints contained in the Rules.

In carrying out these two broad functions, however, NEMMCO engages in a large number of activities and produces a range of "outputs".

NEMMCO has identified 162 separate activities that it undertakes to support its functions. These activities can be categorised into 10 broad, non-FRC, outputs as follows:

(a) power system security;

(b) power system reliability;

(c) market operation;

(d) market settlement (cash transactions and clearing, metering and billing);

(e) prudential supervision;

(f) settlement residue auctions;

(g) wholesale market improvement;

(h) information dissemination;

(i) retail market improvement; and

(j) data and system management.

NEMMCO administration has been identified separately.

NEMMCO considers that these 10 broad outputs represent a sufficient level of detail by which to practically inform the development of a fee structure that will satisfy the reflective of involvement criterion.

The allocation of specific activities to the above outputs is set out in Appendix 1 to NEMMCO's Activity Survey and Cost Analysis.

The outputs identified above relate to NEMMCO's non-FRC activities. NEMMCO's FRC activities are discussed in section 9 of this Determination and Report.

7.3 NEMMCO's budgeted revenue requirements

NEMMCO has used the 2005/2006 budgets from its latest Statement of Corporate Intent and Budget dated May 2005 (**SCI**) as the starting point for this cost attribution analysis. There are two relevant budgets in the SCI, one dealing with general costs and the other dealing with FRC.

These budgets are set out below (with some modifications as indicated in the notes).

2005/2006 NEMMCO General Budget

GENERAL COSTS	$'000
Operating Expenses	
Labour & Contractors	30,720
Consultants	4,320
Agency Fees	1,940
Information Technology	4,050
Travel	1,090
Accommodation	1,320
Insurance	4,680
Depreciation	4,530
Finance Charges	1,520
Training & Development	920
Audit	490
Telephone	280
Printing & Stationery	440
Amenities	100
Subscriptions	430
Utilities	220
Directors Fees	675
Other	1,335
Other Revenue to be offset	(570)
Sub-total Operating Expenses	58,490
Establishment Receivable	4,450
Total NEMMCO Fees	62,940

Notes – see next page

Notes:

1. NEMMCO's budgeted General Fees per the SCI includes an item "contingency", which is designed as a provision for potential budget under recovery to lessen the impact on the subsequent year. For the purpose of the costing activity the item has been removed.
2. Expenses related to Settlement Residue Auctions are not included, as fees are collected separately for these under clause 3.18 of the Rules.
3. "Other Revenue to be offset" includes the fees collected relating to NEMMCO's training courses and interest earned by NEMMCO.
4. All amounts are exclusive of GST.

2005/2006 FRC Budget

FRC Costs	$'000
Operating Expenses	
Labour	3,780
Contractors	30
Consultants	480
Office Administration	80
Information Technology	1,340
Travel	100
Accommodation	120
Training	80
Depreciation	370
Legal Costs	100
Market Audit	40
Costs incurred between Feb 02 - Jun 03	560
Sub-total Operating Expenses	7,080
Establishment Expenses	
Establishment Receivable	2,060
Depreciation	537
Interest Charges	220
Sub-total Establishment Expenses	9,630
Total FRC Fees	16,710

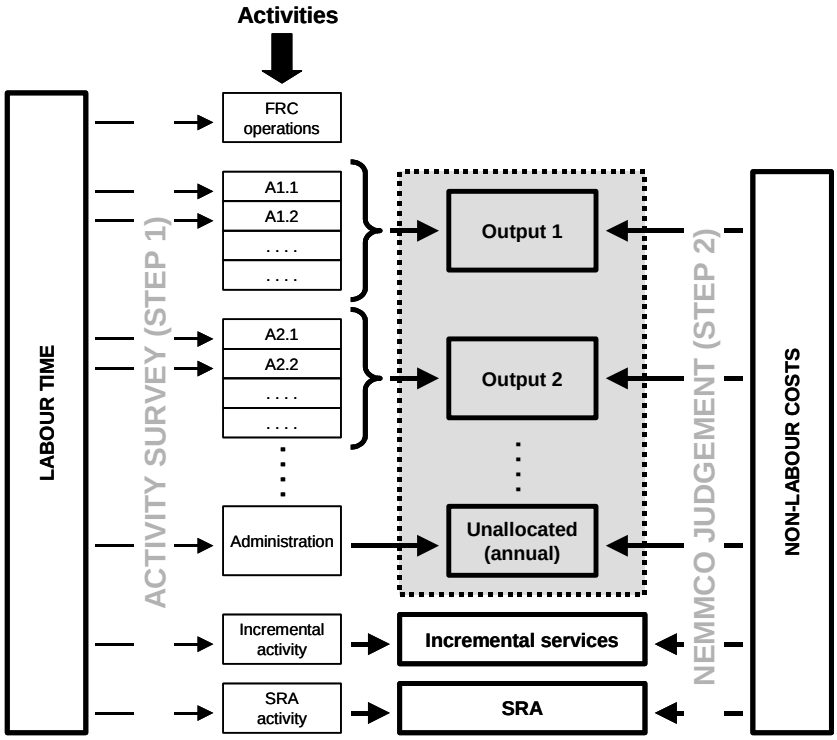
Note: All amounts are exclusive of GST

The SCI budgets (as modified in the manner described in the notes above) provide the most up to date information NEMMCO has available for the purposes of this Determination and Report. Although NEMMCO's annual costs will vary over the duration of the new structure, the SCI budgets give a robust basis for notionally dividing NEMMCO's annual budgeted revenue requirements between NEMMCO's outputs during the period covered by the new structure.

7.4 Attribution of general costs to outputs

Figure 3 shows the process by which NEMMCO attributed its general budgeted revenue requirement to each of the outputs identified above.

Figure 3: Attribution of labour and non-labour costs



The level to which NEMMCO is able to attribute its costs to the broad categories of output is outlined below.

The Establishment Receivable in NEMMCO's general budget is not attributed to any of specific outputs, but forms part of the unallocatable amount.

7.4.1 Attribution of general labour costs

NEMMCO does not conduct on-going time-sheet reporting by staff against either broadly defined outputs or specific activities, however, NEMMCO has undertaken an analysis (using a comprehensive but non-exhaustive survey) of labour costs incurred in conducting each of the activities listed in Appendix 1 to NEMMCO's Activity Survey and Cost Analysis. Aggregating labour costs for each of these activities allows NEMMCO to attribute all labour costs to each of the 10 broad categories of output and NEMMCO administration – the detailed analysis of allocation of labour costs (by output/activity) is provided in the NEMMCO Activity Survey and Cost Analysis.

As part of the labour cost attribution exercise and to facilitate comparison of this survey with surveys undertaken to inform previous fee determinations, NEMMCO also undertook an analysis of time spent in direct interaction with each category of Participant against each activity. A summary of NEMMCO staff time able to be allocated as being spent in direct interaction with the various categories of Registered Participant is provided in the NEMMCO Activity Survey and Cost Analysis.[51] Although the most recent direct interaction analysis was useful in understanding the extent to which

[51] See section 3 of the NEMMCO Activity Survey and Cost Analysis. Only 33.9% of total time spent on all activities was able to be allocated in this way.

Participants are involved with NEMMCO at the "input" level, direct interaction with particular Participants against each activity is only one issue to consider when it comes to assessing the extent to which Participants are involved in specific outputs.

7.4.2 Attribution of general non-labour costs

For every financial year, NEMMCO budgets and accounts for actual expenditure against each of the categories listed below.

Non-labour costs of NEMMCO fall into the following categories:

- consultants;
- information technology;
- accommodation;
- depreciation;
- training & development;
- telephone;
- amenities;
- utilities;
- other.
- agency fees;
- travel;
- insurance;
- finance charges;
- audit;
- printing & stationery;
- subscriptions;
- directors' fees; and

Not all of these non-labour costs could be attributed to the individual activities listed in Appendix 1 to NEMMCO's Activity Survey and Cost Analysis.

In its submission, Ergon Energy expressed concern that NEMMCO had formed the view in the Draft Determination and Report that various general non-labour cost categories could not be directly attributed to specific outputs, particularly travel, printing & stationery, directors' fees and other fees.

In light of Ergon Energy's concerns, NEMMCO has reconsidered the methodologies for attributing these particular cost categories.

NEMMCO further analysed the travel category and other cost category and has attributed a further proportion of those cost categories to specific outputs, although it remains impossible to attribute all of those costs.

NEMMCO still believes that it is not possible to attribute printing & stationery and directors' fees to specific outputs. In relation to directors' fees, NEMMCO notes that the Board of NEMMCO is responsible for the overall management of the company, and it is not feasible to attribute the time they spend in Board meetings and other activities to particular outputs. In relation to printing & stationery, it should be noted that NEMMCO recoups the publication costs of the Statement of Opportunities and the Annual National Transmission Statement separately, and the costs of producing these publications are not included in the printing & stationery cost category.

Non-labour costs have been attributed to specific outputs, using the methodologies described below.

Methodologies for attributing general non-labour costs to outputs

Cost Category	Attribution Method
Consultants	Attributed on basis of relationship to outputs as determined by review of costs within project codes and consultation with departments.
Agency Fees	Attributed to Power System Security
Information Technology	Attributed on basis of analysis of relationship of underlying assets to activities and outputs in consultation with Information Technology
Travel	Attributed to outputs by alignment of NEMMCO cost centres to the outputs
Accommodation	Attributed to outputs on the basis of the functions of each of the premises. In 2005/06 this includes rent and outgoings. In future periods, it is intended to include recovery for the cost of the new New South Wales control centre land and other capitalised expenses. See the discussion in section 6.2 of NEMMCO's Activity Survey and Cost Analysis.
Insurance	With the exception of TNSP insurance which is attributed to Power System Security, and that specifically for Settlement Residue Auctions, this could not be specifically attributed - allocated to general overheads
Depreciation	Attributed on basis of analysis of relationship of underlying assets to activities and outputs in consultation with Information Technology
Finance Charges	Relates to establishment costs – allocated to general overheads
Training & Development	Training specific to the Power System Operations group has been allocated between Power System Security, Power System Reliability and Market Operation, otherwise could not be specifically attributed - allocated to general overheads
Audit	Market Audit costs attributed to Power System Security, Power System Reliability, Market Settlement, Market Operation and Prudential Supervision equally. Settlement Residue Auction audit costs attributed specifically with internal and statutory audit costs attributed to general overheads
Telephone	Attributed in proportion to labour time
Printing & Stationery	Allocated to general overheads
Amenities	Attributed in proportion to labour time
Subscriptions	Attributed on basis of relationship to outputs as determined by consultation with departments
Utilities	Attributed in proportion to accommodation costs
Directors' Fees	Could not be specifically attributed - allocated to general overheads
Other	More than half of these costs relate to maintenance of control centres and general office equipment and have been allocated on the same basis as accommodation. Meals and entertainment were allocated in proportion to labour costs. The remaining costs are general administrative costs that were allocated to NEMMCO Administration.

7.4.3 Summary of attribution of general costs to outputs

The table below shows costs by major expense category for each of the outputs identified above and NEMMCO administration, determined using the attribution principles above.

Attribution of NEMMCO Costs to Outputs

	Power System Security	Power System Reliability	Market Settlement	Market Operation	Prudential Supervision	Settlement Residue Auctions	Market Improvement	Information Dissemination	Retail Market Improvement	Data & System Management	NEMMCO Administration	Total $'000's
Labour & Contractors	10,717	1,822	1,565	1,368	358	270	1,647	2,045	928	3,434	6,376	30,530
Consultants	424	277	302	202	8	78	604	139	696	52	1,538	4,320
Agency Fees	1,940											1,940
Information Technology	1,256	1,053		1,377					81		284	4,050
Travel	142	139	5	129	15	-	56	54	34	144	362	1,090
Accommodation	233	187	33	134	-	-	67	47	46	78	495	1,320
Insurance	400					60					4,220	4,680
Depreciation	1,383	1,174	8	1,548	-	-	15	-	83	-	319	4,530
Finance Charges											1,350	1,350
Training & Development	88	88	42	88	10	7	44	55	25	92	172	710
Audit	70	70	70	70	70	30					110	490
Telephone	98	17	14	13	3	2	15	19	9	31	58	280
Printing & Stationery											440	440
Amenities	35	6	5	4	1	1	5	7	3	11	21	100
Subscriptions		177									253	430
Utilities	77	13	11	10	3	2	12	15	7	25	46	220
Directors Fees											675	675
Other	301	207	50	87	6	-	46	46	74	75	443	1,335
Contingency												-
												-
Total	17,163	5,229	2,115	5,029	474	451	2,512	2,427	1,986	3,943	17,161	58,490
Attributable	17,163	5,229	2,115	5,029	474		2,512	2,427	1,986	3,943		40,878
Non Attributable											17,161	17,161
Total Costed Outputs	17,163	5,229	2,115	5,029	474	-	2,512	2,427	1,986	3,943	17,161	58,039
Recovered Separately						451						451

The table above shows that, of NEMMCO's general budgeted revenue requirements, approximately $41 million (70.43%) is attributable to the outputs listed in section 7.2 of this Determination and Report and it is not possible to attribute the balance of approximately $17 million (29.57%) to any of those outputs. As discussed above, the Establishment Receivable is attributed to the unallocatable amount directly and NEMMCO's budgeted revenue requirements relating to FRC are separately identified in an FRC budget.

On that basis, NEMMCO considers that 70% of the general portion of its budgeted revenue requirements can be allocated against the outputs identified in section 7.2, while 30% cannot be allocated. (The percentages have been rounded for simplicity.)

8 Allocating budgeted revenue requirements

8.1 Allocation of outputs to categories of Registered Participants: Principles

After attributing NEMMCO's budgeted revenue requirements to outputs, the next step is to allocate those budgeted revenue requirements amongst Registered Participants.

The issue of allocating budgeted revenue requirements on the basis of membership of a category of Registered Participants was considered by the Second Group in the 2000 Fee Determination dispute. The Second Group stated:

> *NEMMCO was entitled … to be "influenced by its own experience in that in operating the NEM certain services and activities (and hence NEMMCO costs and resources) are used or involve, in a large sense, classes or categories of Code Participants."* [52]

In allocating budgeted revenue requirements, NEMMCO has considered the reflective of involvement criterion, and also the simplicity and no unreasonable discrimination criteria.

In considering the extent to which the budgeted revenue requirements for NEMMCO involve Registered Participants, NEMMCO has used the categories of Registered Participants provided for in the Rules. NEMMCO is satisfied, on the basis of the experience and expertise of its general managers and staff, that each Participant in these categories is likely to be involved with NEMMCO's costs in relevantly similar ways.

The main categories of Registered Participants for this purpose are:

(a) **Generators:** A Generator is registered in respect of a generating system or unit(s) that is connected to a transmission or distribution network. A generating unit can be classified as market or non market and scheduled or non scheduled.

The entire output of a market generating unit is sold through the NEM. The output of a non market generating unit is sold to the local Retailer or a customer connected at the relevant connection point.

A scheduled generating unit is subject to NEMMCO's centrally co-ordinated dispatch process. Generating units that have a nameplate rating of 30 MW or greater (or are part of a group of units connected at a common connection point with a combined nameplate rating of 30 MW or greater) are generally classified as scheduled generating units. Even non scheduled generating units are required to have some interaction with NEMMCO to enable NEMMCO to fulfill its power system security responsibilities.

NEMMCO considered breaking down the Generator category on some other basis. As Allen Consulting comment in its report:

[52] Decision of Second Group on Amended Dispute Reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraph 5.19.

> *It may be possible, in theory, to charge capacity-based fees to peaking generators and energy-based fees to base load generators but in practice the distinction between base load and peaking generators is difficult to make, especially when the category of intermediate generators is added. The merit order of Generators in the NEM, while reasonably stable (with low cost coal fired generators generally the first to be dispatched) is not however immutably fixed and the categories "base load", "intermediate", and "peaking" are not useful for the purposes of designing a fee structure to recover NEMMCO's costs.*[53]

NEMMCO agrees with this comment.

(b) **Market Customers:** Market Customers purchase electricity through the NEM. They are generally Retailers, who on-supply that electricity to end customers;

(c) **Transmission Network Service Providers:** TNSPs operate the high voltage networks in the NEM that transmit electricity from generating units to distribution grids and some customers. TNSPs charge network fees that are subject to regulation by the AER.

(d) **Distribution Network Service Providers:** DNSPs operate the distribution networks in the NEM jurisdictions that distribute electricity from transmission networks (and some embedded generation) to end use customers. DNSPs charge network fees that are subject to regulation by the relevant local State or Territory regulator.

(e) **Market Network Service Providers:** MNSPs are network service providers who operate a network element which is classified as a "market network service". The electricity flow on a market network service is scheduled by NEMMCO using the MNSP's bids and NEMMCO's centrally co-ordinated dispatch process and MNSPs are remunerated through the wholesale exchange. In terms of interaction with NEMMCO, they have many similarities to Market Scheduled Generators.

(f) **Traders:** Traders register to participate in settlement residue auctions.

8.2 Extent of involvement of Registered Participants in outputs

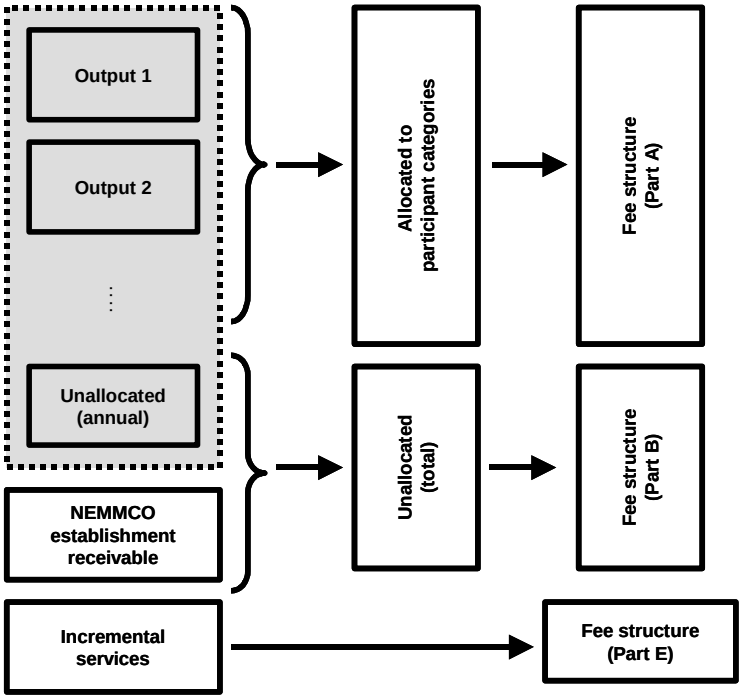
8.2.1 Introduction

NEMMCO has considered each of the outputs identified in section 7.2 of this Determination and Report and, on the basis of the experience and expertise of its general managers and staff, has formed a view as to the extent of involvement of each category of Registered Participant in that output.

Figure 4 shows the process NEMMCO has undertaken to allocate outputs to Registered Participants.

[53] Chapter 4.3 of the Allen Consulting report.

Figure 4: Translating costs to fee components



NEMMCO's analysis in relation to each output is summarised in the following table, and discussed in detail in sections 8.2.2 (TNSPs and DNSPs) and 8.2.3 (NEMMCO's analysis) of this Determination and Report.

Allocation on basis of involvement

Category of Participant	Power System Security	Power System Reliability	Market Settlement	Market Operation	Prudential Supervision	Settlement Residue Auctions	Wholesale Market Improvement	Information Dissemination	Retail Market Improvement	Data & System Management
Market Customers	50%	75%	51%	50%	25%	Not Allocated - recovered separately	50%	50%	100%	50%
Generators and MNSPs	50%	25%	49%	50%	75%		50%	50%	0%	50%
Total	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%

Section 8.2.4 of this Determination and Report considers the position of Non-Market Generators and concludes that Non-Market Scheduled Generators are, overall, less involved in NEMMCO's outputs than Market Generators, and that Non-Market Non-Scheduled Generators are only marginally involved in NEMMCO's outputs. Accordingly, the level of Participant fees charged to Non-Market Scheduled Generators will be less than that charged to Market Generators, and Non-Market Non-Scheduled Generators will not be charged Participant fees.

8.2.2 TNSPs and DNSPs

The extent of involvement of TNSPs and DNSPs is an issue that comes up in the case of a number of NEMMCO's outputs.

TNSPs

The relationship between TNSPs and NEMMCO has two aspects. In some respects, TNSPs may be considered to be involved in NEMMCO activities – for example, the security and integrity of the equipment of TNSPs is preserved by NEMMCO's power system security activities. TNSPs, however, also provide "services" to NEMMCO that contribute to NEMMCO's ability to manage power system security and perform its other functions. Some of these services are provided to NEMMCO under agreements entered into between NEMMCO and the relevant TNSP. Others are provided as a result of obligations imposed on TNSPs under the Rules.

As TransGrid commented in its submission:

> *TransGrid and other TNSPs also provide various services to NEMMCO … including information to help maintain a safe and secure power system, that ultimately benefits all Registered Participants and the long term interests of consumers*[54]

NEMMCO does not believe it is appropriate to allocate any of its budgeted revenue requirements to TNSPs because these two aspects are so intertwined, and the services TNSPs provide significantly contribute to NEMMCO's ability to perform its functions.

DNSPs

NEMMCO has only limited interaction with DNSPs in relation to power system security and reliability outputs. NEMMCO advises a DNSP if the DNSP's network will be affected by load shedding or a system security risk so that the DNSP can manage the consequences. This communication is undertaken by the TNSPs on NEMMCO's behalf. Accordingly, NEMMCO considers that the extent of involvement of DNSPs in those outputs is minor and incidental.

Although NEMMCO interacts with DNSPs on retail market improvement activities, that output in the main supports retail competition and the DNSPs' involvement is also only incidental.

8.2.3 NEMMCO's analysis

Against that background, NEMMCO's analysis as to the extent of involvement of each category of Registered Participant in each output is as follows.

(a) **Power system security**

This output delivers a secure power system that ensures that a "credible event" does not cause the power system to enter a state where equipment is overloaded, or power flows, voltages, and frequency are outside limits, or are not under control. The activities involved include real time monitoring, both by automatic means and through control centre operations, such as running system simulations, outage co-ordination with TNSPs, the acquisition and dispatch of ancillary services, power system analysis and performance monitoring.

54 TransGrid Submission, p.1.

All those who are connected to the power system are involved in this output. All Generators, MNSPs and Market Customers require a secure power system to carry out their businesses. A secure power system also ensures that equipment belonging to TNSPs, DNSPs and end use customers is not damaged.

The issue of TNSPs' and DNSPs' involvement in this output is discussed in section 8.2.2 of this Determination and Report.

The main categories of Registered Participant that are involved in this output are Generators, MNSPs and Market Customers. Generators and MNSPs as a group and Market Customers as a group are similarly involved in that one group supplies energy to, and the other receives energy from, the secure power system.

Given that the extent of involvement in this output of Generators and Market Customers is equivalent, NEMMCO considers that the budgeted revenue requirements associated with this output should be split half to Generators and MNSPs and half to Market Customers.

The relative extent of involvement of the different categories of Generators in this output is discussed further in section 8.2.4.

(b) **Power system reliability**

This output ensures that supply is delivered to Market Customers with a specified level of probability. The activities involved include reserve monitoring in a range of timeframes, the provision of information to the market by the projected assessment of system adequacy (PASA), interconnection reviews and a substantial portion of the Statement of Opportunities.

Power system reliability outputs can be broken down into the major components of:

- ensuring an acceptable probability of supply to customers;
- facilitating stable prices while supply is being met, rather than the price routinely hitting VoLL during load shedding;
- provision of information to the market by PASA to assist in the self co-ordination of generation outages so that outages are taken at the best time for Generators; and
- provision of information to the market to facilitate appropriate levels of investment.

The issue of TNSPs' and DNSPs' involvement in this output is discussed in section 8.2.2 of this Determination and Report.

As indicated above, Market Customers are clearly involved in this output as they benefit from the higher likelihood of being supplied with electricity. Generators and MNSPs are also involved, but not to the same overall extent as Market Customers.

NEMMCO considers that a reasonable split is 75% to Market Customers and 25% to Generators and MNSPs.

The relative extent of involvement of the different categories of Generators in this output is discussed further in section 8.2.4.

(c) **Market operation**

Market operation involves determining the economic dispatch or schedules for generating plant and the prices for the NEM. The activities include the dispatch of energy and ancillary services, pre-dispatch processes, and market management technology systems.

The categories of Registered Participant involved in this output are Market Generators, MNSPs, and Market Customers. NEMMCO considers that Market Generators and MNSPs as a group and Market Customers as another group are equally involved in this output.

NEMMCO considers that the budgeted revenue requirements associated with this output should be split half to Market Generators and MNSPs and half to Market Customers.

(d) **Market settlements**

Market settlements involve determining amounts owing and owed in the NEM, and the facilitation of cash transactions. The activities include acquisition of metering data, preparation of settlement statements, billing and Austraclear processing.

Market Generators, MNSPs and Market Customers are involved in this output. NEMMCO considers that the budgeted revenue requirements associated with this output should be allocated in proportion to dollars transacted via NEMMCO's settlements system for spot market transactions.

The dollars transacted in the spot market for each of these categories for the 2004/2005 financial year is as follows:

Market Settlements for energy traded - for 2004/2005 financial year

Customer / Participant Type	Energy Traded $	Energy Traded %
Market Customers	$6,394,922,029	51.34%
MNSPs	6,183,844	0.05%
Market Scheduled Generators	$6,032,339,031	48.43%
Market Non-Scheduled Generators	$23,300,000	0.19%
Total	**12,456,744,904**	**100.00%**

NEMMCO considers that the budgeted revenue requirements associated with this output should be split 51% to Market Customers and 49% to Market Generators. (The percentages have been rounded for simplicity.) The difference reflects losses.

(e) **Prudential supervision**

Prudential supervision delivers a high degree of confidence that payments will be made to settlement creditors. The activities involved include calculating maximum credit limits, monitoring Market Participant outstandings, maintaining required credit support, reallocations and prudential crisis management. They also include the work that is being done by NEMMCO to reduce the costs of prudential supervision for Market Customers, including maximum credit limits and reallocations.

Market Generators and MNSPs are the primary beneficiaries of this output. The extent of involvement in this output of Market Customers was previously assessed as not material. Accordingly, in the 2003 Fee Determination, all of the budgeted revenue requirements associated with this output were allocated to Market Generators and MNSPs in proportion to dollars transacted via NEMMCO settlements.

Given the work being done to reduce the costs of prudential supervision for Market Customers, NEMMCO believes that, going forward, a proportion of the budgeted revenue requirements associated with this output should be allocated to Market Customers. Bearing in mind the need for simplicity, NEMMCO considers that a reasonable split is 75% to Market Generators and MNSPs and 25% to Market Customers. Market Generators and MNSPs remain more involved in this output than Market Customers.

(f) **Settlement residue auctions**

NEMMCO operates an auction process to sell rights to a share of certain future settlement residue streams. The budgeted revenue requirements associated with this output are recovered by auction fees that are approved by the Settlement Residue Committee.

This output has therefore not been included in the allocated component of Participant fees.

(g) **Wholesale market improvement**

This output relates to the continued development of the efficiency of the NEM. The activities involved include market design analysis, market performance monitoring, market issues management, working group participation, testing and implementing system changes. Participants involved in this output are those trading or operating in the NEM.

The issue of TNSPs' and DNSPs' involvement in this output is discussed in section 8.2.2 of this Determination and Report.

Market Generators, MNSPs and Market Customers are involved in this output. NEMMCO considers that the budgeted revenue requirements associated with this output should be split half to Market Generators and MNSPs and half to Market Customers.

(h) **Information dissemination**

This output involves the provision of information to parties operating in the wholesale exchange. The activities include the output of data from NEMMCO's processes, general information provision, Participant support, the Participant Advisory Committee and NEMOC. For the reasons set out in section 8.2.2 of this Determination and Report, NEMMCO does not believe it is appropriate to allocate any of the budgeted revenue requirements associated with this output to TNSPs.

All Market Participants are involved in this output in that they benefit from a transparent market and forums within which Participant concerns can be raised. NEMMCO considers that the budgeted revenue requirements associated with this output should be split half to Market Generators and MNSPs and half to Market Customers.

(i) **Retail market improvement**

Retail market improvement activities include:

- the specification of metrology standards and retail transfer processes for the NEM;
- investigating mechanisms to improve the transfer of data at the retail/network interface to support NEM settlements and other billing transactions;
- identifying and improving the processes by which B2B process information is exchanged;
- the exploration of emerging technologies, innovation and business processes which have the potential to impact on the retail market; and
- the investigation and analysis of emerging and new energy policy issues which have the potential to impact on the retail market.

The issue of DNSPs' involvement in this output is discussed in section 8.2.2 of this Determination and Report.

Given that this output is closely related to retail competition, which primarily involves Market Customers, NEMMCO considers that the budgeted revenue requirements associated with this output should be allocated to Market Customers.

(j) **Data and system management**[55]

This output relates to the secure provision of data and the management of systems. This includes data network management, database management, data standards, information security, IT project management and change management. This output also relates to the overall support and management of the Market Management System and its provision of data.

[55] This output was called "automated inter-business transactions" in the 2003 Fee Determination.

The extent of involvement in this output might be expected to be correlated with the number of user accounts in NEMMCO systems[56]. When NEMMCO considered the number of user accounts as a mechanism for allocation this time, it became apparent that a number of Registered Participants had multiple user accounts, and it was not always clear in what capacity they held them (as some Participants are registered in a number of Participant categories).

This output is similar in many ways to Information Dissemination. Accordingly, NEMMCO considers that the budgeted revenue requirements in respect of this output should be split 50% to Market Customers and 50% to Generators and MNSPs.

The relative extent of involvement of the different categories of Generators in this output is discussed further in section 8.2.4.

8.2.4 Non-Market Generators

In the Draft Determination and Report, NEMMCO treated all Generators (except Non-Market Non-Scheduled Generators) as a single category of Registered Participant for the purpose of determining their extent of involvement in particular outputs. While it recognised that different categories of Generator were involved in NEMMCO's outputs in different ways, NEMMCO took the view that, taken globally, all Generators (except Non-Market Non-Scheduled Generators) were involved in its outputs to substantially the same extent. Non market non scheduled generating units were excluded from the relevant analysis because NEMMCO took the view that it only had very limited interaction with Non-Market Non-Scheduled Generators.

Marubeni submitted that, in its view, Non-Market Scheduled Generators do not utilise NEMMCO's services to the same extent as Market Scheduled Generators and requested NEMMCO *"separate Non Market Schedule[d] Generators and allocate their costs of services provided by NEMMCO on a fair and equitable basis that is consistent with other participants"*.[57]

Marubeni also made a number of specific comments on the assessments NEMMCO made in section 8.2.3 of the Draft Determination and Report covering the extent of involvement of Non-Market Scheduled Generators in various outputs. As a result of Marubeni's comments, NEMMCO has reconsidered its analysis of this issue and made several changes to section 8.2.3 as it appears in this Determination and Report.

The four separate categories of Generators (Market Scheduled; Market Non-Scheduled; Non-Market Scheduled; and Non-Market Non-Scheduled) are each involved to a different extent in each of the output categories that are relevant to Generators (see section 8.2.3). In order to assess the overall involvement of each category of Generator it is relevant to consider some specific characteristics of the outputs (excluding Settlement Residue Auctions) and identify which characteristics involves which category of Generator.

[56] This was the basis on which NEMMCO allocated this output in the 2003 Fee Determination.

[57] Marubeni, Submission to the NEMMCO Structure of Participant Fee Consultation, 30 December 2005, p.1.

The specific characteristics of each output that are relevant to such an assessment are as follows:

(a) Power system security:

- all Generators connected to the power system derive a benefit from the maintenance of a secure power system;
- the involvement of Scheduled Generators is more significant given the requirement to use the dispatch process to manage power system security; and
- Generators require a secure power system to get their product to customers;

(b) Power system reliability:

- all Generators connected to the power system derive a benefit from the maintenance of a reliable power system;
- the relative stability of prices that ensue from a reliable power system benefit all Market Generators;
- the PASA process used to flag reserve issues assists in the development and management activities of Scheduled Generators;
- the longer term investment signals provided by maintenance of a reliable power system assist in the development and management activities of Market Generators;

(c) Market operation involves only Market Generators;

(d) Market settlement involves only Market Generators;

(e) Prudential supervision involves only Market Generators;

(f) Wholesale market improvement involves only Market Generators;

(g) Information dissemination involves only Market Generators; and

(h) Data and system management involves Market Generators and Scheduled Generators.

In summary:

(a) Market Scheduled Generators are substantially involved in all relevant outputs;

(b) Market Non-Scheduled Generators are substantially involved in all relevant outputs;

(c) Non-Market Scheduled Generators are substantially involved in only the power system security, power system reliability and data and system management outputs; and

(d) Non-Market Non-Scheduled Generators are marginally involved in only the power system security and system reliability outputs.

Accordingly, NEMMCO believes it is appropriate to break the "allocatable costs" apportioned to Generators and MNSPs into two pools, one representing the Generators/MNSPs' share of costs related to the power system security, power system reliability and data and system management outputs, and the other representing the Generators/MNSPs' share of costs related to the other outputs. All Generators (except Non-Market Non-Scheduled Generators) and MNSPs would share the costs in the first pool, but only Market Generators and MNSPs would share the costs in the second pool.

As close to two thirds of "allocatable costs" relate to power system security, power system reliability and data and system management (see Table 5 of the NEMMCO Activity Survey and Cost Analysis), NEMMCO believes it is appropriate to set the first cost pool at two-thirds of the "allocatable costs" apportioned to Generators and MNSPs and the second cost pool at one-third of that amount.

On the basis of the above analysis, a case could also be made for requiring Non-Market Non-Scheduled Generators to pay Participant fees given their involvement in the outputs of power system security and power system reliability. NEMMCO, however, remains of the view it expressed in the Draft Determination and Report that Participant fees should not be levied on Non-Market Non-Scheduled Generators. At most, their involvement in the relevant outputs is only marginal. As well, given the size of the generating units in this category, and the absence of NEM metering on those units, the fees that could be collected from Non-Market Non-Scheduled Generators are not likely to be significantly greater than the transaction costs involved in developing a process to allocate and collect them.

8.3 Costed allocation on basis of involvement

The table in section 8.2.1 of this Determination and Report summarises NEMMCO's views as to the extent of involvement of the various categories of Registered Participant in relation to the broad outputs identified in section 7.2.

The percentage allocation determined for each Participant category in the case of each output was then applied to the costs attributed to each of those outputs as shown in the table in section 7.4.3 of this Determination and Report. This outcome is shown in Table 5 of the NEMMCO Activity Survey and Cost Analysis.

As a result of further consideration following a submission received on the Draft Determination and Report, the "allocatable costs" apportioned to Generators and MNSPs has been broken into two pools. The first cost pool has been set at two-thirds of the "allocatable costs" apportioned to Generators and MNSPs and the second cost pool set at one-third of that amount.

Costed allocation on basis of involvement

Participant	$'000's	%
Market Customers	22,642	55.39%
Market Generators, Non-Market Scheduled Generators and MNSPs	12,157	29.74%
Market Generators and MNSPs	6,079	14.87%
Total	40,878	100.00%

On this basis, NEMMCO, therefore, proposes applying 55% of its "allocatable" general budgeted revenue requirements to Market Customers, 30% to Market Generators, Non-Market Scheduled Generators and MNSPs and 15% to Market Generators and MNSPs. (The percentages have been rounded for simplicity.)

8.4 "Unallocatable" amount

Even after the allocation exercise above, there remains a significant proportion of NEMMCO's budgeted revenue requirements (approximately 30% of its general budgeted operating costs plus the Establishment Receivable) that cannot be allocated to particular categories of Registered Participant. Therefore, it is not possible to determine the extent of involvement of different Participants in relation to this "unallocatable" amount.

Section 50 of the NEL requires NEMMCO to operate on a "full cost recovery but not for profit basis". Clause 2.11.1(b)(2) also contemplates that Participant fees should recover the budgeted revenue requirements for NEMMCO. In other words, NEMMCO is required to recover all its costs, and not just those that can be allocated to particular Participants, or categories of Participants, on the basis of the reflective of involvement criterion.

Allen Consulting, in its report, states that:

> *In the circumstances, a reasonable and efficient method for recovering unallocated costs is from end users* via *the Participants that are closest in the electricity supply chain to those end users.*
>
> *This can be achieved by a fee that is levied on Market Customers based on load in the current year. It is reasonable to expect that Market Customers would relatively quickly pass the fee onto end users, so that it would be end users, not Market Customers, who would bear the burden of the fee.*
>
> *It is also likely that a variable fee that was levied on Generators, for the purposes of recovering unallocated costs, would also be passed down the supply chain, first into higher wholesale prices, then eventually into higher retail prices. However, since the purpose of the fee would be to recover unallocated costs from end users, it would more efficient to levy the fee on Participants who are closest to end users i.e. Market Customers.*[58]

Under the current structure of Participant fees, this component of costs is also allocated to Market Customers.

In their joint submission, the NGF and ERAA state that:

> *The issues and parameters … have not materially changed and thus the ERAA and the NGF believe that there is no requirement to change the current participant fee structure*[59]

Given Allen Consulting's recommendations, and the views expressed by Consulted Persons, NEMMCO proposes that this category of costs should be allocated to Market Customers.

[58] Chapter 4.4 of the Allen Consulting report.
[59] NGF and ERAA Submission, p.1.

NEMMCO also considers that this outcome would be consistent with the criterion of simplicity and is not unreasonably discriminatory.

8.5 Incremental services and costs: general

NEMMCO recognises that some of the services it provides are incremental, in that the recipient is receiving some benefit by NEMMCO providing the service over and above other Participants of the relevant class. An example is where NEMMCO has been requested to provide additional bandwidth for access to NEMMCO's market systems.

Where it is practical for NEMMCO to identify that it is doing something specific for a Participant or other parties, and that action causes additional costs for NEMMCO, NEMMCO will seek to levy fees for those actions to recover the incremental costs incurred.

NEMMCO recognises that identifying whether a particular service falls within this category or forms part of the services NEMMCO provides the market generally is not always easy. Given the evolving nature of the market and Registered Participants' needs, it is also not possible to specifically identify every service that falls in this category now.

An Incremental Service is a service that, in NEMMCO's opinion, is provided to a Participant or other person where the recipient is receiving some benefit over and above Participants of the relevant class and is:

- (identifiable) the cost of the service is able to be separately accounted for; and
- (material) the identified costs in providing the service are material; and
- (voluntary) the service is provided at the request of the recipient.

If the Rules contemplate NEMMCO levying a separate fee or charge for a service, that service is likely to be an Incremental Service.

NEMMCO will charge a Registered Participant who receives an Incremental Service a fee. The fee will be levied on the basis of NEMMCO's assessment of the labour, overheads and other material costs involved in providing the service.

The costs NEMMCO incurs in providing Incremental Services will be deducted from NEMMCO's budgeted revenue requirements before the other components of Participant fees are calculated.

8.6 Incremental services and costs: Registration fees

In previous determinations, NEMMCO set a registration fee of $1,700 per registration application for all new registrations. This is a one off charge at the time of registration.

In preparing the NEMMCO Activity Survey and Cost Analysis, NEMMCO considered the costs involved in assessing registration applications, and found

that the actual labour cost per registration application is approximately $3,655[60].

The current registration fee of $1,700 (which has been in place since 2000) therefore does not adequately reflect the time taken to process Participant registration applications.

Accordingly, NEMMCO has decided to set the registration fee at $3,500 per registration application for all new registrations. NEMMCO does not believe that a fee of this magnitude constitutes a material barrier to entry to the NEM.

Because it is proposed that the new structure of Participant fees will have a duration of five years, NEMMCO considers it is appropriate to escalate the new registration fee in line with movements in the Consumer Price Index.

[60] See section 7.3 of the NEMMCO Activity Survey and Cost Analysis.

9 FRC budgeted revenue requirements

In its Issues Paper, NEMMCO asked for comment on the appropriateness of its current cost recovery systems for FRC and B2B costs. NEMMCO currently charges FRC costs separately to other Participant fees, and is recovering the cost of the implementation of B2B communications through those FRC fees.

NEMMCO's interaction with Registered Participants in relation to B2B communications mainly involves Market Customers and DNSPs. This is also reflected in the membership of the IEC and industry working groups.

The consensus among the submissions received was that it was appropriate that B2B related costs should be recovered on the same basis as FRC costs.

SP AusNet and UED commented on which Market Customers these fees might best be levied. SP AusNet concluded that:

> *… under these separate arrangements the costs are met by retailers, and in our view this allocation remains appropriate … the emergence of industry B2B communications systems are intrinsically associated with Full Retail Competition in the retail market, and would not otherwise be required beyond arrangements between the network business and host retailer. Whilst network businesses now have a significant operational reliance upon NEMMCOs provision of FRC and B2B facilities and services, these market developments have been implemented to create opportunities for more innovative and efficient retailing arrangements.* [61]

Similarly, UED commented that:

> *To date any B2B fees incurred by NEMMCO have been incorporated into FRC fees consistent with the wider interpretation of national market facilitation. This is also consistent with the Victorian gas approach where B2B is considered part of market facilitation and Vencorp's costs are part of the market operators fees to retailers. This mechanism also provides the most efficient mechanism for the ultimate flow of these costs to the customers.*[62]

NEMMCO agrees with these views. NEMMCO's FRC and B2B activities and systems serve a reasonably discrete purpose: the provision of services that support the transfer of retail customers between Retailers. That is, in general terms, Retailers are involved in these services.

In relation to B2B communications, NEMMCO also notes that:

- the purpose of B2B communications is to improve and streamline the process for transferring customers. As such, B2B activities are an outcome of FRC - in the absence of FRC, these activities would have been less likely to occur; and
- once the standards for B2B communications have been determined, in the longer term the level of NEMMCO's interaction with DNSPs is unlikely to continue.

61 SP AusNet, Submission to the NEMMCO Structure of Participant Fee Consultation, 28 October 2005, p.2.

62 UED Submission, p.1.

The participating jurisdictions have adopted different timeframes for the introduction of FRC. New South Wales and Victoria introduced FRC in January 2002. FRC was introduced in South Australia in January 2003 and in the ACT in July 2003. Queensland has recently announced that FRC will be introduced in that State from 1 July 2007. Tasmania has announced that it anticipates implementing FRC in that State from 1 July 2010[63].

Despite the staggered introduction of FRC, NEMMCO's FRC systems have had to be designed and scaled to accommodate FRC in all jurisdictions. That is, the decision by some jurisdictions to implement FRC later than others has not resulted in NEMMCO avoiding any of the capital costs associated with establishing its FRC systems. Rather, all Retailers, irrespective of location, have the option of obtaining customer transfer services that include the functionality and scale required to support FRC. Accordingly, all Retailers are involved in the costs incurred in establishing FRC systems.

NEMMCO, therefore, believes that its budgeted revenue requirements for FRC (including B2B) should be allocated to Retailers. In the Draft Determination and Report, NEMMCO proposed that:

(a) FRC establishment related costs would be allocated to all Retailers on the basis of the energy they purchase through the NEM in any participating jurisdiction, but

(b) FRC operating costs would be allocated to Retailers on the basis of the energy they purchase through the NEM in those participating jurisdictions that have implemented FRC.

AGL submitted that it believed that the distinction being drawn by NEMMCO in the Draft Determination and Report between participating jurisdictions that have implemented FRC and those that have not is "artificial". AGL stated:

> *In AGL's view, all retailers use the systems developed for FRC to a greater or lesser degree and should be sharing in both the establishment and operational costs of those systems. This is particularly important since the B2B costs are only to be recovered in the operational FRC costs.*
>
> *… In our view, however, the separation of the establishment and operational costs leaves a potential for dispute over the term "implemented" in relation to FRC. While we accept that FRC may not be considered to be "implemented" in Tasmania, we would argue that FRC has now been "implemented" in Queensland.*
>
> *In our view it would be much simpler to allocate FRC costs on an energy basis to all retailers in all regions.*[64]

If FRC costs were allocated on the basis proposed by AGL, some customers would be exposed to the cost of operating FRC systems that do not apply in their participating jurisdictions, as the relevant jurisdiction has not yet implemented FRC. This was recognised in the 2003 Fee Determination. While NEMMCO appreciates the point being made by AGL, NEMMCO believes that the current arrangements on FRC cost recovery put in place by

63 NEMMCO understands that Tasmania has, however, reserved a final decision on whether retail competition should be extended to the final tranche of customers until an assessment is made of the costs and benefits of doing so.

64 AGL, Submission to the NEMMCO Structure of Participant Fee Consultation, 16 February 2006.

the 2003 Fee Determination ought to continue. In doing so, NEMMCO notes that Queensland is expected to implement FRC from the start of the second year of the new structure of Participant fees (ie 1 July 2007) and Tasmania has not yet finally determined the start date for FRC in that State.

On the question of the meaning of "implemented" in the Draft Determination and Report, NEMMCO has made a minor change to the determination to clarify this.

10 Structure of Participant Fees & Fee Components

10.1 Introduction

In sections 7, 8 and 9 of this Determination and Report, NEMMCO has set out its conclusions on the allocation of NEMMCO's costs to individual Registered Participants and between categories of Registered Participants. Having determined the allocation of costs, NEMMCO must now determine the structure of the fees that are to be levied on Registered Participants.

In determining the structure of fees, NEMMCO has considered the criteria of: simplicity, recovery of budgeted revenue requirements, reflective of involvement, no unreasonable discrimination, NEMMCO's efficiency and, where appropriate, the NEM objective – see section 4 of this Determination and Report.

10.2 Alternative pricing approaches

In chapter 3 of its report, Allen Consulting considers a number of alternative pricing approaches against the applicable criteria, including:

(a) marginal cost-based pricing;

(b) average cost pricing;

(c) fully distributed cost pricing;

(d) Ramsey pricing; and

(e) multi-part pricing.

The following table, extracted from the Allen Consulting report provides a qualitative assessment of the alternative pricing approaches against the criteria.[65]

Basis of participant fee	Simple	Reflective of extent of involvement	Not unreasonably discriminatory	Recovers revenue	Efficient
Marginal cost	Yes in principle, though marginal costs may be difficult to estimate in practice. However, *incremental* costs could be estimated for specific services.	Yes	Yes	No	Yes
Average cost	Yes	Possibly	Possibly	Yes	No
Fully distributed cost	Yes (depending on the detail)	Yes	Yes	Yes	Possibly

[65] Table 3.1 in the Allen Consulting report.

Basis of participant fee	Simple	Reflective of extent of involvement	Not unreasonably discriminatory	Recovers revenue	Efficient
Ramsey	No	No	Yes	Yes	Yes (relative to average cost)
Multi-part	Yes, (depending on how many parts)	Yes (depending on the basis of fixed and variable components)	Yes (depending on the basis of fixed and variable components)	Yes	Yes (relative to Ramsey)

Allen Consulting's conclusion is:

> *Based on economic principles, multi-part fees are the most likely to pass the criteria set out in clause 2.11.1(b) of the Rules and section 50 of the [NEL], as well as satisfying the NEM objectives in relation to economic efficiency. Care must be taken in the specific design of the multi-part fees; particularly, in order to satisfy the reflective of extent of involvement test, multi-part fees should be designed so that those Participants who have a greater involvement with NEMMCO's activities should pay more in fees than those Participants with a lower level of involvement. In this respect, the design of multi-part fees may take on some of the features of Fully Distributed Cost pricing.*
>
> *It should also be emphasised that it is not necessary for all Participants to be charged multi-part fees in order to satisfy clause 2.11.1 of the Rules and efficiency tests. For example, in practice, while it may be a simple matter to charge a fixed component of fees to one class of Participants, it may not be possible, at least not in a simple way, to charge a fixed fee to another class. In such a case, the latter class may simply be charged a variable fee.*[66]

10.3 Structure of fees levied on Generators and MNSPs

Turning now to consider the structure of fees to be levied on particular categories of Participants, Allen Consulting considers the most appropriate structure of fees for Generators and MNSPs and states that:

> *Two kinds of fixed fees on Generators which would satisfy the criteria set out in clause 2.11.1(b) of the Rules and section 50 of the NEL, as well as satisfying the NEM objective of efficiency, are fees based on historical capacity, and fees based on historical amounts of electricity scheduled.*
>
> *Arguments can be made for both types of fees and, in fact, both types were levied on Generators following the 2003 Fee Determination. The case for levying both types of fixed fees is that there are different types of Generators with different characteristics and it is reasonable to set a fee structure that does not unduly favour or disfavour any particular type.*
>
> *…*
>
> *In the circumstances, a combination of historical capacity and historical energy scheduled forms a reasonable basis for the setting of fixed fees on Generators.*[67]

66 Chapter 3.6 of the Allen Consulting report.
67 Chapter 4.3 of the Allen Consulting report.

NEMMCO notes that fees for Generators and MNSPs under the current fee structure were also levied on this basis. The 2003 Fee Determination sets out in detail the reasoning underlying the current basis for levying these fees.

Allen Consulting also considered possible mechanisms for levying a variable fee on Generators and MNSPs and concluded that there did not seem to be any practical basis for doing so[68].

NEMMCO agrees with Allen Consulting's recommendations that fees for Generators[69] and MNSPs be structured using a combination of historical capacity and historical energy scheduled. Of the proportion of allocated costs apportioned to a category of Generators/MNSPs, 50% will be collected on the basis of MWh of energy scheduled or metered in the previous calendar year, and 50% will be collected on the basis of the higher of the greatest registered capacity and highest notified maximum capacity in the previous calendar year. A generating unit that is classified as both a non market and also a non scheduled generating unit is not taken into account for the purpose of these calculations.

10.4 Structure of fees levied on Market Customers

The budgeted revenue requirements allocated to Market Customers include a portion related to NEMMCO's general budgeted revenue requirements, and also all of NEMMCO's FRC budgeted revenue requirements.

Allen Consulting also looked at the most appropriate structure for levying fees on Market Customers. It concluded that there did not appear to be any satisfactory options for levying fixed fees on Market Customers[70]. In relation to variable fees, Allen Consulting stated:

> *The most obvious candidate here is a fee based on load in the current year. This type of fee has been levied in the past. It would pass all the clause 2.11.1 criteria and also be reasonably efficient, even though it might be expected to be passed on to end users. Because the quantum of fees to be levied on Market Customers would be likely to be small relative to their total costs the effect on energy prices and thus energy demand would be expected to be small, so the efficiency cost of this variable fee would also be expected to be small.*[71]

Accordingly, NEMMCO has decided that budgeted revenue requirements allocated to Market Customers will be recovered by way of fees structured on the basis of load in the current year. They will be collected on the basis of MWh settled in spot market transactions in each billing period using a rate set on the basis of forecast total MWh for the current year.

10.5 Structure of Incremental Service fees (including registration fees)

See the discussion in sections 8.5 and 8.6 of this Determination and Report.

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68 See chapter 4.3 of the Allen Consulting report.

69 Except Non-Market Non-Scheduled Generators.

70 See chapter 4.3 of the Allen Consulting report.

71 Chapter 4.3 of the Allen Consulting report.

10.6 Participant Compensation Fund

Under clause 2.11.3(b)(8) of the Rules, the funding requirements (if any) for the Participant Compensation Fund must only be recovered from Scheduled Generators and Scheduled Network Service Providers.

The last time there was a funding requirement for the Participant Compensation Fund, it was recovered by a fee structured on the basis of a rate per dollar for sent out energy. Allen Consulting has, however, recommended that general fees for Generators and MNSPs be structured using a combination of historical capacity and historical energy scheduled (see section 10.3 of this Determination and Report).

On the basis of these recommendations, and for consistency with the general fees levied on Generators and MNSPs, NEMMCO considers that if the Participant Compensation Fund is at any stage depleted and additional funding is required under clause 2.11.3(b)(8) from Scheduled Generators and Scheduled Network Service Providers, those fees would be collected on the same basis as the NEMMCO general fees allocated to Generators and MNSPs (as discussed in section 10.3), with any necessary changes.

11 Duration of New Structure of Participant Fees

In the submissions received, TransGrid suggested that the next fee determination should have a duration of 5 years, and the NGF and ERAA believed that the duration should be "at least" 5 years[72].

A number of competing considerations impact on the optimal period for the new structure of Participant fees. On the one hand, there is an advantage in the predicability and certainty of Participant fees and their structure and, therefore, having the structure apply over a longer period. On the other hand, the reflective of involvement criterion suggests that, as circumstances change, the structure of Participant fees is likely to need adjustment.

The NEM commenced 7 years ago. Operationally, the NEM is now a mature market and there is more experience to draw on in order to allocate costs on the basis of NEMMCO's existing functions.

Given the basis on which NEMMCO has arrived at the proposed new structure of Participant fees, it is likely that a requirement to change that structure will only arise where there is some change in the functions that NEMMCO performs.

As a result of the recent changes to the regulatory arrangements underpinning the NEM, there is a clear and predictable institutional framework within which the market will develop over the foreseeable future.

The Rules also now contain a framework for dealing with significant market developments between fee determinations that did not exist in the early days of the NEM. NEMMCO may declare any of the following to be a declared NEM project:

(a) a major development to the market;

(b) a major change to a function, responsibility, obligation or power of NEMMCO under the Rules; or

(c) a major change to any of the computer software or systems NEMMCO uses in the performance of any of its functions, responsibilities, obligations or powers under the Rules.

When NEMMCO determines a project to be a declared NEM project, it must also:

(a) determine the start date for recovery of the associated costs for the project and the period or periods over which recovery will occur; and

(b) the structure of an additional Participant fee to be used in the recovery of those costs until the next general fee determination.

In making these determinations, NEMMCO must comply with the Rules consultation procedures.

[72] TransGrid Submission, p.2, and NGF and ERAA Submission, p.2.

In its submission, TransGrid commented that:

> *This five (5) year period also accommodates sufficient flexibility and responsiveness required to ensure a Participant Fee structure remains relevant and reflective of the market*[73].

Another consideration is that, in the electricity industry, most pricing determinations made by the national regulator (previously the ACCC, now AER) and State regulators, such as the Essential Services Commission of Victoria, the Independent Pricing and Regulatory Tribunal of NSW and the Queensland Competition Authority, in respect of the regulated activities of TNSPs and DNSPs are for five years.

The requirements of the Rules mean that the process of determining a structure of Participant fees is time consuming and expensive for the NEM.

Having regard to these competing considerations, NEMMCO believes that a duration of five years for the new structure for Participant fees (ie commencing 1 July 2006 until 30 June 2011) strikes the right balance.

[73] TransGrid Submission, p.2.

12 Other Issues

12.1 Participant Compensation Fund

Clause 3.16.1 of the Rules requires NEMMCO to establish a Participant Compensation Fund for the purpose of paying compensation to Scheduled Generators and Scheduled Network Service Providers for scheduling errors in certain circumstances.

Clause 3.16.1(c) of the Rules provides for a funding requirement for the Participant Compensation Fund.

As it currently contains the required funding level, NEMMCO has, for some years, not included in its budgeted revenue requirements a component for the Participant Compensation Fund. If the amount in the fund drops below the required level so that there is a funding requirement under clause 3.16.1 of the Rules, NEMMCO will include the funding requirement in its budgeted revenue requirements and that amount will be collected through the Participant Compensation Fund component.

Under clause 2.11.3(b)(8) of the Rules, the funding requirements of the Participant Compensation Fund must only be recovered from Scheduled Generators and Scheduled Network Service Providers.

12.2 Economic advice

NEMMCO considers that it is likely that there is a range of options for the allocation of NEMMCO's costs and structure of fees that are likely to satisfy, to varying degrees, the applicable criteria. In addition, there is likely to be a number of competing, but still validly held, opinions of economists in respect of which allocation and structure options are most likely to promote economic efficiency.

NEMMCO is conscious that the economic advice it has received in respect of the previous Fee Determinations, in some respects, differs. NEMMCO agrees with the observations of the Second Group in the 2000 Fee Determination dispute:

> *The possible economic conclusions involve a broad spectrum ranging from the obvious to the debatable and to the barely conceivable. There is no one correct answer and there is room for legitimate differences of opinion. The process of decision making becomes of necessity a process of striking a balance among various competing interests in the terms of the applicable Code policy guidelines* [74].

12.3 Participant fee components

Clause 2.11.1(c) of the Rules anticipates, but does not require, that Participant fees may comprise a number of components including:

(a) registration fees, comprising an annual fee payable by each person for each Registered Participant category in which they are registered;

[74] Decision of Second Group on Amended Dispute Reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraph 4.4.

(b) ancillary service fees, to recover NEMMCO's budgeted revenue requirements in relation to its procurement of non-market ancillary services;

(c) power system operations fees, to recover NEMMCO's budgeted revenue requirements in relation to its power system operation activities described in clause 2.11.3(b)(2) of the Rules;

(d) metering fees to recover NEMMCO's budgeted revenue requirements for the collection, storage and processing of metered data;

(e) billing and settlements fees, to recover NEMMCO's budgeted revenue requirements as described in clause 2.11.3(b)(4) of the Rules; and

(f) administration fees, to recover the remainder of NEMMCO's budgeted revenue requirements.

For the purposes of formulating its determination, NEMMCO has considered various possible fee components. In particular, NEMMCO carefully considered the extent of involvement by categories of Registered Participants in certain NEMMCO operations, for example, Power System Security and Market Operation.

It is not necessary, however, to adopt a separate fee component in respect of each of its outputs in order to allocate the relevant costs in accordance with the reflective of involvement and other criteria. This has been achieved through the aggregation of cost components and their allocation in aggregate to the relevant categories.

Consequently, the separate fee components NEMMCO considers appropriate are as follows:

(a) NEMMCO general fees: allocated cost component (Part A[75]);

(b) NEMMCO general fees: administration and other cost component (Part B);

(c) NEMMCO FRC fees: FRC establishment cost component (Part C);

(d) NEMMCO FRC fees: FRC operations component (Part D);

(e) registration fees and Incremental Services fees component (Part E); and

(f) Participant Compensation Fund component.

For the purposes of clause 3.15.8(g) of the Rules, "the largest single fixed component of Participant fees" is the NEMMCO general fees: allocated cost component.

[75] The references to Parts in this section are to be read with Figure 1: Overview of fee structure determination.

12.4 Fee structure comparisons

Chapter 5 of the Allen Consulting report contains an analysis of the fee structures used by other electricity market operators in Australia and around the world, to the extent that it has been possible to obtain that information.

That analysis shows that each market has adopted a structure appropriate to its own regulatory environment and circumstances. While the analysis is interesting, it is not possible to draw any specific guidance for this current determination.

NEMMCO notes that none of the other markets Allen Consulting has looked at require the market operator to determine its own fee structure. The requirement under clause 2.11.1 appears to be unique in requiring NEMMCO to undertake this task in accordance with broad criteria. Instead, the rules governing each of the other markets either sets out the structure (some providing more detail than others), or provides for some other mechanism.

This effectively takes this very difficult, and sometimes controversial, decision out of the hands of the market operator. Instead, the market operator is charged generally with performing its functions efficiently, and its annual budget is converted to fees by a more or less formulistic approach provided for by the market rules. For example, in New Zealand, the *Electricity (Levy of Industry Participants) Regulations 2005 (NZ)* provide for levies to be payable by three classes of industry participants:

(a) Generators – participants who sell electricity in the wholesale market;

(b) Purchasers – participants who buy electricity in the wholesale market; and

(c) Distributors – participants who convey electricity.

The Regulations prescribe a detailed three step process for calculating fees, whereby the costs associated with certain operations are allocated in specific proportions actually prescribed in the Regulations to these classes of industry participants.

NEMMCO believes that there is merit in considering a similar approach in the NEM, now that the market is more settled. NEMMCO, Registered Participants and end users would all benefit from long-term certainty in this area. A more prescriptive approach will also remove the costs associated with undertaking the current determination process for the NEM.

13 Glossary

AEMC	Australian Energy Markets Commission
AER	Australian Energy Regulator
AGL	AGL Electricity Limited
Allen Consulting	The Allen Consulting Group
Allen Consulting report	Report produced by Allen Consulting, which is set out in Attachment F
B2B	Business to business communication. In the context of the NEM, B2B are communications that primarily occur between Market Customers and DNSPs relating to the transfer of end use customers.
Citipower	Citipower Pty
Code	The former National Electricity Code, now replaced by the Rules
Consulted Person	Has the meaning given in clause 8.9(b) of the Rules
CPI	Consumer Price Index as published by the Australian Bureau of Statistics (Cat no. 6401.0) for All Groups, Weighted Average of Eight Capital Cities, or if that index ceases to be published, an equivalent index selected by NEMMCO
DNSPs	Distribution Network Service Providers
Draft Determination and Report	The Draft Determination and Report on the Structure of Participant Fees under clause 2.11 of the National Electricity Rules issued by NEMMCO on 22 December 2005
ERAA	Energy Retailers Association of Australia Inc
First Stage Notice	The Notice of First Stage of Rules Consultation issued on 13 September 2005, set out in Attachment A.
FRC	Full retail competition
Ergon Energy	Ergon Energy Pty Ltd
Incremental Service	A service that, in NEMMCO's opinion, is provided to a Participant or other person where the recipient is receiving some benefit over and above Participants of the relevant class – see section 8.5 of this Determination and Report
IEC	Information Exchange Committee established under clause 7.2A.2 of the Rules
Marubeni	Marubeni Australia Power Services Pty Limited

MNSPs	Market Network Service Providers
NEL	National Electricity Law
NEM	National Electricity Market
NEM objective	The National Electricity Market objective contained in section 7 of the National Electricity Law
NEMMCO	National Electricity Market Management Company Limited
NEMMCO Activity Survey and Cost Analysis	The NEMMCO Activity Survey and Cost Analysis, which is set out in Attachment D
NGF	National Generators Forum
NMI	National Meter Identifier
non market non scheduled generating unit	A *generating unit* that is classified as a *non-market generating unit* and also a *non-scheduled generating unit.*
Non-Market Non-Scheduled Generator	A *Non-Market Generator* that is also a *Non-Scheduled Generator*.
non market scheduled generating unit	A *generating unit* that is classified as a *non-market generating unit* and also a *scheduled generating unit.*
Non-Market Scheduled Generator	A *Non-Market Generator* that is also a *Scheduled Generator*
NRF	National Retailers Forum
NSP	Network Service Provider
Powercor	Powercor Australia Ltd
Retailer	Market Customers that are licensed under the laws of a participating jurisdiction as a retailer
Rules	National Electricity Rules
SCI	NEMMCO's Statement of Corporate Intent and Budget for 2005/2006
Second Group	The group of three legal and economic experts appointed under Chapter 8 of the Code to resolve the dispute under the Code concerning the 2000 Fee Determination
Second Stage Notice	The Notice of Second Stage of Rules Consultation issued on 22 December 2005, set out in Attachment C.

SP AusNet	SPI Electricity Pty Ltd (trading as SP AusNet)
Stage 1	The first stage in the consultation process leading up to the issuing of this Determination and Report, which was started by the First Stage Notice.
Stage 2	The second stage in the consultation process leading up to the issuing of this Determination and Report, which was started by the Second Stage Notice.
TNSPs	Transmission Network Service Providers
UED	United Energy Distribution Pty Ltd
2000 Fee Determination	The Determination of the Structure of Participant Fees Under Clause 2.11 of the National Electricity Code dated 31 March 2000
2003 Fee Determination	The Determination of the Structure of Participant Fees Under Clause 2.11 of the National Electricity Code dated 26 March 2003

Attachment A – Notice of First Stage of Rules Consultation

Notice of First Stage of Rules Consultation

National Electricity Rules - clause 2.11.1

Structure of Participant Fees

This notice informs all Registered Participants[76], Intending Participants, interested parties and any other persons NEMMCO thinks appropriate ("Consulted Persons") that NEMMCO is conducting a consultation on the structure of Participant fees.

This consultation is being conducted under clause 2.11.1 of the National Electricity Rules ("the Rules") in accordance with the Rules consultation procedures detailed in clause 8.9 of the Rules.

1. Date of notice

This Notice of First Stage of Rules Consultation is issued on 13 September 2005.

2. Objectives of the consultation

The objectives of the consultation are to:

- To provide Consulted Persons with the opportunity to have input into, the development of the structure of Participant fees that will apply from 1 July 2006; and
- To ensure that Consulted Persons are properly informed about the proposed and the final outcome.

3. Background

NEMMCO is required to develop, review and publish the structure of Participant fees that will apply from 1 July 2006.

4. Particulars of Matters under Consultation

Clause 2.11.1 of the Rules provides:

(a) *NEMMCO* must develop, review and publish, in consultation with *Registered Participants* and *interested parties* and such other persons as *NEMMCO* thinks appropriate, in accordance with the *Rules consultation procedures*, the structure (including the introduction and determination) of *Participant fees* for such periods as *NEMMCO* considers appropriate.

(b) The structure of *Participant fees* must, to the extent practicable, be consistent with the following principles:

(1) the structure of *Participant fees* should be simple;

(2) *Participant fees* should recover the budgeted revenue requirements for *NEMMCO* determined under clause 2.11.3 on a basis where:

(i) recurring expenditure requirements and payments are recovered in the year of expenditure or payment (or the following year, should there be a revenue shortfall);

[76] Italicised terms are defined in the National Electricity Rules.

(ii) capital expenditures (incurred after *market commencement)* are recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles;

(iii) establishment costs in the nature of:

A. all expenditure (that is not in the nature of capital expenditure) incurred by, and depreciation and amortisation charged to, *NEMMCO* prior to *market commencement*, to the extent that the expenditures have not been funded by the *participating jurisdictions,* are recovered over a period of 10 years from *market commencement*; and

B. [deleted]

C capital expenditure incurred by *NEMMCO* before *market commencement*, to the extent that the expenditure has not been funded by *participating jurisdictions* or recovered under clause 2.11.1(b)(2)(iii)(A) as depreciation or amortisation, is recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles; and

(iv) notwithstanding clauses 2.11.1(b)(2)(i), (ii) and (iii), expenditure incurred by, and depreciation and amortisation charged to, *NEMMCO* associated with a *declared NEM project* are recovered from the start date and over the period determined for that *declared NEM project* under clauses 2.11.1(bb) or 2.11.1(bd). Amounts associated with a *declared NEM project* determined in accordance with this clause are to be recovered through an additional *Participant fee* determined in accordance with clauses 2.11.1(bb) or 2.11.1(bd) until the next general determination of all *Participant fees* is made under clause 2.11.1(a);

(3) the components of *Participant fees* charged to each *Registered Participant* should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* involve that *Registered Participant*;

(4) *Participant fees* should not unreasonably discriminate against a category or categories of *Registered Participants*; and

(5) the fixed component of *Participant fees* for a *Market Customer* who:

(i) is registered with *NEMMCO* solely for the purpose of providing *market ancillary services*; and

(ii) does not classify any of its *market loads* as a *scheduled load*,

may be zero.

(ba) *NEMMCO* may determine any of the following projects to be a *declared NEM project*:

(1) a major development to the *market*;

(2) a major change to a function, responsibility, obligation or power of *NEMMCO* under the *Rules*; or

(3) a major change to any of the computer software or systems which NEMMCO uses in the performance of any of its functions, responsibilities, obligations or powers under the *Rules*.

(bb) When *NEMMCO* determines a project to be a *declared NEM project* under clause 2.11.1 (ba), it must also determine the start date for recovery and the period or periods over which recovery will occur for the *declared NEM project*. *NEMMCO* must also determine the structure of the additional *Participant fee* to be used in the recovery of costs associated with a *declared NEM project* until the next general determination of all *Participant fees* is made under clause 2.11.1(a).

(bc) In making determinations under clauses 2.11.1(ba) and (bb), *NEMMCO* must comply with the *Rules consultation procedures*.

(bd) The introduction and facilitation of full retail competition is taken to have been determined to be *declared NEM project* under clause 2.11.1(ba) and *NEMMCO* will be entitled to recover through *Participant fees* expenditure incurred by, and depreciation and amortisation charged to, *NEMMCO* in respect of full retail competition. The period or periods over which recovery will occur for this *declared NEM project* will be determined by *NEMMCO* using the *Rules consultation procedures*. If any amounts associated with the introduction and facilitation of full retail competition are to be recovered prior to the

next general determination of all *Participant fees* under clause 2.11.1(a), such recovery must be through an additional *Participant fee* determined using the *Rules consultation procedures*.

(c) The components of the *Participant fees* may include, but are not limited to:

(1) registration fees, comprising an annual fee payable by each person for each *Registered Participant* category in which they are registered;

(2) *ancillary service fees*, to recover *NEMMCO's* budgeted revenue requirements in relation to its procurement of *non-market ancillary services*;

(3) *power system* operations fees, to recover *NEMMCO's* budgeted revenue requirements in relation to its *power system* operation activities described in clause 2.11.3(b)(2);

(4) *metering* fees to recover NEMMCO's budgeted revenue requirements for the collection, storage and processing of *metered data*;

(5) billing and *settlements* fees, to recover *NEMMCO's* budgeted revenue requirements as described in clause 2.11.3(b)(4); and

(6) administration fees, to recover the remainder of *NEMMCO's* budgeted revenue requirements;

and each component of the *Participant fees* may take into account adjustments which may be appropriate in light of the matters described in clauses 2.11.3(b)(7) or (8).

(d) In undertaking the process described in clause 2.11.1(a), *NEMMCO* must consider other fee structures in existence which it thinks appropriate for comparison purposes.

(e) *NEMMCO* must publish to *Registered Participants* and to such other persons as *NEMMCO* thinks appropriate, the structure of *Participant fees* determined, the methods used in determining the structure and an assessment of the extent to which the structure complies with the principles set out in clause 2.11.1(b) at least 3 months prior to the implementation of the structure.

5. The consultation process

Following is an outline of the consultation process, including key dates. Please note that these dates are proposed dates and may be subject to change by NEMMCO.

Process	Date
Closing date for submissions received in response to this Notice of First Stage of Rules Consultation	Friday, 28 October 2005
Public Forum on Initial Notice of Consultation and Issues Paper	Currently, proposed date is Friday, 11 November 2005
Publication of the Draft Determination and invitation to make submissions in response to the Draft Determination	Currently, proposed date is Friday, 22 December 2005
Closing date for submissions received in response to the Draft Determination	Currently, proposed date is Friday, 17 February 2006
Public Forum on Draft Determination	Currently, proposed date is Friday, 24 February 2006
Publication of the Final Determination	Currently, proposed date is Friday, 31 March 2006

6. Invitation to Make Submissions

NEMMCO invites written submissions on the structure of Participant fees that will apply from 1 July 2006.

As part of previous consultations on the Participant fee structure, NEMMCO published reports from its advisors together with a final determination. These reports can be accessed by contacting NEMMCO; see Part 10 of this Notice for contact details.

As part of this review, NEMMCO would welcome views on any or all of these previous reports, particularly as they apply to this consultation process in the context of the current NEM or any other relevant material.

NEMMCO would also welcome views on any of the matters raised in the attached Issues Paper.

Please identify any information in your submission that you consider to be confidential and provide the reasons why you wish that information to be treated as confidential. NEMMCO is required, subject to the confidentiality provisions of the Rules, to make available copies of any material submitted to it as part of the consultation. Accordingly, NEMMCO reserves the right to publish material that it does not consider to be confidential under the Rules, despite your submission as to its confidentiality.

You should also note that material identified as confidential may be accorded less weight in the decision-making process than material that is published.

7. Closing date for submissions

Submissions in response to this Notice of First Stage of Rules Consultation should reach NEMMCO by 5:00pm on Friday, 28 October 2005.

NEMMCO has a discretion to consider late submissions. Any late submission should explain:

i. the reason for the lateness; and

ii. the detriment to you if NEMMCO fails to consider your submission.

8. Meetings/Public Forums

In accordance with clause 8.9(e) of the Rules, you may request a meeting, if you consider a meeting necessary or desirable in connection with the matter under consultation. This request should be included in the written submission, along with the reasons for the request.

You should bear in mind that NEMMCO proposes to hold two public forums as part of this consultation.

9. Further information

An Issues Paper is attached to this Notice of First Stage of Rules Consultation.

10. Contact Details

NEMMCO prefers that submissions be forwarded in electronic format as they will be published on the NEMMCO website.

Please send all e-mail submissions to: Fee_determination@nemmco.com.au

Alternatively, post or fax submissions to:

Mr Brett Hausler
General Manager, Corporate Services
NEMMCO
Level 12
15 William Street
MELBOURNE VIC 3000

Fax: (03) 9648 8653

Attachment B – Copy of Issues Paper

An Issues Paper was published in conjunction with the first stage of this consultation. For convenience, a copy of that paper is included here as Attachment B in the Draft Determination and Report.

STRUCTURE OF PARTICIPANT FEES

Issues Paper

1 INTRODUCTION

Section 50 of the National Electricity Law ('the NEL') requires NEMMCO to perform the functions detailed in section 49 "efficiently and on a full cost recovery but not for profit basis".

Clause 2.11.1 of the National Electricity Rules ('the Rules') requires NEMMCO to develop, review and publish the structure of Participant fees. The structure of Participant fees details the manner in which NEMMCO's budgeted revenue requirements, determined in accordance with clause 2.11.3 of the Rules, are recovered.

The current structure of Participant fees was determined in March 2003. At that time, NEMMCO published a report detailing the rationale for the current structure of Participant fees. In making its March 2003 determination, NEMMCO considered various issues and, in accordance with clause 2.11.1 of the then National Electricity Code ('the Code'), developed a structure of Participant fees that would apply until 30 June 2006.

The issues canvassed by NEMMCO in making the March 2003 determination are also likely to be relevant considerations for the determination of the structure of Participant fees which is to apply from 1 July 2006. In addition, National Electricity Market ('NEM') developments since June 2003, including the introduction of the new NEL and Rules, new institutions and the commencement of Full Retail Competition in some Jurisdictions, may have given rise to new considerations relevant to the structure of Participant fees.

2 ISSUES FOR COMMENT

In developing and reviewing the structure of Participant fees for the post-1 July 2006 period, NEMMCO is bound by the applicable provisions of the NEL and clause 2.11.1 of the Rules.

NEMMCO invites comments on how Participant Fees to apply from 1 July 2006 should be structured, including any issues canvassed in NEMMCO's March 2000 and March 2003 reports and the following:

2.1 NEM developments

As referred to in the Introduction, there have been a number of developments in the NEM since June 2003.

In particular, previous Participant fee determinations were made in the context of market objectives, Code objectives and NEMMCO objectives in Chapter 1 of the Code. One of the amendments brought about by the introduction of the Rules and the amendments to the

NEL was to replace these with a single objective prescribed by section 7 of the NEL and the obligation on NEMMCO under section 50 of the NEL, as outlined above.

NEMMCO welcomes comments on the implications of these changes (particularly the new NEM objective) in the context of determining the structure of Participant fees.

2.2 General Issues arising out of Clause 2.11.1 of the Rules

Clause 2.11.1 of the Rules imposes a number of requirements on NEMMCO. In this section, the relevant parts of the clause are cited, followed by suggestions for comments.

(a) Period of Structure of Participant Fees

Clause 2.11.1(a) states:

> ***NEMMCO*** *must develop, review and publish, in consultation with* ***Registered Participants*** *and* ***interested parties*** *and such other persons as NEMMCO thinks appropriate, in accordance with the* ***Rules consultation procedures****, the structure (including the introduction and determination) of* ***Participant fees*** *for such periods as* ***NEMMCO*** *considers appropriate.*

Previous determinations on the structure of Participant fees have set the structure for a period of three years. In the current consultation, NEMMCO will have to determine the period of time over which the new structure of Participant fees will apply.

Comments are welcome on the length of time over which the structure of Participant fees from 1 July 2006 should apply.

(b) Simplicity

Clause 2.11.1(b) of the Rules states that, to the extent practicable, the structure of Participant fees should be consistent with a number of principles.

One of those is paragraph (1), which states that 'the structure of Participant fees should be simple'.

Other considerations, for example, applying the causality principle, fostering economic efficiency or applying generally accepted accounting principles may give rise to a more complex structure for Participant fees than would otherwise be the case.

Comments on the interpretation of the term "simple" as it applies to the structure of Participant fees are welcome, as well as to what extent simplicity can be achieved in the context of the other relevant principles NEMMCO must adhere to.

(c) Basis of Recovery of Budgeted Revenue Requirements

Clause 2.11.1(b) of the Rules states that, to the extent practicable, the structure of Participant fees should be consistent with a number of principles, including paragraph (2), which states:

> ***Participant fees*** *should recover the budgeted revenue requirements for* ***NEMMCO*** *determined under clause 2.11.3 on a basis where:*
>
> *(i) recurring expenditure requirements and payments are recovered in the year of expenditure or payment (or the following year, should there be a revenue shortfall);*

*(ii) capital expenditures (incurred after **market commencement**) are recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles;*

(iii) establishment costs in the nature of:

*A. all expenditure (that is not in the nature of capital expenditure) incurred by, and depreciation and amortisation charged to, **NEMMCO** prior to **market commencement**, to the extent that the expenditures have not been funded by the **participating jurisdictions**, are recovered over a period of 10 years from **market commencement**; and*

B. [deleted]

*C. capital expenditure incurred by **NEMMCO** before **market commencement**, to the extent that the expenditure has not been funded by **participating jurisdictions** or recovered under clause 2.11.1(b)(2)(iii)(A) as depreciation or amortisation, is recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles; and*

*(iv) notwithstanding clauses 2.11.1(b)(2)(i), (ii) and (iii), expenditure incurred by, and depreciation and amortisation charged to, **NEMMCO** associated with a **declared NEM project** are recovered from the start date and over the period determined for that **declared NEM project** under clauses 2.11.1(bb) or 2.11.1(bd). Amounts associated with a **declared NEM project** determined in accordance with this clause are to be recovered through an additional **Participant fee** determined in accordance with clauses 2.11.1(bb) or 2.11.1(bd) until the next general determination of all **Participant fees** is made under clause 2.11.1(a);*

It should be noted that, apart from the introduction and facilitation of Full Retail Competition, there are no declared NEM projects at the date of this Issues Paper.

Comments are welcome on the implications of these provisions on the structure of Participant fees.

(d) Causality and Allocation of Costs

Clause 2.11.1(b) of the Rules states that, to the extent practicable, the structure of Participant fees should be consistent with a number of principles, including paragraph (3), which states:

> *the components of **Participant fees** charged to each **Registered Participant** should be reflective of the extent to which the budgeted revenue requirements for **NEMMCO** involve that **Registered Participant***

Efficiency and equity considerations generally lead to the principle that those whose actions give rise to a cost (and who generally benefit from the service or function) should pay, and that fee levels should be set to reflect the costs involved. Transaction costs, or technical limitations, however, may prevent the identification of the party or parties who directly caused the need for the service or function, or there may be significant costs that are shared across a number of different services or functions (common costs). If cost drivers cannot be tracked back to individual Participants or classes of Participants, it will be necessary to allocate costs using different principles.

Comments are invited on how NEMMCO should treat this requirement.

(e) Participant Categories and Unreasonable Discrimination

Clause 2.11.1(b) of the Rules states that, to the extent practicable, the structure of Participant fees should be consistent with a number of principles, including paragraph (4), which states:

> ***Participant fees*** *should not unreasonably discriminate against a category or categories of* ***Registered Participants***

Comments are welcome on:

- the most appropriate Participant categories for the purposes of the new structure of Participant fees; and
- the meaning of the expression to 'not unreasonably discriminate against a category or categories of Registered Participants' in this context.

(f) Market Ancillary Services

Clause 2.11.1(b) of the Rules states that, to the extent practicable, the structure of Participant fees should be consistent with a number of principles, including paragraph (5), which states:

> *the fixed component of* ***Participant fees*** *for a* ***Market Customer*** *who:*
>
> *(i) is registered with* ***NEMMCO*** *solely for the purpose of providing* ***market ancillary services****; and*
>
> *(ii)* ***does not classify any of its*** *market loads* ***as a*** *scheduled load,*
>
> ***may be zero****.*

Comments are invited on whether this is an appropriate outcome.

(g) Weight to Specified Categories

Comments are welcome on the relative weight NEMMCO should give to each of the principles enunciated in clause 2.11.1(b).

(h) Components of Participant Fees

Clause 2.11.1(c) of the Rules provides an inclusive list of components that the Participant fees might comprise. These are:

> *(1) registration fees, comprising an annual fee payable by each person for each* ***Registered Participant*** *category in which they are registered;*
>
> *(2)* ***ancillary service fees****, to recover* ***NEMMCO's*** *budgeted revenue requirements in relation to its procurement of* ***non-market ancillary services****;*
>
> *(3)* ***power system*** *operations fees, to recover* ***NEMMCO's*** *budgeted revenue requirements in relation to its* ***power system*** *operation activities described in clause 2.11.3(b)(2);*
>
> *(4)* ***metering*** *fees to recover* ***NEMMCO's*** *budgeted revenue requirements for the collection, storage and processing of* ***metered data****;*

*(5) billing and **settlements** fees, to recover **NEMMCO's** budgeted revenue requirements as described in clause 2.11.3(b)(4); and*

(6) administration fees, to recover the remainder of NEMMCO's budgeted revenue requirements;

*and each component of the **Participant fees** may take into account adjustments which may be appropriate in light of the matters described in clauses 2.11.3(b)(7) or (8).*

NEMMCO welcomes comments on the appropriate components of Participant fees to be included in the new structure.

The structure of Participant fees determined by NEMMCO in 2000 and 2003 included fixed and variable (volumetric) components.

Allocative efficiency is enhanced where all Registered Participants take into account the (marginal or incremental) costs their decisions impose on NEMMCO. This suggests that, abstracting from all other considerations, Participant fees should reflect the marginal or incremental costs imposed on NEMMCO by participant decisions and actions, however, where the costs associated with NEMMCO functions are mainly fixed or common, fees that are solely based on marginal costs or incremental costs alone may not recover the total costs of NEMMCO.

In this scenario, allocative efficiency requires the remainder of these costs be recovered from other fees in the manner which least distorts participants' economic decision making. Arguably this may be achieved by relying more heavily on capacity-related (or other types of fixed, ie not volume-related) fees, however, a structure of Participant fees which has mainly capacity-related (or other types of fixed) components may result in actual fees for some types of Registered Participants that are large when compared against those paid by other types of Registered Participants.

Comments are welcome on the adoption of capacity-based fees (or other types of fixed fees) and volume-related (or variable) components and the extent to which the principles specified in clauses 2.11.1(b)(3), (4) and (5) and 2.11.1(c)) should be addressed through the adoption of a structure of Participant fees that has either, or both, of these components.

(i) Comparison with other Fee Structures

Clause 2.11.1(d) of the Rules states that 'NEMMCO must consider other fee structures in existence which it thinks appropriate for comparison purposes'.

NEMMCO will again be reviewing the structure of fees in some other markets, both domestically and internationally.

Comments are welcome on fee structures found in other relevant markets.

2.3 Weight

Comments are welcome on the relative weight NEMMCO should give to each of the considerations NEMMCO is required to take into account under the NEL and the Rules in determining a new structure of Participant fees.

2.4 Other Issues

(a) Current Structure of Participant Fees

NEMMCO welcomes comments on how the current structure is working, or could be improved.

(b) Full Retail Competition

Full Retail Competition Establishment and Operating Fees are presently charged separately from other Participant fees.

Clause 2.11.1(bd) states that, so far as is practicable:

> *The introduction and facilitation of full retail competition is taken to have been determined to be **declared NEM project** under clause 2.11.1(ba) and **NEMMCO** will be entitled to recover through **Participant fees** expenditure incurred by, and depreciation and amortisation charged to, **NEMMCO** in respect of full retail competition.*

NEMMCO welcomes comments on the current method of setting and charging Full Retail Competition Establishment and Operating Fees.

(c) B2B

NEMMCO is currently recovering the costs associated with its facilitation of B2B communications through Full Retail Competition fees.

Comments are welcome on the method by which NEMMCO's B2B costs should be recovered.

(d) New Control Centre

NEMMCO is building a new control centre in New South Wales to replace its Carlingford facility, which is currently leased.

A suitable site has been purchased and the new high security facility has been specifically designed to meet the NEM's future requirements.

Clause 2.11.1(b)(2)(ii) of the Rules suggests that, to the extent practicable, capital expenditures of this kind are recovered in a manner that is consistent with 'generally accepted accounting principles'.

NEMMCO welcomes comments on the most appropriate way of recovering the expenditures associated with this new control centre (including the costs of acquiring the site), and the period over which those expenditures should be recovered.

(e) Market Services

NEMMCO is required by the Rules to provide certain market service activities, such as the provision of bandwidth services, at the request of Registered Participants.

Comments are welcome on whether the costs associated with these types of activities should be recovered through the more general components of Participant fees or whether specific components of Participant fees should be adopted for

these types of activities to facilitate the recovery of costs from Registered Participants who have requested that those activities be undertaken.

3 CONSULTATION

The consultation timing and contact arrangements are set out in the Notice of First Stage of Rules Consultation, dated 13 September 2005.

Attachment C – Notice of Second Stage of Rules Consultation

Notice of Second Stage of Rules Consultation

National Electricity Rules - clause 2.11.1

Structure of Participant Fees

This Notice of Second Stage of Rules Consultation informs all *Consulted Persons*[77] of the second stage of consultation on the structure of *Participant fees*.

The consultation is being conducted under clause 2.11.1 of the National Electricity Rules (the **Rules**) in accordance with the Rules consultation procedures in clause 8.9 of the Rules.

1. Date of notice

This Notice of Second Stage of Rules Consultation was issued on 22 December 2005.

2. First Stage of Consultation

NEMMCO issued the Notice of First Stage of Rules Consultation on 13 September 2005, together with an Issues Paper.

Five submissions were received on this matter. All submissions have been published on the *NEMMCO* website.

There were no requests for meetings, or a forum.

NEMMCO has considered the issues raised in the submissions and has now produced a Draft Determination and Report.

The Draft Determination and Report is now available to all *Consulted Persons* for their consideration.

3. Objectives of the consultation

The objectives of the consultation are:

- To provide *Consulted Persons* with the opportunity to have input into the development of the structure of *Participant fees* that will apply from 1 July 2006; and

- To ensure that *Consulted Persons* are properly informed about the proposed and the final outcome.

4. Background

NEMMCO is required to develop, review and publish the structure of *Participant fees* that will apply from 1 July 2006.

[77] Italicised terms are defined in the National Electricity Rules.

5. Matter under consultation

Clause 2.11.1 of the Rules provides:

(b) *NEMMCO* must develop, review and publish, in consultation with *Registered Participants* and *interested parties* and such other persons as *NEMMCO* thinks appropriate, in accordance with the *Rules consultation procedures*, the structure (including the introduction and determination) of *Participant fees* for such periods as *NEMMCO* considers appropriate.

(c) The structure of *Participant fees* must, to the extent practicable, be consistent with the following principles:

(1) the structure of *Participant fees* should be simple;

(2) *Participant fees* should recover the budgeted revenue requirements for *NEMMCO* determined under clause 2.11.3 on a basis where:

(i) recurring expenditure requirements and payments are recovered in the year of expenditure or payment (or the following year, should there be a revenue shortfall);

(ii) capital expenditures (incurred after *market commencement)* are recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles;

(iii) establishment costs in the nature of:

A. all expenditure (that is not in the nature of capital expenditure) incurred by, and depreciation and amortisation charged to, *NEMMCO* prior to *market commencement*, to the extent that the expenditures have not been funded by the *participating jurisdictions,* are recovered over a period of 10 years from *market commencement*; and

B. [deleted]

C. capital expenditure incurred by *NEMMCO* before *market commencement*, to the extent that the expenditure has not been funded by *participating jurisdictions* or recovered under clause 2.11.1(b)(2)(iii)(A) as depreciation or amortisation, is recovered through the depreciation or amortisation of the assets acquired by the capital expenditure in a manner that is consistent with generally accepted accounting principles; and

(iv) notwithstanding clauses 2.11.1(b)(2)(i), (ii) and (iii), expenditure incurred by, and depreciation and amortisation charged to, *NEMMCO* associated with a *declared NEM project* are recovered from the start date and over the period determined for that *declared NEM project* under clauses 2.11.1(bb) or 2.11.1(bd). Amounts associated with a *declared NEM project* determined in accordance with this clause are to be recovered through an additional *Participant fee* determined in accordance with clauses 2.11.1(bb) or 2.11.1(bd) until the next general determination of all *Participant fees* is made under clause 2.11.1(a);

(3) the components of *Participant fees* charged to each *Registered Participant* should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* involve that *Registered Participant*;

(4) *Participant fees* should not unreasonably discriminate against a category or categories of *Registered Participants*; and

(5) the fixed component of *Participant fees* for a *Market Customer* who:

(i) is registered with *NEMMCO* solely for the purpose of providing *market ancillary services*; and

(ii) does not classify any of its *market loads* as a *scheduled load*,

may be zero.

(ba) *NEMMCO* may determine any of the following projects to be a *declared NEM project*:

(1) a major development to the *market*;

(2) a major change to a function, responsibility, obligation or power of *NEMMCO* under the *Rules*; or

(3) a major change to any of the computer software or systems which NEMMCO uses in the performance of any of its functions, responsibilities, obligations or powers under the *Rules*.

(bb) When *NEMMCO* determines a project to be a *declared NEM project* under clause 2.11.1 (ba), it must also determine the start date for recovery and the period or periods over which recovery will occur for the *declared NEM project*. *NEMMCO* must also determine the structure of an additional *Participant fee* to be used in the recovery of costs associated with a *declared NEM project* until the next general determination of all *Participant fees* is made under clause 2.11.1(a).

(bc) In making determinations under clauses 2.11.1(ba) and (bb), *NEMMCO* must comply with the *Rules consultation procedures*.

(bd) The introduction and facilitation of full retail competition is taken to have been determined to be *declared NEM project* under clause 2.11.1(ba) and *NEMMCO* will be entitled to recover through *Participant fees* expenditure incurred by, and depreciation and amortisation charged to, *NEMMCO* in respect of full retail competition. The period or periods over which recovery will occur for this *declared NEM project* will be determined by *NEMMCO* using the *Rules consultation procedures*. If any amounts associated with the introduction and facilitation of full retail competition are to be recovered prior to the next general determination of all *Participant fees* under clause 2.11.1(a), such recovery must be through an additional *Participant fee* determined using the *Rules consultation procedures*.

(d) The components of the *Participant fees* may include, but are not limited to:

(1) registration fees, comprising an annual fee payable by each person for each *Registered Participant* category in which they are registered;

(2) *ancillary service fees*, to recover *NEMMCO's* budgeted revenue requirements in relation to its procurement of *non-market ancillary services*;

(3) *power system* operations fees, to recover *NEMMCO's* budgeted revenue requirements in relation to its *power system* operation activities described in clause 2.11.3(b)(2);

(4) *metering* fees to recover NEMMCO's budgeted revenue requirements for the collection, storage and processing of *metered data*;

(5) billing and *settlements* fees, to recover *NEMMCO's* budgeted revenue requirements as described in clause 2.11.3(b)(4); and

(6) administration fees, to recover the remainder of *NEMMCO's* budgeted revenue requirements;

and each component of the *Participant fees* may take into account adjustments which may be appropriate in light of the matters described in clauses 2.11.3(b)(7) or (8).

(e) In undertaking the process described in clause 2.11.1(a), *NEMMCO* must consider other fee structures in existence which it thinks appropriate for comparison purposes.

(f) *NEMMCO* must publish to *Registered Participants* and to such other persons as *NEMMCO* thinks appropriate, the structure of *Participant fees* determined, the methods used in determining the structure and an assessment of the extent to which the structure complies with the principles set out in clause 2.11.1(b) at least 3 months prior to the implementation of the structure.

6. The consultation process

Following is an outline of the consultation process, including key dates. Please note that these dates are proposed dates and may be subject to change by *NEMMCO*.

Process	**Date**
Closing date for submissions received in response to this Notice of Second Stage of Rules Consultation	Friday, 17 February 2006
Public Forum	Friday, 24 February 2006
Publication of the Final Determination	Friday, 31 March 2006

7. Invitation to make submissions

NEMMCO invites submissions on the Draft Determination and Report on the Structure of Participant Fees.

Please identify any information in your submission that you consider to be confidential and provide the reasons why you wish that information to be treated as confidential. NEMMCO is required, subject to the confidentiality provisions of the Rules, to make available copies of any material submitted to it as part of the consultation. Accordingly, NEMMCO reserves the right to publish material that it does not consider to be confidential under the Rules, despite your submission as to its confidentiality.

You should also note that material identified as confidential may be accorded less weight in the decision-making process than material that is published.

8. Closing date for submissions

Submissions in response to this Notice of Second Stage of Rules Consultation should reach *NEMMCO* by 5:00pm on Friday 17 February 2006.

NEMMCO has a discretion to consider late submissions. Any late submission should explain:

- the reason for the lateness; and
- the detriment to you if *NEMMCO* fails to consider your submission.

9. Public Forum

NEMMCO proposes to hold a public forum on Friday 24 February 2006 as part of this consultation, unless *Consulted Persons* request otherwise in their submissions.

10. Contact details

NEMMCO prefers that submissions be forwarded in electronic format as they will be published on the *NEMMCO* website.

Please send all e-mail submissions to: Fee_determination@nemmco.com.au

Alternatively, post or fax submissions to:

Mr Brett Hausler
General Manager, Corporate Services
NEMMCO
Level 12
15 William Street
MELBOURNE VIC 3000

Fax: (03) 9648 8653

Attachment D – NEMMCO Activity Survey and Cost Analysis

NEMMCO
Activity Survey
&
Cost Analysis

3 March 2006

TABLE OF CONTENTS

1. Introduction

The NEMMCO Participant Fee Working Group (**Working Group**) determined to approach the 2006 Fee Determination from the perspective of Participant involvement with NEMMCO outputs. From a review of the types of activities NEMMCO carries out, or is involved with, 11 key outputs were identified. They are:

- Power System Security
- Power System Reliability
- Market Settlement
- Market Operation
- Prudential Supervision
- Settlement Residue Auctions
- Market Improvement
- Information Dissemination
- Retail Market Improvement
- Data & System Management
- NEMMCO Administration

and are broadly consistent with the outputs used 2003 Cost Activity and Cost Driver Review. The outputs are explained in detail in section 7.2 of the Draft Determination and Report on the Structure of Participant Fees under Clause 2.11 of the National Electricity Rules dated 22 December 2005 (**the Draft Determination and Report**). The outputs comprise 162 activities, which are detailed in Appendix 1.

The approach adopted is as follows:

- Budgeted Revenue Requirements
- The Survey Approach
- Cost Attribution
- Output Cost Review
- Other Specific Costs
- Summary of Outcomes
- Incremental Services Review

2. Budgeted Revenue Requirements

NEMMCO's 2005/2006 budget, as contained in the Statement of Corporate Intent (**SCI**), provides the financial basis for determining the structure of Participant Fees.

The NEMMCO General costs are the basis for the costing activity, which are:

General Costs	**$'000**
Operating Expenses	
Labour & Contractors	30,720
Consultants	4,320
Agency Fees	1,940
Information Technology	4,050
Travel	1,090
Accommodation	1,320
Insurance	4,680
Depreciation	4,530
Finance Charges	1,520
Training & Development	920
Audit	490
Telephone	280
Printing & Stationery	440
Amenities	100
Subscriptions	430
Utilities	220
Directors Fees	675
Other	1,335
Other Revenue to be offset	(570)
Sub-total Operating Expenses	58,490
Establishment Receivable	4,450
Total NEMMCO Fees	62,940

Notes:

1. NEMMCO's budgeted General Fees per the SCI includes an item "contingency", which is designed as a provision for potential budget under recovery to lessen the impact on the subsequent year. For the purpose of the costing activity the item has been removed.
2. Expenses related to Settlement Residue Auctions are not included, as fees are collected separately for these under clause 3.18 of the Rules.
3. "Other Revenue to be offset" includes the fees collected relating to NEMMCO's training courses and interest earned by NEMMCO.
4. All amounts are exclusive of GST.

The FRC costs are reviewed and considered separately; they are:

FRC Costs	$'000
Operating Expenses	
Labour	3,780
Contractors	30
Consultants	480
Office Administration	80
Information Technology	1,340
Travel	100
Accommodation	120
Training	80
Depreciation	370
Legal Costs	100
Market Audit	40
Costs Incurred between Feb 02 – Jun 03	560
Sub-Total Operating Expenses	7,080
Establishment Expenses	
Establishment Receivable	2,060
Depreciation	537
Interest Charges	220
Sub-Total Establishment Expenses	9,630
Total FRC Fees	16,710

Note: All amounts are exclusive of GST

3. The Survey Approach

NEMMCO does not operate a job costing (or activity based costing) system as part of its normal activities. A costing activity, therefore, was undertaken to "build up" the cost of each output.

Having identified the NEMMCO activities and outputs, the next step was to collect the data against those activities. Data was collected by conducting a survey of NEMMCO staff.

The most recent NEMMCO organisation chart was reviewed and positions representative of the range of NEMMCO activities were identified as positions to be surveyed.

A total of 78 positions were surveyed and 65 responses were received. Employees who responded to the survey questionnaire included General Managers (2), Department Heads (10), Team Leaders (20) and Team Members (33). In total, this represents 29% of NEMMCO employees.

As some NEMMCO positions are part time, the survey responses were converted to Full Time Equivalents (FTE). The following comments about the survey refer to FTEs and not the actual number of positions. From the 64.1 FTE survey responses, a further 144.9 positions were modelled and 12.7 positions determined as overheads. Positions were modelled having regard to like positions and within Departments.

In the survey, staff were asked the following question:

> *For the following list of activities, based on your experience to date, what percentage of time, averaged over a year, would you spend on each activity?*

In answering the questions, staff were required to allocate 100% of their time across 162 NEMMCO activities using an Excel template. Reponses were collated within Department groups and then used to model remaining positions within each group. Department results were then collated to produce the aggregated NEMMCO result by activity and, hence, the result by output in Table 1:

Table 1 – Staff Surveyed and Modelled

Service / Output	FTE Surveyed Labour	FTE Modelled Labour	Surveyed and Modelled Labour	FTE Determined as O'heads	Total	%
Power System Security	22.6	55.2	77.8		77.8	35%
Power System Reliability	3.6	9.7	13.2		13.2	6%
Market Settlement	3.0	8.4	11.4		13.4	6%
Market Operations	3.4	6.5	9.9		9.9	4%
Prudential Supervision	1.1	1.5	2.6		2.6	1%
Settlement Residue Auctions	1.0	1.0	2.0		2.0	1%
Wholesale Market Improvement	5.4	6.6	12.0		12.0	5%
Information Dissemination	4.5	10.3	14.9		14.9	7%
Retail Market Improvement	2.7	4.1	6.7		1.9	1%
Data and System Management	6.7	18.2	24.9		27.7	13%
NEMMCO Administration	7.1	17.3	24.4		24.4	11%
Unattributed	3.1	6.2	9.2	12.7	21.9	10%
Total	64.1	144.9	209.0	12.7	221.7	100%
	29%	65%	94%	6%	100%	

Staff were then asked a second question:

> *For each of the activities listed, based on your experience to date, please provide an estimate of the amount (time) of 'immediate interaction' that you had with a specific class of Registered Participant – that is: Market Customers; TNSPs; DNSPs; MNSPs; Generators (Market Scheduled, Market Non Scheduled, Non Market Scheduled, Non Market Non Scheduled).*
>
> *The definition of 'immediate interaction' includes, but is not limited to, the following:*
>
> - *speaking on the telephone;*
> - *meetings or other liaisons;*
> - *reading and interpreting correspondence or representations from Registered Participants;*
> - *preparing correspondence or representations to Registered Participants; and*
> - *other specific activities required to finalise your interaction with that party.*

In answering this question, staff were again required to allocate their time across the 162 NEMMCO activities using a second Excel template. Responses were collated and modelled as for the first survey question.

Based on the surveyed and modelled positions, the survey revealed that 33.9% of time is spent in immediate interaction with Registered Participants. In other words, of the 100% of time allocated to specific activities associated with the outputs, 33.9% is spent in immediate interaction with Participants.

This second question was included for comparison purposes. It was based on the input activity approach used in the 2003 Cost Activity and Cost Driver Review. Results are contained in Appendix 2.

4. Cost Attribution

The next step in the process was to determine how to cost each activity and output. The SCI budgets were used as the basis for a review of the costs by category and consideration of how they might be attributed or assigned to each of the activities and outputs. Labour costs representing 52% of the total cost base were attributed to activities on the basis of the survey of how staff spend their time. And as activities are related to outputs, this essentially built the labour cost of the outputs. In terms of the other costs it was not practical to allocate them across the 162 activities so the focus was on assigning them to the 11 outputs. Table 2 identifies the attribution method used for each cost category.

Table 2 – Cost Attribution Methods

Cost Category	Attribution Method
Labour	Activity costing aggregated to Outputs. NEMMCO budgeted average salary multiplied by FTE.
Consultants	Attributed on basis of relationship to outputs as determined by review of costs within project codes and consultation with departments.
Agency Fees	Attributed to Power System Security
Information Technology	Attributed on basis of analysis of relationship of underlying assets to activities and outputs in consultation with Information Technology
Travel	Attributed to outputs by alignment of NEMMCO cost centres to the outputs.
Accommodation	Attributed to outputs on the basis of the functions of each of the premises. In 2005/06 this includes rent and outgoings. In future periods it is intended to include recovery for the cost of the new NSW control centre land and other capitalised expenses.
Insurance	With the exception of TNSP insurance which is attributed to Power System Security, and that specifically for Settlement Residue Auctions, this could not be specifically attributed - allocated to general overheads
Depreciation	Attributed on basis of analysis of relationship of underlying assets to activities and outputs in consultation with Information Technology
Finance Charges	Relates to establishment costs – allocated to general overheads
Training & Development	Training specific to the Power System Operations group has been allocated between Power System Security, Power System Reliability and Market Operation, otherwise could not be specifically attributed - allocated to general overheads
Audit	Market Audit costs attributed to Power System Security, Power System Reliability, Market Settlement, Market Operation and Prudential Supervision equally. Settlement Residue Auction audit costs attributed specifically with internal and statutory audit costs attributed to general overheads
Telephone	Attributed in proportion to labour time
Printing & Stationery	Allocated to general overheads
Amenities	Attributed in proportion to labour time

Cost Category	Attribution Method
Subscriptions	Attributed on basis of relationship to outputs as determined by consultation with departments
Utilities	Attributed in proportion to accommodation costs
Directors' Fees	Could not be specifically attributed - allocated to general overheads
Other	More than half of these costs relate to maintenance of control centres and general office equipment and have been allocated on the same basis as accommodation. Meals and entertainment were allocated in proportion to labour costs. The remaining costs are general administrative costs that were allocated to NEMMCO Administration.

The surveyed labour time by output was multiplied by the NEMMCO average labour cost to attribute the value of labour to each output. Each line item in the SCI budget was then attributed to the relevant outputs using the attribution methods explained in Table 2. There are essentially 10 key outputs that involve NEMMCO with Registered Participants. A final 11th notional output called "NEMMCO Administration" was used to capture those costs not able to be attributed to one of the Participant involvement outputs. The result is contained in the Table 3.

Of NEMMCO's General Fees of $58.49m, only $41.33m can be specifically attributed to the involvement outputs. As fees for the Settlement Residue Auctions output are recovered separately, the costs attributed to this output are not involved further in the cost activity exercise. This leaves $40.88m as the total of Participant-involved outputs with the remaining $17.16m captured under NEMMCO Administration as Non-Attributable.

Table 3 – Attribution of NEMMCO Costs to Outputs

	Power System Security	Power System Reliability	Market Settlement	Market Operation	Prudential Supervision	Settlement Residue Auctions	Wholesale Market Improvement	Information Dissemination	Retail Market Improvement	Data & System Management	NEMMCO Administration	Total $'000's
Labour & Contractors	10,717	1,822	1,565	1,368	358	270	1,647	2,045	928	3,434	6,376	30,530
Consultants	424	277	302	202	8	78	604	139	696	52	1,538	4,320
Agency Fees	1,940											1,940
Information Technology	1,256	1,053		1,377					81		284	4,050
Travel	142	139	5	129	15	-	56	54	34	144	362	1,090
Accommodation	233	187	33	134	-	-	67	47	46	78	495	1,320
Insurance	400					60					4,220	4,680
Depreciation	1,383	1,174	8	1,548	-	-	15	-	83	-	319	4,530
Finance Charges											1,350	1,350
Training & Development	88	88	42	88	10	7	44	55	25	92	172	710
Audit	70	70	70	70	70	30					110	490
Telephone	98	17	14	13	3	2	15	19	9	31	58	280
Printing & Stationery											440	440
Amenities	35	6	5	4	1	1	5	7	3	11	21	100
Subscriptions		177									253	430
Utilities	77	13	11	10	3	2	12	15	7	25	46	220
Directors' Fees											675	675
Other	301	207	50	87	6	-	46	46	74	75	443	1,335
Contingency												-
Total	17,163	5,229	2,115	5,029	474	451	2,512	2,427	1,986	3,943	17,161	58,490
Attributable	17,163	5,229	2,115	5,029	474		2,512	2,427	1,986	3,943		40,878
Non Attributable											17,161	17,161
Total Costed Outputs	17,163	5,229	2,115	5,029	474	-	2,512	2,427	1,986	3,943	17,161	58,039
Recovered Separately						451						451

5. Cost Allocation to Participants

The Working Group considered how the NEMMCO outputs could be allocated to Registered Participants on the basis of involvement. Details of the allocation are considered in Sections 8.2.2 and 8.2.3 of the Draft Determination and Report. Table 4 shows the proportion of each output involved with each Participant group in percentage terms.

The percentage allocation determined for each Participant group within each output category was then applied to the costed output detailed in Table 3 to obtain the costed outputs by Participant group. This is shown in Table 5, and summarised below:

Participant	$'000's	%
Market Customers	22,642	55.39%
Generators and MNSPs	18,236	44.61%
Total	40,878	100.00%

The result is that 55% of the costed output is involved with Market Customers and 45% is involved with Generators (except for Non-Market Non-Scheduled Generators) and MNSPs.

Table 4 – Allocation on Basis of Involvement

Category of Participant	Power System Security	Power System Reliability	Market Settlement	Market Operation	Prudential Supervision	Settlement Residue Auctions	Wholesale Market Improvement	Information Dissemination	Retail Market Improvement	Data & System Management
Market Customers	50%	75%	51%	50%	25%	Not Allocated - recovered separately	50%	50%	100%	50%
Generators and MNSPs (excludes Non Market Non Scheduled)	50%	25%	49%	50%	75%		50%	50%	0%	50%
Total	100%	100%	100%	100%	100%	0%	100%	100%	100%	100%

Table 5 – Costed Allocation on Basis of Involvement

Category of Participant	Power System Security	Power System Reliability	Market Settlement	Market Operation	Prudential Supervision	Settlement Residue Auctions	Wholesale Market Improvement	Information Dissemination	Retail Market Improvement	Data & System Management	Total
	$	$	$	$	$	$	$	$	$	$	$
Retailers (Market Customers)	8,582	3,922	1,079	2,515	118	Not Allocated - recovered separately	1,256	1,214	1,986	1,971	22,642
											-
											-
											-
Generators and MNSPs (except for Non Market Non Scheduled)	8,582	1,307	1,036	2,515	355		1,256	1,214	-	1,971	18,236
Total	17,163	5,229	2,115	5,029	474	-	2,512	2,427	1,986	3,943	40,878

To further demonstrate the outcome of the costing activity and align the financial information with the format of the Draft Determination and Report, Table 6 groups expenses as either Attributable or Non-Attributable in the same format as the SCI information in Section 2 of this Analysis.

Table 6 – P&L by expense category split between Attributable and Non Attributable

	Total	Attributable	$'000's Non-Attributable
Labour & Contractors	30,260	23,884	6,376
Consultants	4,242	2,705	1,538
Agency Fees	1,940	1,940	-
Information Technology	4,050	3,767	284
Travel	1,090	782	362
Accommodation	1,320	825	495
Insurance	4,620	400	4,220
Depreciation	4,530	4,211	319
Finance Charges	1,350	-	1,350
Training & Development	702	531	172
Audit	460	350	110
Telephone	278	219	58
Printing & Stationery	440	-	440
Amenities	99	78	21
Subscriptions	430	177	253
Utilities	218	172	46
Directors Fees	675	-	675
Other	1,335	892	443
Contingency	-	-	
Total NEMMCO Operating	58,039	40,878	17,161
% of Total NEMMCO Operating		70%	30%
Establishment Receivable	4,450		4,450
Sub-Total $ (before FRC)	62,489	40,878	21,611
% of Sub-Total		65%	35%
FRC	16,710		16,710
Total $ (after FRC)	79,199	40,878	38,321
% of Total		52%	48%

6. Other Specific Costs

6.1 NEM Establishment Receivable

The Establishment Receivable[1] represents the recovery of the operating costs accumulated while setting up the National Electricity Market. At the commencement of the NEM these costs were capitalised and are being recovered in instalments over a 10-year period. It will recovered at the rate of $4,447m per annum until 2007/2008, when the remaining balance will be fully recovered; this is depicted in Table 7:

Table 7 – Recovery of NEM Establishment Receivable

	Remaining at '30 June 2006	To Be Recovered		
		2006/2007	2007/2008	2008/2009
$ '000	$11,396	$4,447	$4,447	$2,502

6.2 Control Centre Costs

(a) New Control Centre

The new NSW Control Centre is expected to be operational by October 2006. It has been proposed to recover the costs associated with it by way of a depreciation charge on a straight-line basis for the building and furniture and fittings, and an amortisation charge for the legal and interest costs accumulated during its construction. The cost of the land will also be recovered by way of a periodic charge. It is proposed to depreciate the building over 30 years, under the accounting concept of its estimated useful life, and this timeframe would also be applied to the periodic recovery charge for land. The other assets and accumulated costs would be brought to account over 15 years, which has been assessed as reasonable within the definition of useful life. At project completion, the value of the asset and accumulated costs is expected to total $29.3m.

Fees to recover the costs, as well as the ongoing interest on the debt funding will commence from July 2006 and so it is relevant to this Analysis. It is proposed to allocate these costs across the NEMMCO outputs on the same basis as other control centre accommodation costs.

Table 8 shows the projected cost per annum over the next five years as included in the 2005/06 SCI and how it will be attributed to the NEMMCO outputs.

[1] See Table 4.

Table 8 – Allocation of New Control Centre Costs

Financial Year	Total $ '000	Power System Security	Power System Reliability	Market Operation	Data & System Management	General Admin
06/07 to 10/11	$2,890	$1,272	$1,012	$217	$101	$289
%	100%	44%	35%	7.5%	3.5%	10%

(b) Existing Control Centres

NEMMCO currently leases control centre premises in NSW and QLD. The NSW lease will cease when operations relocate to the new control centre, resulting in a saving in lease and other associated accommodation costs. The terms under which the QLD control centre is occupied will expire in 2008 and a number of accommodation options will need to be considered.

7. Incremental Services Cost Review

7.1 Notional Allowance

For the purposes of this Analysis, a notional amount of $1m has been assigned as the estimated cost of providing incremental services. This is consistent with the 2003 Cost Activity and Cost Driver Review.

7.2 Incremental Services Fees

An Incremental Service is a service that, in NEMMCO's opinion, is provided to a Participant or other person where the recipient is receiving some benefit over and above Participants of the relevant class and is:

- (identifiable) the cost of the service is able to be separately accounted for; and
- (material) the identified costs in providing the service are material; and
- (voluntary and specific) the service is provided at the request of, and for the benefit of, the recipient.

If the Rules contemplate NEMMCO levying a separate fee or charge for a service, that service is likely to be an Incremental Service.

Where NEMMCO can specify a particular fee for a particular incremental service, it shall do so. These fees will be levied on the basis of NEMMCO's assessment of the labour, overheads and other material costs involved in providing the service. Registration Fees is an area where NEMMCO has been able to fix a fee for the service.

7.3 Registration Fees

NEMMCO currently processes around 30 registration applications per annum.

Based on specific enquiry of the staff involved in the process to register new participants, and costing of their specific salaries without the application of an oncost to recover overheads, it was calculated that the actual labour cost per registration is approximately $3,655.

The current registration fee of $1,700 has been in place since 2000 and does not adequately reflect the time taken to process registration applications. Based on the review of the associated labour costs, the Working Group has recommended setting the fee at $3,500 per registration.

Appendix 1

Survey Activities and Outputs

ID	Service/Output	Activities/Inputs
1.0	**Power System Security**	• Real time monitoring and control - SCADA / EMS facilities
		• Real time monitoring and control - Analysis tools
		• Real time monitoring and control - Control room processes
		• Constraint formulation - analysis tools
		• Outage Co-ordination - network outage schedule (NOS)
		• Outage Co-ordination - analysis tools
		• Ancillary services - FCAS Market
		• Ancillary services - AS Contracts
		• ST PASA - Load Forecast (1-7 Day)
		• ST PASA – NOS
		• ST PASA - General availability
		• Due diligence assessment of network limits - system normal
		• Due diligence assessment of network limits - Prior outage
		• Protection reviews (interconnectors)
		• Control system assessment - Power system stabilisers (check)
		• Control system assessment - SVC PODs (approve)
		• Inter-regional testing - recording & analysis tools
		• Power System Performance Monitoring
		• Problem solving TNSP problems
		• Incident investigation and reporting
		• Under frequency load shed analysis, review and settings
		• Stakeholder Issues management
		• Tasmanian NEM Entry
		• Intermittent generation
		• Standards development
		• Managing entry of new transition projects
		• Procedure development
		• DSA Issues
		• Analysis tools and database management
		• System studies and problem resolution
		• PASA solver
		• Real-time Network Security performance / assessment monitoring
		• Real-time Energy / FCAS market implementation, System Security impact monitoring
		• Database support
		• System support
		• Dispatch
		• Load forecasting
		• Dispatcher Training and DTS
		• Security related procedures
		• Other Specify
2.0	**Power System Reliability**	• Reserve monitoring
		• Reserve trader contracts
		• Reserve margin assessments for Reliability Panel
		• ST PASA - Load Forecast (1-7 Day)
		• ST PASA – NOS
		• ST PASA - General availability
		• MT PASA - Load Forecast (1-10 year)
		• MT PASA – NOS
		• MT PASA - Generator availability
		• Statement of opportunities - load forecast (1-10 year)
		• Statement of opportunities - Status of proposed developments
		• IRPC and Reliability Panel Activities
		• Statement of Opportunities – strategic content review
		• ANTS development and analysis
		• PASA solver
		• System Support

ID	Service/Output	Activities/Inputs
		• Operational reserve determination and studies
		• Reliability related procedures
		• Power system emergency scenarios and management
		• Other Specify
3.0	**Market Settlements**	• Settlements Statements(credits, debits & netting-off) - Metering Data - measurement
		• Settlements Statements(credits, debits & netting-off) - Metering Data – retrieval
		• Settlements Statements(credits, debits & netting-off) - Metering Data – checking
		• Settlements Statements(credits, debits & netting-off) - Metering Data - Dispatch results - Prices, targets etc
		• Settlements Statements(credits, debits & netting-off) - Loss Factors - (Static)
		• Settlements Statements(credits, debits & netting-off) - Loss Factors (Static) - Analysis tools
		• Settlements Statements(credits, debits & netting-off) - Compensation determination
		• Metering processes and procedures
		• Metering Data Provider management
		• Metering registration and investigation
		• EFT Processing
		• Settlements and AustraClear
		• Billing
		• Reallocations
		• Preparing functional descriptions for software development
		• Software testing
		• Change management – implementation plans
		• Investigating product problems
		• Miscellaneous – Statement production – answering participant queries
		• MSATS Configurations
		• MSATS testing
		• System support
		• Other Specify
4.0	**Market Operation**	• General Dispatch together with FCAS - Load Forecast (5 Min)
		• General Dispatch together with FCAS - Bids & offers via NEMNET (base level)
		• General Dispatch together with FCAS - Loss factors (static & IR)
		• General Dispatch together with FCAS - Loss factors (static & IR) - Analysis tools
		• General Dispatch together with FCAS - Constraints - Constraint Library
		• General Dispatch together with FCAS - Constraints - Ad hoc constraints
		• General Dispatch together with FCAS - Standing data
		• General Dispatch together with FCAS - Standing data – Registration
		• Real time monitoring and control (Compliance with targets, specific conditions pricing)
		• Real time monitoring and control (Compliance with targets, specific conditions pricing) - SCADA / AGC
		• 5 Min Pre-Dispatch - Load Forecast (1 day)
		• Pre-dispatch - Load Forecast (2 days)
		• Pre-Dispatch Sensitivities - Load Deltas
		• Market Price investigations and analysis
		• Dispatch and Pricing reference group activities
		•
		• Market Performance Monitoring
		• Other Specify
5.0	**Prudential Supervision**	• Prudential Supervision
		• Prudential Supervision – MCL determination
		• Prudential Supervision - Monitoring of spot trading debts
		• Prudential Supervision - credit support
		• Prudential Crisis Management
		• Prudential procedures and scenarios
		• Other Specify

ID	Service/Output	Activities/Inputs
6.0	**Settlement Residue Auctions**	• Standing & General Data (includes Information Memorandum)
		• Bids via NEMNET
		• Auction Solver and processes
		• Settlement Residue Committee activities and reporting
		• Other Specify
7.0	**Wholesale Market Improvement**	• Market Performance Monitoring
		• Market Design Analysis and development
		• Stakeholder Issues Management
		• Dispatch models
		• Intermittent generation issues
		• Rules reviews
		• Efficiency and incentives development
		• Marginal cost issues and investigation
		• Financial and spot market developments
		• Prudential development
		• Other Specify
8.0	**Information Dissemination**	• Output of NEM Processes
		• General information
		• TNSP Advice
		• MSATS
		• Helpdesk responses
		• Participant support
		• NEMOC and PAC activities
		• Other Specify
9.0	**Retail Market Improvement**	• MSATS
		• Transfer procedures
		• Retail market Development
		• Metrology harmonisation
		• RMEC activities
		• IEC and working group facilitation
		• Other Specify
10.0	**NEMMCO Administration**	• MD Office, Board and strategy
		• Legal
		• Commercial Services
		• HR
		• Corporate Relations
		• Accommodation and Office Systems
		• IT Support
		• Research
		• Regulatory affairs and interaction with AEMC and AER
		• Budget Management and fee determination
		• Team Management
		• Compliance
		• Other Administration Specify
		• Other Non Attributable Activities
11.0	**Data & Systems Management**	• Change Management
		• Data Security
		• Standards
		• Data Network Management
		• Project Management
		• IT Testing
		• IT Requirement Specification
		• MMS File Reporting
		• MMS Support
		• Database maintenance
		• Other Specify

Appendix 2

Time spent in immediate interaction with Registered Participants

Output		Market Customers	TNSPs	DNSPs	MNSPs	NSPs (if unable to split)	Market Scheduled Generators	Market Non Scheduled Generators	Non Market Scheduled Generators	Non Market Non Scheduled Generators	Generators (if unable to split)
Power System Security	15.23%	0.03%	5.22%	1.12%	0.25%	3.42%	2.05%	0.46%	0.01%	0.04%	2.64%
Power System Reliability	1.00%	0.03%	0.32%	0.00%	0.00%	0.21%	0.08%	0.01%	0.01%	0.02%	0.32%
Market Settlement (Cash transactions and clearing, metering and billing services)	1.91%	0.90%	0.19%	0.35%	0.03%	0.02%	0.07%	0.05%	0.00%	0.02%	0.27%
Market Operation (Efficient pricing services)	1.85%	0.14%	0.10%	0.02%	0.04%	0.04%	0.68%	0.07%	0.05%	0.00%	0.72%
Prudential Supervision	0.80%	0.65%	0.00%	0.00%	0.00%	0.00%	0.06%	0.00%	0.00%	0.00%	0.10%
Settlement Residue Auctions	0.12%	0.05%	0.03%	0.00%	0.00%	0.00%	0.03%	0.00%	0.00%	0.00%	0.02%
Wholesale Market Improvement and Development services	1.13%	0.11%	0.14%	0.00%	0.00%	0.02%	0.17%	0.41%	0.00%	0.03%	0.26%
Information Dissemination	3.19%	1.32%	0.24%	0.20%	0.00%	0.56%	0.11%	0.04%	0.00%	0.00%	0.72%
Retail Market Improvement	2.78%	1.35%	0.05%	1.32%	0.03%	0.01%	0.00%	0.01%	0.00%	0.00%	0.00%
NEMMCO Administration	0.28%	0.07%	0.03%	0.02%	0.00%	0.10%	0.00%	0.00%	0.00%	0.00%	0.07%
Business to Business, and Business to NEMMCO Services	5.59%	1.10%	0.00%	1.13%	0.00%	1.72%	1.35%	0.00%	0.00%	0.13%	0.14%
	33.89%	**5.76%**	**6.30%**	**4.15%**	**0.35%**	**6.11%**	**4.60%**	**1.05%**	**0.06%**	**0.26%**	**5.25%**

Summary	Total	Market Customers	TNSPs DNSPs & NSPs			Generator & MNSPs		
	33.89%	5.76%	16.56%			11.57%		

Attachment E – Submissions received (Stages 1 and 2)

National Generators' Forum & Energy Retailers' Association of Australia

Issue	Response	Section
Whether NEMMCO should alter the current Participant fee structure: "The issues and parameters … have not materially changed and thus the ERAA and the NGF believe that there is no requirement to change the current participant fee structure."	See the discussion in section 5.3 of the Determination and Report.	5.3
B2B Fees: "B2B fees should be recovered on the same basis as full retail contestability costs"	See the discussion in sections 6.3 and 9 of the Determination and Report.	6.3 and 9
New Control Centre: "The costs of the new control centre should be recovered according to common accounting practice and allocated to participants in the same manner as other major capital costs;"	See the discussion in section 6.4 of the Determination and Report.	6.4
Fees for Services specifically for the Benefit of a Specified Registered Participant: "Market services, eg services specifically applied to the benefit of a specific Registered Participant, should be recovered from those participants as NEMMCO does now."	See the discussion on incremental services in section 8.5 of the Determination and Report.	8.5
Fees for Costs of Activities that do not Directly Support NEMMCO's Statutory Functions:	See the discussion in section 5.5 of the Determination and Report.	5.5

Issue	Response	Section
"… ERAA and the NGF consider that costs associated with new activities of NEMMCO, that is activities that do not directly support NEMMCO's functions under the National Electricity Law and National Electricity Rules, should not be recovered from participants through market fees."		
Length of Determination: "The ERAA and the NGF support NEMMCO's decision to review the participant fee structure from time to time. We consider that an appropriate interval should be at least 5 years unless a participant group considers that there has been a material change to the nature of fees being charged to participants."	See the discussion in section 11 of the Determination and Report.	11

United Energy Distribution Pty Ltd

Issue	Response	Section
Whether NEMMCO should alter the current Participant fee structure: "Given the push to national reform and possible convergence of gas and electricity, UED does not believe that the structure of the participant fees should be further complicated by the addition of any new categories."	See the discussion in section 5.3 of the Determination and Report.	5.3
FRC Fees: "Given the last review of participant fees … took into account Full Retail Contestability (FRC) charges, UED consider there is little or no requirement to alter the current charging structure, allocations or categories."	See the discussion in Section 9 of the Determination and Report.	9
B2B Fees:	See the discussion in Section 9 of the Determination and Report.	9

Issue	Response	Section
"To date any B2B fees incurred by NEMMCO have been incorporated into the FRC fees consistent with the wider interpretation of national market facilitation. This is also consistent with the Victorian gas approach where B2B is considered part of market facilitation and Vencorp's costs are part of the market operators fees to retailers. This methodology also provides the most efficient mechanism for the ultimate flow of these costs to the customers."		
Imposition of Fees on NSPs: "As a Victorian distribution business, UED is in the final stages of its price review for the pricing period 2006-2010 with a Final Determination already handed down … UED is a regulated business and has no opportunity to recover these types of participant fees over the next pricing period."	See the discussion in sections 5.4 and 8.2.2 of the Determination and Report.	5.4 and 8.2.2

CitiPower Pty and Powercor Australia Ltd

Issue	Response	Section
Imposition of Fees on NSPs: "… would be very concerned if there is any move to change the structure of participant fees so as to impose new fees on distribution businesses …" "The revenues of these businesses are regulated … The Commission has not included provision for NEMMCO fees and the businesses will have no opportunity to recover the costs of such fees during the next regulatory period."	See the discussion in sections 5.4 and 8.2.2 of the Determination and Report.	5.4 and 8.2.2

Issue	Response	Section
"In addition … there seems to be no material benefit in imposing fees on distributors … more efficient for the NEMMCO costs to flow more directly through to Market Customers and on to electricity consumers."		

SPI Electricity Pty Ltd (trading as SP AusNet)

Issue	Response	Section
B2B & FRC Fees: "… method of recovery of costs associated with the provision of Full Retail Competition and B2B communications … NEMMCO's costs in relation to these activities are presently charged separately from other participant fees … under these separate arrangements the costs are met by retailers, and in our view this allocation remains appropriate." "… the emergence of industry B2B communications systems are intrinsically associated with Full Retail Competition in the retail market, and would not otherwise be required beyond arrangements between the network business and host retailer. Whilst network businesses now have a significant operational reliance upon NEMMCOs provision of FRC and B2B facilities and services, these market developments have been implemented to create opportunities for more innovative and efficient retailing arrangements. In SP AusNet's view retailers (and end consumers) are clearly the beneficiaries of these services."	See the discussion in section 9 of the Determination and Report.	9
Imposition of Fees on NSPs: "Giving consideration to the previous significant analysis and outcomes [in previous fee determinations], SP AusNet considers that there would be no	See the discussion in sections 5.4 and 8.2.2 of the Determination and Report.	5.4 and 8.2.2

Issue	Response	Section
basis for charging participant fees to network businesses." "… the dispute process tested NEMMCO's decision not to allocate fees to TNSPs. The dispute was ultimately resolved in favour of NEMMCO's determination. Importantly, the dispute panel's ruling confirmed the view of the TNSPs that there were no grounds for charging participant fees of TNSPs. The decision summary makes the following statements: 'In particular, the exclusion of the TNSPs from liability to pay is understandable, given that they do not in any significant or certain operational or conceptual sense contribute to the fixed and common costs incurred by NEMMCO and NECA. Rather, the TNSPs themselves provide NEMMCO with information and other inputs necessary for NEMMCO to perform its Code functions. They do not trade in the NEM and in that sense do not use or are not a direct beneficiary of NEMMCO's services'." "In considering the structure of fees we request that NEMMCO take into account the regulated status of network businesses and the constraints upon the ability of these businesses … to recover any fees imposed." "Present … determinations in respect of SP AusNet's networks do not provide for an allocation of participant fees … Therefore SP AusNet does not consider that there is any realistic means through which it could recover fees imposed by NEMMCO." "SP AusNet concludes that the previous decisions made by NEMMCO to not levy participant fees on network businesses have been fully justified, and that retention of this outcome remains appropriate …" "Specifically, SP AusNet believes that there are no grounds for charging network businesses, having regard to: The nature and beneficiaries of the services provided by NEMMCO and		

Issue	Response	Section
recovered under participant fees; and The regulatory regime that applies to network businesses for the recovery of costs associated with the provision of regulated network services."		

TransGrid

Issue	Response	Section
Application of the NEL & Rules: "In exercising its functions in respect of the national electricity market (NEM) NEMMCO must do so in accordance with the National Electricity Law and the Rules." "Section 50 of the NEL requires NEMMCO to perform its functions in respect to the NEM efficiently and on a full cost recover basis but not for profit." "The NEL [section 7] states the NEM objective is 'to promote efficient investment in, and efficient use of services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity and the reliability, safety and security of the national electricity system'." "The principles stated in clause 2.11 of the Rules stated are consistent generally with NEMMCO's obligations under s50 of the NEL and the national electricity market objective."	NEMMCO agrees generally with these comments. See the discussion in section 4 of the Determination and Report, and particularly sections 4.4.2 and 4.4.7 as to NEMMCO's views as to the link between NEMMCO's obligations under section 50 of the NEL and the NEM objective.	4
Interpretation of Clause 2.11.1(b): "Clause 2.11.1(b) of the Rules provides that the structure for Participant Fees to be developed by NEMMCO must, to the extent practicable, be	See the discussion in section 4 of the Determination and Report, and particularly sections 4.4.1 to 4.4.7. In relation to the specific issue of levying fees on network service providers, see the discussion in sections 5.4 and 8.2.2 of the Determination and Report.	4, 5.4 and 8.2.2

Issue	Response	Section
consistent with the following principles: the structure should be simple; Participant fees should recover the budgeted revenue requirements for NEMMCO on a specified basis; the components of Participant fees charges should be 'reflective of the extent to which the budgeted revenue requirements for NEMMCO involve that Registered Participant'; Participant fees should not unreasonably discriminate against a category or categories of Registered Participants; and the fixed component of Participant fees for a Market Customer may be zero. In addition, NEMMCO is not required to develop a structure for Participant Fees with all five [of] the principles if that is not practicable. TransGrid's comments regarding the application of each of these principles is set out for each in principle in turn." Simplicity "TransGrid supports NEMMCO's interpretation and application of the 'simple' structure of Participant Fees in its 'Determination of the Structure of Participant Fees under clause 2.11 of the National Electricity Code' dated 26 March 2003 [pp 23 and 24] …" Causality and Allocation of Costs TransGrid supports the efficient allocation of resources and the user pays principle. The levying of fees on the basis of Registered Participant involvement is consistent with promoting allocative efficiency within the market. Charging Registered Participants for services they do not cause or	8.2.2 of the Determination and Report.	

Issue	Response	Section
benefit from is likely to result in significant behavioural distortions. Clause 2.11.1(b) requires that the components of Participant fees charged to each Registered Participant should be 'reflective of the extent to which the budgeted revenue requirements for NEMMCO involve that Registered Participant.' [clause 2.11.1(b)(3)] Whilst the words 'reflective' and 'involve' are not defined in the Rules, TransGrid notes the context and drafting of clause 2.11.1(b) indicate that the nature and significance of involvement is centrally relevant. Mere or incidental involvement in NEMMCO's activities and costs or mere interaction with NEMMCO should not make a Registered Participant liable to pay Participant fees. Where Registered Participants are not 'involved' in NEMMCO's activities and costs to any significant extent, those Registered Participants should not pay Participant fees, as payment of Participant fees in those circumstances would not be reflective of the extent of involvement. This interpretation is supported by the Second Group, which stated: 'The pivotal principle of 'reflective or extent of involvement' does not have a specialised meaning in the discourse of economics. It is consistent with the notion of 'user pays' but as a matter of ordinary language, it may properly be construed as indicating a degree of correspondence (between NEMMCO and its costs and participants) without connoting identity. Taking into account the language of the whole clause we reject the contention that it must involve a precise degree of correspondence" [decisions of Second Group on Amended Dispute reference Notice by National Generators Forum Concerning NEMMCO Participant Fees Determination, paragraph 5.17]" Participant Categories and Unreasonable Discrimination "Discrimination involves treating equals differently or treating non-equals the same. Clause 2.11.1(b)(4) does not prohibit discrimination; it merely		

Issue	Response	Section
provides that, to the extent practicable, NEMMCO should not discriminate 'unreasonably'. TNSPs can be categorised as a discrete class of Registered Participant for the purpose of levying Participant fees. As stated above, TNSPs provide information and services to NEMMCO and receive no direct benefit from NEMMCO's activities or outputs. Levying Participant fees on categories of Registered Participants other than TNSPs does not constitute discrimination. NEMMCO is not discriminating if it treats different entities differently. Even if there is discrimination, the differences between TNSPs on the one hand and other Registered Participants on the other means that the discrimination is not unreasonable." Weight of Specific Categories "Clause 2.11.1(b) does not specify the preference to be given to the five principles. TransGrid submits that equal weighting should be given to each of the five principles where this is practicable. Taken together, these principles imply, as they did at the last Review of Participant Fees, that Participants Fees should not be levied on TNSPs …"		
Imposition of Fees on NSPs: "…TNSPs are, and remain, minimal users of NEMMCO's systems…" "..TNSPs provide information and services to NEMMCO and receive no direct benefit from NEMMCO's activities or outputs" "…it would be appropriate that Participant fees are levied on Generators and Market Participants only"	See the discussion in sections 5.4 and 8.2.2 of the Determination and Report.	5.4 and 8.2.2

Issue	Response	Section
Length of Determination: "…the current three year timeframe for application of the Structure of Participant Fees should be extended to five (5) years. This five (5) year period also accommodates sufficient flexibility and responsiveness required to ensure a Participant Fee structure remains relevant and reflective of the market"	See the discussion in section 11 of the Determination and Report.	11

Marubeni Australia Power Services Pty Limited

Issue	**Response**	**Section**
In the Draft Determination and Report, NEMMCO categorises Non-Market Scheduled Generators with Market Scheduled Generators, on the basis that each utilise the same services from NEMMCO. "In Marubeni's view this is clearly not the case and Marubeni requests that NEMMCO separate Non Market Schedule[d] Generators and allocate their costs of services provided by NEMMCO on a fair and equitable basis that is consistent with other participants." In its Stage 2 submission, Marubeni then works through each of the outputs identified by NEMMCO and comments on the extent to which Non-Market Scheduled Generators are involved in the relevant outputs. Marubeni accepts that NEMMCO provides a number of services to Non-Market Scheduled Generators but believes that Non-Market Scheduled Generators are less involved with NEMMCO than other Generators and the level of their fees ought to be adjusted accordingly.	NEMMCO agrees with many of the points being made by Marubeni. See the discussion in section 8.2 of the Determination and Report (and particularly section 8.2.4).	8.2.4

Ergon Energy Pty Ltd

Issue	Response	Section
Ergon Enery notes that the reform process of the NEM has been a protracted process and the development of the structure of participant fees over that time has been no different. "Over this period, there has been general acknowledgement within the market and stakeholders on the need for increased transparency and accountability of all participants in the NEM. Despite this widely accepted need, the Draft Determination fails to demonstrate a significant incremental improvement, especially in regard to cost allocation."	See the discussion in section 5.6 of the Determination and Report.	5.6
Of particular concern to Ergon Energy are the various cost categories that could not be directly attributed to outputs. These costs included: • Travel ($1,090,000); • Printing and stationery ($440,000); • Directors' fees ($675,000); and • Other fees ($1,335,000). Ergon Energy believes it is reasonable for market participants to expect NEMMCO to allocate this expenditure. Ergon Energy requests NEMMCO to reconsider this part of the Draft Determination and Report.	See the discussion in section 7.4.2 of the Determination and Report.	7.4.2
In circumstances where NEMMCO cannot apply historical information to make further attributions, Ergon Energy submits that NEMMCO establish procedures immediately to enable the resultant information to be captured.	See the discussion in section 7.4.2 of the Determination and Report.	7.4.2

AGL Electricity Limited

Issue	Response	Section
AGL is concerned that an artificial distinction is being drawn between jurisdictions that have implemented FRC and those that have not. "In AGL's view, all retailers use the systems developed for FRC to a greater or lesser degree and should be sharing in both the establishment and operational costs of those systems. This is particularly important since the B2B costs are only to be recovered in the operational FRC costs."	See the discussion in section 9 of the Determination and Report.	9
AGL are concerned about the term "implemented" in relation to FRC in the Draft Determination and Report. "While we accept that FRC may not be considered to be "implemented" in Tasmania, we would argue that FRC has now been "implemented" in Queensland." In AGL's view, it would be much simpler to allocate FRC costs on energy basis to all retailers in all regions.	See the discussion in section 9 of the Determination and Report.	9

Attachment F – Allen Consulting Report

The Allen Consulting Group

Report to NEMMCO on economic issues relating to Participant Fee structure

22 December 2005

Report to National Electricity Market Management Company

The Allen Consulting Group

The Allen Consulting Group Pty Ltd

ACN 007 061 930

Melbourne

4th Floor, 128 Exhibition St

Melbourne VIC 3000

Telephone: (61-3) 9654 3800

Facsimile: (61-3) 9654 6363

Sydney

Level 12, 210 George St

Sydney NSW 2000

Telephone: (61-2) 9247 2466

Facsimile: (61-2) 9247 2455

Canberra

Level 12, 15 London Circuit

Canberra ACT 2600

GPO Box 418, Canberra ACT 2601

Telephone: (61-2) 6230 0185

Facsimile: (61-2) 6230 0149

Perth

Level 21, 44 St George's Tce

Perth WA 6000

Telephone: (61-8) 9221 9911

Facsimile: (61-8) 9221 9922

Brisbane

Level 11, 77 Eagle St

Brisbane QLD 4000

PO Box 7034, Riverside Centre, Brisbane QLD 4001

Telephone: (61-7) 3221 7266

Facsimile: (61-7) 3221 7255

Online

Email: info@allenconsult.com.au

Website: www.allenconsult.com.au

Contents

Executive summary

Introduction

The Allen Consulting Group has been retained by the National Electricity Market Management Company (NEMMCO) to provide a summary of the economic issues associated with the determination of Participant fees for Registered Participants.

In its analysis, the Group has had regard to a number of issues including the relevant criteria identified in the National Electricity Law and the National Electricity Rules, the application of economic objectives, as well as submissions from interested parties made in response to NEMMCO's Issues Paper on the Structure of Participant Fees.

This report:

- provides an economic framework for the structure of Participant fees by NEMMCO;
- considers the structure of such fees in light of those requirements set out section 50 of the National Electricity Law and in clause 2.11.1(b) of the National Electricity Rules; and
- also considers the structure of Participant fees in light of more general economic principles.

Finally, conclusions and recommendations are made on the most appropriate structure for Participant fees for Participants when considered in light of the relevant criteria.

Conclusions

A number of alternative pricing approaches exist which may be used to underlie the structure of Participant fees. These include marginal cost pricing, average cost pricing, fully distributed cost pricing, Ramsey pricing and multi-part pricing. All types of pricing approaches satisfy at least some of the criteria that NEMMCO must follow in setting Participant fees, however, no pricing approach definitively satisfies all the criteria. The particular design of Participant fees i.e. the application of a chosen pricing approach, must strike a balance in terms of satisfying the criteria.

Recommendations

On balance, a multi-part fee strikes a reasonable balance in satisfying the necessary criteria for Participant fees.

The recommended Participant fee structure is as follows.

1. For the vast bulk NEMMCO's total costs (general costs):
    - costs which can be allocated to Generators plus MNSPs should be recouped on the basis of historical capacity and historical energy produced, in equal amounts;

- costs which can be allocated to Market Customers should be recouped on the basis of contemporaneous load (i.e. MWh of energy purchased); and
- costs which cannot be allocated to any class of Participants should be recovered from end users. The most efficient way to do this is to levy fees on the Market Participants closest in the supply chain to end users i.e. Market Customers, in the expectation that these fees will be passed on relatively quickly to end users. The particular fee for this purpose should be recouped on the basis of contemporaneous load.

2. Services deemed to be 'incremental' i.e. those services whose recipients can be readily identified, should be charged at the incremental cost to NEMMCO of providing those services i.e. the cost that NEMMCO would avoid if the service were not provided.

Chapter 1

Introduction

1.1 The brief

The Allen Consulting Group has been retained by the National Electricity Market Management Company (NEMMCO) to provide an analysis of the economic issues associated with the determination of Participant fees for Participants.

In analysing such issues, we have had regard to the following:

- the relevant criteria in the NEL and the Rules;
- economic principles and their application in the determination of an appropriate fee structure; and
- submissions from interested parties made in response to NEMMCO's Issues Paper and Draft Determination of the Structure of Participant Fees document.

Based on The Allen Consulting Group's own analysis, as well as submissions made by interested parties, this report:

- provides an economic framework for the structure of Participant fees by NEMMCO (Chapter 3); and
- considers the structure of such fees in light of those criteria set out in clause 2.11.1(b) of the National Electricity Rules and the National Electricity Law (Chapter 4).

Chapter 5 summarises how Participant fees are structured in other countries. Chapter 6 provides conclusions.

1.2 Consideration of economic principles

As set out in the previous section, the purpose of this report is to examine those economic principles NEMMCO must have regard to when determining the structure of Participant fees for Participants.

In determining the structure of fees, NEMMCO must have regard to those criteria set out in 2.11.1(b) of the National Electricity Rules. NEMMCO must also have regard to section 50 of the National Electricity Law. These constructs are explained in more detail in Chapter 2.

1.3 Previous economic analysis

This is NEMMCO's fourth review of Participant fees, with previous reviews being completed in 1998, 2000 and 2003.

NEMMCO considers each new determination 'afresh'. That is, NEMMCO must freshly consider the application of the criteria in clause 2.11.1(b) of the Rules to the facts and analysis available to it at the time.

A summary of the core principles adopted in each decision is provided below.

2003 Decision

In its 2003 decision, NEMMCO determined to allocate fees according to three principles. That is:

- costs determined in accordance with discretionary services;
- costs determined in accordance with a 'reflective of involvement' principle;
- unallocated costs representing the remaining total costs, after having been applied according to the two former principles.

NEMMCO also levied a fixed Registration Fee for new registrations.

Costs determined in accordance with discretionary services were levied on an hourly basis.

On the basis of the 'reflective of involvement' principle with respect to NEMMCO's outputs, 66 per cent of fees charged by NEMMCO were on an allocated basis. In this case, allocated costs were divided between both Generators and Market Customers (48 per cent and 52 per cent respectively). Generators were levied two types of fixed fees. Half of the fees levied on Generators were based on capacity in the previous calendar year, with the other half based on MWh of energy scheduled (for Scheduled Generators) or metered (for Non-Scheduled Generators) in the previous calendar year, whilst Market Customers' fees were levied on a variable basis (MWh transacted through the spot market).

Unallocated costs were levied solely on Market Customers and set as variable fees based on a $/MWh value. During the consultation process, some Participants raised the issue that this could be construed as being unreasonably discriminatory against Market Customers. However, NEMMCO determined that the allocation of such costs to Market Customers alone was a reasonable exercise of the form and intent of clause 2.11.1 of the then Code.

2000 Decision

In reaching a determination in 2000, NEMMCO allocated its costs according to one of three allocation principles:

- discretionary services;
- establishment costs; and
- general costs.

NEMMCO determined to charge any directly attributable costs on an incremental basis to the particular Participants giving rise to such costs. Where costs could not be attributed to certain participants, Generators and Market Customers were to be deemed 'involved' in the market and pay the remainder of costs.

Specifically, for incremental services, NEMMCO determined to levy a fixed Registration Fee per registration as well as a variable Participant Compensation Fund Fee[1] for Scheduled Generators. A Discretionary Service Fee was levied on Participants and was calculated on the basis of recovering the directly attributable cost associated with the service.

Establishment costs were phased in over the period of the determination. Specifically:

- In the financial years 2000 and 2001, fees were recovered in the following manner:
  - 50 per cent in the form of fixed fees charged to Generators and MNSPs and Market Customers (with 50 per cent of these costs allocated to each Participant group);
  - 50 per cent as a variable fee charged to Market Customers on the basis of $/MWh.
- In the subsequent financial years, establishment fees were recovered 100 per cent in the form of fixed fees charged to Market Participants (with 50 per cent allocated to Generators and 50 per cent to Market Customers).

As with establishment fees, general fees were also phased in over the three year period of the determination. Specifically:

- In the financial years 2000 and 2001:
  - 25 per cent of fixed fees were charged to Generators (and MNSPs) and Market Customers (with 50 per cent of fixed fees allocated to each Participant group);
  - 75 per cent of fees were charged as variable fees to Market Customers on the basis of $/MWh.
- In subsequent financial years, 50 per cent of fees were charged to Market Participants (50 per cent allocated to Generators and 50 per cent to Market Customers). The remaining 50 per cent of costs were charged as a variable fee to Market Customers on the basis of $/MWh or Market Load.

For both Establishment and General fees, Generator (and MNSP) fixed fees were proportioned on the basis of registered unit MW capacity as at 31 March 2000 (new entrants without a registered MW capacity at this date being excluded). Market Customers' fixed fees were calculated on the basis of the value of energy acquired through the NEM in the twelve-month period ending 31 March immediately prior to the financial year in which the charge was being levied.

This fee structure was the subject of a dispute, with the National Generators Forum (NGF) formally disputing this structure. Previously, NGF members had not faced General Fixed fees. The Second Group found in favour of NEMMCO's price structure.

[1] The purpose of this fund was to protect Scheduled Generators against losses arising from NEMMCO scheduling errors.

1998 Decision

For its 1998 decision, NEMMCO assessed an appropriate fee structure by first determining the components of the fees' structure. These components included: registration; power system operations; metering; settlements; administration; and NECA — and then determined which of these components were cost drivers. Costs were classified as being either fixed, common or sunk.

In its final decision, NEMMCO set fees as follows:

- *Registration* — As a readily identifiable direct variable cost, fees were set as a fixed per registration rate and levied on Code Participants.
- *Power System Operations* — These fees were set on a variable basis and charged to Market Customers on a $/MWh basis.
- *Metering* — Metering fees were set on a variable basis, and charged as an amount to Market Customers on a $/MWh basis.
- *Settlements* — These costs were considered to be variable and were charged on a $/MWh basis to Market Customers.
- *Administration* — Most administration costs were considered to be variable and were charged to Market Customers on a $/MWh basis. A fixed fee of $25 per day was also charged to Market Participants.
- *NECA* — The recovery of NECA costs was via a variable fee charged as an amount to Market Customers on a $/MWh basis.
- *Participant Compensation Fund (PCF)* — This fee was charged to Scheduled Generators in proportion to their share of the total market output value.
- *Other costs – service user generated* — These costs were allocated directly to the service user.
- *Establishment costs* — These costs were charged on a $/MWh basis to Market Customers.

In determining such a fee structure, NEMMCO considered that it satisfied the requirements of simplicity, economic efficiency, comparability, and an aim to reduce barriers to entry.

Chapter 2

Legal Context

2.1 Introduction

This chapter sets out the context in which NEMMCO must determine Participant fees. In particular, this chapter looks at NEMMCO's responsibilities in determining fees as set out by the National Electricity Rules (the Rules) and the National Electricity Law (NEL).

2.2 National Electricity Rules

The Rules set out the principles with which NEMMCO must have regard to when determining a fee structure for Participant fees. Specifically, these are set out by clause 2.11.1(b) of the Rules.

Clause 2.11.1(a) of the Rules requires NEMMCO to develop the structure of Participant fees.

Clause 2.11.1(b) states that to the extent possible, the structure of Participant fees must be consistent with the following principles:

(1) The structure of Participant fees should be simple;

(2) Participant fees should recover the budgeted revenue requirements for NEMMCO, determined under clause 2.11.3, on a basis as set out in clause 2.11.2 (i) – (iv);

(3) The components of Participant fees charged to each Registered Participant should be reflective of the extent to which the budgeted revenue requirements for NEMMCO involve that Registered Participant;

(4) Participant fees should not unreasonably discriminate against a category or categories of Registered Participants; and

(5) The fixed component of Participant fees for a Market Customer who satisfies various criteria as set out in the clause may be zero.

Clause 2.11.1 (c) states that the components of Participant fees may include, but not be limited to:

- Registration fees
- Ancillary service fees
- Power system operation fees
- Metering fees
- Billing and settlements fees
- Administration fees

In determining a structure for Participant fees, NEMMCO must have regard to other fee structures in existence as considered appropriate.

NEMMCO must publish the structure of Participant fees determined, the methods used in determining the structure and an assessment of the extent to which the structure complies with the principles set out in clause 2.11.1(b) to Registered Participants and any other appropriate persons, at least three months prior to the introduction of the new structure.

The Rules do not expressly indicate the weighting that each of the principles listed in clause 2.11.1(b) ought to be awarded. As such, the Rules are silent on whether any and each of these principles should be weighted equally, or more or less than others.

In previous decisions, NEMMCO has placed equal importance on each principle. However, NEMMCO has stated that where it is not practicable to satisfy all principles, or it is not possible to satisfy them to an equal degree, it may be necessary to develop Participant fees in a manner that places additional emphasis on some principles.

For example, imposing fees that strive to allocate costs that are reflective of each Participant's level of involvement may lead to a degree of price discrimination. In this case, those Participants which are responsible for a larger amount of NEMMCO's costs may reasonably being expected to pay a higher level of fees. This issue is addressed in more detail in Chapter 3.

In determining an appropriate allocation of fees for Participants, NEMMCO must, in addition to clause 2.11.1(b) of the Rules, have regard to Section 50 of the NEL.

2.3 National Electricity Law

The existing scheme for electricity market regulation came into force in 1998, with the proclamation of the *National Electricity (South Australia) Act 1996*. South Australia is currently the lead legislator for the National Electricity Law and the current National Electricity Law is scheduled to this Act. This Law also applies in New South Wales, Victoria, Queensland, the Australian Capital Territory and Tasmania – through Application Acts in each of those jurisdictions and the Commonwealth.

Section 50 of the NEL requires NEMMCO to perform the functions detailed in Section 49 "efficiently and on a full cost recovery but not for profit basis".

2.4 Market objective

The now defunct National Electricity Code set out a number of market objectives as well as objectives specific to NEMMCO.

These objectives have since been subsumed by a new overarching NEM objective in section 7 of the NEL, as follows:

The national electricity market objective is to promote efficient investment in, and efficient use of, electricity services for the long term interests of consumers of electricity with respect to price, quality, reliability and security of supply of electricity, and the safety, reliability and security of the national electricity system.

According to the second reading speech of the *National Electricity (South Australian) (New National Electricity Law) Amendment Bill,* the NEM objective is an economic concept and should be interpreted as such.

Chapter 3

Economic principles and their application

3.1 Introduction

This chapter discusses the economic principles applied to recommend a structure of Participant fees. The structure of the chapter is as follows. First, is a discussion of the principles, from an economic viewpoint, which are to guide the structure of Participant fees, as set out set out in clause 2.11.1(b) of the National Electricity Rules (NER). There is also some discussion of section 50 of the NEL.

Secondly, there is a discussion of the market for the services provided by NEMMCO, in particular, the implication for Participant fees that NEMMCO is a natural monopoly. Thirdly, given the previous discussion, the chapter discusses pricing options that may be used to underlie the structure of Participant fees. These options are then assessed against the applicable criteria set out in clause 2.11.1(b) of the Rules.

3.2 The National Electricity Rules

As described in Chapter 2, the relevant parts of clause 2.11.1(b) of the Rules are to be found in clause 2.11.1(b), which sets out that:

> The structure of *Participant fees* must, to the extent practicable, be consistent with the following principles:
> (1) the structure of *Participant fees* must be simple; …
> (3) the components of *Participant fees* charged to each *Registered Participant* should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* involve that *Registered Participant*;
> (4) *Participant fees* should not unreasonably discriminate against a category or categories of *Registered Participants.*

Clause 2.11.1(b)(2) sets out that Participant fees should recover NEMMCO's budgeted revenue requirements, and discusses timing and other issues.

Simple

'Simple' does not have a straightforward economic meaning. The Oxford Dictionary's definitions of simple (in this context) are "understood and done easily without difficulty"; "not complicated or elaborate, plain"; and "not compound or complex". Whether a structure of fees fits these definitions is largely a matter of judgement. As discussed below there is a wide range of possible Participant fee structures. However, there is no point where 'simple' becomes 'complicated' and, further, NEMMCO has also previously determined that the use of the word 'simple' may also reflect a degree of transparency. What is apparent is that simplicity has to be weighed against other clause 2.11.1(b) criteria (reflective of the extent of involvement and not unreasonably discriminate); the *simplest* fee structures are unlikely to be consistent with the other criteria. However, it is possible to find fee structures that, while consistent with the other criteria, are *relatively simple*, in comparison to alternative structures.

Reflective of the extent of involvement

This phrase is not of standard use in economics and therefore does not have a precise economic definition. In the context of NEMMCO's objectives under clause 2.11.1(b), however, a reasonable economic interpretation might be that budgeted revenue requirements are reflective of the extent of the involvement of a Participant to the extent that those revenue requirements are given rise to, or caused, by that Participant's presence in the market.

Using this interpretation, a Participant's presence in the market leads to the consumption of scarce resources by NEMMCO; that is, it creates opportunity costs, with resources expended by NEMMCO in providing services in response to Participants that could have been used elsewhere. This concept is closely related to the concept of 'user pays'.

For example, while it is not possible to precisely determine the relative extent of involvement for both Generators and Market Customers, it is clear that each cause opportunity costs, for without either class, the NEM would cease to exist. That is, by being 'involved' in the NEM, and having services provided to them by NEMMCO, Participants cause resources to be used up; and this is an opportunity cost to society, because those resources have other potential uses. The amount of opportunity cost created by each Participant thus reflects each Participant's involvement, and as a user, that Participant should pay. While it is not possible to judge precisely the relative amount of opportunity cost caused by each Participant, all classes of Participants cause opportunity costs, for without them, the NEM would not exist.

The above discussion is about each Participant's involvement with NEMMCO's inputs. Alternatively, it is instructive to examine the involvement of each Participant with NEMMCO's outputs. These two alternatives may lead to very different conclusions.

In its 2003 decision, NEMMCO's approach to this criterion was in general terms as follows[2]:

- Where it was practical for NEMMCO to identify action on the part of both Code Participants and other parties, where
  - discretion was exercised by either Code Participants or other parties; and
  - that discretionary action caused additional costs to be incurred by NEMMCO,

  NEMMCO sought to levy fees in relation to those actions to recover the incremental costs;
- Where it was practical for NEMMCO to identify costs that:
  - were fixed and/or common in nature;

[2] NEMMCO (National Electricity Market Management Company Ltd) 2000, Final Report and Determination of the Structure of Participant Fees – Section 2.11 of the National Electricity Code, 31 March, pp. 25-26.

– could reasonably be allocated to a class or classes of Participants; or

– shared characteristics such that their involvement with NEMMCO's outputs was likely to have the same or similar cost implications,

it sought to do so; and

- Where there was no practical and reasonable basis on which certain costs could be allocated to either one or more classes of participants, NEMMCO sought to allocate those costs in accordance with other criteria and economic principles.

Discrimination

Price discrimination occurs when a seller charges different prices to different buyers, for the same level of service.[3] Depending on the circumstances, price discrimination can either add to, or subtract from, economic efficiency.

Clause 2.11.1(b) of the Rules states that, to the extent possible, the structure of Participant fees should, amongst other conditions, "… not unreasonably discriminate against a category or categories of Registered Participants."

In the 2000 Fee determination, NEMMCO adopted the following definition of discriminate[4]:

> Discriminate means to treat people or categories of people differently or unequally. Discriminate also means to treat people, who are different in a material manner, in the same or identical fashion. Further "discriminate" has a legal meaning which is to accord different treatment to persons or things by reference to considerations which are irrelevant to the object to be attained.

Following a dispute lodged by the National Generators Forum concerning NEMMCO's Participant Fees Determination, the Second Group did not find fault with this approach but made the following observations.

> At the onset two observations should be made about clause 2.11.1(b)(4) of the Code… They are:
>
> (1) the principle is to be applied to the extent practicable; and
>
> (2) it is only unreasonable discrimination that offends.

[3] The economics literature refers to thee types of price discrimination. First degree price discrimination occurs when sellers can charge buyers exactly their willingness to pay for a certain amount of service. Under second degree price discrimination e.g., quantity discounts, a firm offers different deals to everybody and buyers choose the deal they prefer. Third degree price discrimination occurs when a seller charges different prices to different types of buyers.

[4] NEMMCO (National Electricity Market Management Company Ltd) 2000, Final Report and Determination of the Structure of Participant Fees – Section 2.11 of the National Electricity Code, 31 March, p.14.

It should be noted that price discrimination i.e. charging different prices for the same service to different customers, or different classes of customers, can in many circumstances, enhance economic efficiency and so would be consistent with the NEM objective. Thus, while a Participant fee structure in which different classes of Participants are charged on a different basis (e.g. in the 2003 Determination, Generators were charged on the basis of capacity and energy produced, while Market Customers were charged simply on the basis of their energy loads), while discriminatory in some sense, is not unreasonably discriminatory, if it is consistent with other criteria and economic efficiency.

Economic efficiency

In general, there are three types of economic efficiency — allocative efficiency, productive (or technical) efficiency and dynamic efficiency.

Allocative efficiency is attained when the mix of goods and services that an economy produces reflects the relative value that society places on those goods and services given the extent of society's resources required to produce the respective goods and services i.e. when the prices of goods or services are equal to their opportunity costs.

Productive (technical) efficiency is attained when firms produce the goods and services for the minimum cost, which implies that the lowest-cost combination of society's resources (typically defined generically as land, labour and capital) is used, and the best technology is employed.

Dynamic efficiency is attained when the mix of goods and services produced, and the production processes employed by firms, change over time in response to changes in tastes, technology and other factors – that is, so that allocative and productive efficiency are maintained at each point in time.

In the context of Participant fees, a fee structure that promotes allocative efficiency will be one that least distorts prices in the end-user markets for electricity.[5] For this reason, amongst others, past fee structures have included a component levied on Generators based on their MW capacity, as this is a fixed charge that is not directly related to the amount of electricity produced (or consumed).

A fee structure that promotes productive efficiency is one that places some discipline on NEMMCO's costs. A fee structure that Participants are not simply able to pass on to their customers would create such a discipline, since Participants would be motivated to ensure that NEMMCO operates at minimum cost (for a given level of service).

[5] In principle, allocative efficiency will also be promoted by a structure of fees that doesn't distort the market for the services provided by NEMMCO itself. However, this is not a material consideration, since it is reasonable to assume that the demand for NEMMCO's services by Participants is determined by the level of their involvement in the national electricity market i.e. how much electricity they sell or transport, and is largely unaffected by fees charged by NEMMCO.

The link between section 50 of NEL and the NEM objective is productive efficiency, which is attained when firms produce goods and services for the minimum cost, which implies that the lowest-cost combination of society's resources is used, and the best technology is employed. Section 50 can be interpreted as a prescribing, in economists' language, an objective of productive efficiency for NEMMCO, in respect of its own operations.

The relevance to the structure of Participant fees is that some types of fees are more likely than others to lead to NEMMCO conducting its own operations in a productively efficient manner, or more likely to discipline the demands made on NEMMCO by Participants. For example if Participant fees are set on the basis of NEMMCO's average costs[6] then this will place no bound on the amount of services provided by NEMMCO, or the cost of producing them — the costs will simply be passed on as higher Participant fees (to the extent that this is possible). The link with market efficiency is that these higher fees, may retard investment, or if they are passed on to consumers as higher charges, may reduce the consumption of electricity, both outcomes being inconsistent with economic efficiency.

A fee structure consistent with dynamic efficiency is one that promotes, or at least does not significantly impede, innovation and investment in the industry. This objective will be satisfied by a fee structure that is consistent with the criteria set out in clause 2.11.1(b) of the Rules – a fee structure that is simple, reflects the involvement of Participants and does not unreasonably discriminate between them should not have any negative effects on investment and innovation in the industry as a whole, nor distort investment and innovation incentives within the industry; for example, investment in different types of generation.

It should be borne in mind, moreover, that the level of NEMMCO's fees of about $60 million is very small relative to the turnover of the industry and so the material effect of NEMMCO's fees on industry efficiency, in all its dimensions, is unlikely to be significant.

3.3 The market for NEMMCO's services

NEMMCO is both market operator and system operator for the NEM. NEMMCO operates a spot market on a regional basis for wholesale supply of electricity in the six regions of the NEM, through a centrally coordinated dispatch process that continuously balances supply with demand in order to satisfy the electricity requirements of all end-use customers. Supply of electricity involves both the generation of electricity and its transport through the interconnected power system.

[6] That is, equal to NEMMCO's total (relevant) costs divided by a measure of the quantity of NEMMCO's services that it provides to Participants, or some other measure of activity.

Three aspects of the market for NEMMCO's services are particularly relevant to the structure of Participant Fees. The first is that NEMMCO is a natural monopoly.[7] A natural monopoly exists in an industry when that industry's production costs are minimised by having just one producer. In the case of the national electricity market, it is self-evident that it would not be efficient for another organisation (or organisations) to duplicate NEMMCO's dual roles of market operator and system operator (and such duplication would not be consistent with system security either). This is largely (but not solely) because of the large economies of scale involved in the gathering and dissemination of information required for the operation of the wholesale national electricity market.

The second aspect is that, consistent with being a natural monopoly, NEMMCO's costs are largely fixed and, therefore, do not vary with the quantity of services provided by NEMMCO (except in the relatively minor case of *incremental services*, discussed below). If an industry is characterised by very large fixed costs and relatively small marginal costs, it will not be possible to attain maximum allocative efficiency. This is because allocative efficiency implies that the price of services produced in a market is equal to the marginal cost of production since, in that case, the community faces a price just equal to the opportunity cost of using (or not) one extra unit of the good or service concerned. However, a firm in these circumstances (with substantial fixed costs) that sets price equal to marginal cost will not be economically viable, and so price must be set above marginal cost.[8] As noted above, a fee structure that maximises allocative efficiency is one that will least distort consumption in the retail (end-use) electricity market. Economic analysis does not prescribe the form of that fee, and the fact that most of NEMMCO's costs are fixed, for example, does not in itself mean that the fee structure must be based on fixed fees.

The third aspect is that services provided by NEMMCO, and hence the (mostly fixed) costs of those services, are largely shared between different Participants, and so a large part of them cannot be directly attributed to particular Participants or particular classes of Participants. Economic analysis does not prescribe any simple solution to how costs that are common to serving all Participants should be apportioned to those Participants. However, the characteristics of those Participants are relevant. Practical pricing structures are often based on ideal or benchmark pricing structures, but with their implementation constrained by information availability and practicality.

3.4 Options for pricing approaches

Possible pricing approaches to underlie alternative fee structures for pricing NEMMCO services include the following:

[7] NEMMCO is also a legal monopoly, according to section 11 of the NEL.

[8] Section 50 of the NEL makes it clear that NEMMCO must recover its costs fully.

***Marginal Cost Pricing*:** Under this pricing approach, NEMMCO's fees (per unit of service) would be set equal to the marginal cost of providing that service. As discussed in the following section, while marginal pricing is allocatively efficient, its implementation requires marginal costs to be measurable and large enough to satisfy NEMMCO's revenue requirements, in the light of section 50 of the NEL and clause 2.11(b)(2) of the Rules.

Average Cost Pricing: Under this arrangement, the fees charged to Participants are equal to NEMMCO's total (relevant) costs[9] divided by a measure of the quantity of NEMMCO's services that it provides to Participants, or some other measure of activity. This was essentially the pricing structure under the First Fee Determination in 1998, with the fees determined as a per MWh charge (variable fee) on Market Customers, sufficient to recover NEMMCO's revenue requirements.[10] As discussed below, while having the virtue of simplicity, this fee structure rates poorly on the test of allocative efficiency, since in the presence of largely fixed costs, average cost is far removed from marginal cost. In terms of end-use of electricity, such a scheme in fact involves maximum deviation from marginal cost pricing of electricity. It also rates poorly on the test of productive efficiency, since average cost pricing does not discipline the demands made on NEMMCO by any Participants, who can all readily pass on variable costs to their customers.

Fully Distributed Cost Pricing: Under this pricing approach, fees for each Participant would be proportional to each Participant's contribution to costs, where contribution would be assessed according to an accounting procedure, such as one of the commonly used activity-based costing methodologies.

***Ramsey pricing*:** A Ramsey pricing approach is one that is used when marginal cost pricing is not feasible, mainly when there are large fixed costs to recover. In this context the aim would be to minimise allocative inefficiency by setting fees for each Participant (or class of Participant) such that distortions to demand in the final (retail) market are minimised. This is done by setting prices to different groups in inverse relation to the price sensitivity of these groups. Every group pays at least marginal costs, but 'base-load' users (the least price sensitive) pay relatively more of the fixed costs. Ramsey prices are attractive theoretically but the information requirements for their implementation – the price elasticities of demand of different Participants, – are formidable. Ramsey prices are likely to perform poorly on the simplicity test.

[9] I.e. excluding incremental services whose cost is recovered in other ways e.g. fees for additional bandwidth for communications.

[10] Since NEMMCO does not produce electricity, but instead produces services to Participants in the electricity industry, a fee structure based on MWh purchased by Market Customers is an example of average cost pricing only to the extent that the quantity of services provided by NEMMCO to those Market Customers is proportional to the MWh purchased by them.

Multi-Part pricing: Multi-part pricing is another way of recovering costs when marginal cost pricing is not feasible or not desired. Its basic components are one (or more) fixed fee(s) and one (or more) variable fee(s). A multi-part fee would balance the dynamic efficiency losses that might be caused by the fixed component of the fee, which cannot be passed on down the supply chain (such losses might include delaying investment or new entry) against the allocative efficiency losses from the variable component. While there exists an extensive theoretical literature on optimal multi-part pricing[11], implementation in practice is largely a matter of judgment, since the information required to implement an optimal multi-part price is very difficult to acquire.

In fact while it may not be possible to implement optimal multi part fees, it is possible to implement multi-part fees that are not only reasonably efficient, but satisfy other criteria as well (such as simplicity). Multi-part fees are commonplace in utilities (electricity, gas, water, telecommunications) where there often exists a connection charge (or equivalent) and a per unit of use charge (or in some cases multiple per unit of use charges). In some areas, the pricing is quite complex – e.g. in mobile telephony, users are charged a fixed amount for the handset and a separate fixed amount of rental per month, while calls have both a fixed and per minute cost. In other instances, for example, taxi fares, the structure is relatively simple, with a fixed charge (the flag fall) and a variable charge per kilometre travelled (along with other minor charges). In all cases, these fee structures represent a practical method of recovering the costs (in particular, fixed costs as well as variable) of the entity providing the service.

3.5 Assessment of alternative pricing approaches against clause 2.11.1(b) criteria and efficiency

Table 3.1 provides a qualitative assessment of the alternative pricing approaches against the criteria set out in Clause 2.11.1(b) of the Rules, and economic efficiency.

[11] Stephen J. Brown and David S. Sibley, *The Theory of Public Utility Pricing*, Cambridge University Press, Cambridge, 1986.

Table 3.1

QUALITATIVE ASSESSMENT OF ALTERNATIVE PRICING APPROACHES

Basis of participant fee	Simple	Reflective of extent of involvement	Not unreasonably discrimin-atory	Recovers revenue	Efficient
Marginal cost	Yes in principle, though marginal costs may be difficult to estimate in practice. However, *incremental* costs could be estimated for specific services.	Yes	Yes	No	Yes
Average cost	Yes	Possibly	Possibly	Yes	No
Fully distributed cost	Yes (depending on the detail)	Yes	Yes	Yes	Possibly
Ramsey	No	No	Yes	Yes	Yes (relative to average cost)
Multi-part	Yes, (depending on how many parts)	Yes (depending on the basis of fixed and variable components)	Yes (depending on the basis of fixed and variable components)	Yes	Yes (relative to Ramsey)

From the table, it is evident that all types of pricing approaches satisfy at least some of the criteria, but that none of them definitively satisfies all the criteria.

Marginal cost-based pricing has the theoretical advantage of being allocatively efficient, because the price of services just equals the opportunity cost to society of resources foregone in their production. However, it cannot be used (at least not on its own) to raise revenues for a natural monopoly like NEMMCO, because the revenues raised will be less (probably far less) than total costs. A version of marginal cost pricing, viz incremental cost pricing, can be used for specific services. Incremental costs are the extra costs associated with the provision of an extra service. They can (and typically do) include both a fixed component (i.e. invariant to how much of the extra service is provided) and a variable component that is related to how much of the extra service is provided. In practical pricing problems, an efficient solution is often to set the price of a service at its incremental cost of provision, or if the service is jointly provided with other services (i.e. there are common costs between services), to set the price somewhat higher than incremental cost, so that pricing for that service recovers some common costs.

Apart from what might be called its 'regular' services, NEMMCO provides services incremental services to Participants who request them, e.g., additional bandwidth for use in communications. While it is not feasible for NEMMCO to set its Participant fees to be simply equal the marginal costs of the services it provides to Participants, it is feasible for NEMMCO to charge fees for these incremental services, at the incremental cost of those services.

Average cost pricing is simple and can meet revenue requirements but it is not efficient (in any sense) and it may or may not satisfy the other criteria, depending on how it is implemented. If average cost pricing is implemented just on the basis of the MWh purchased by Market Customers (as was the case in the First Fee Determination), with no charge falling on other Participants then it arguably fails the reflective of the extent of involvement test, because other Participants are also involved with NEMMCO. It also arguably discriminates against Market Customers (as a group), because they would bear the entire burden of the fees. On the other hand, it may be possible to implement an average cost pricing structure based on other data that reflects the involvement of all major classes of Participants and which passes the no unreasonable discrimination test. For example, if the services provided by NEMMCO to Generators is proportional to (or at least positively correlated with) installed capacity by Generators, a fee structure for Generators that is based on historical capacity will be an average cost-based structure that is reflective of their involvement. Alternatively, Generators may be levied fees based on their historical energy produced, as discussed in the next chapter. Each of these alternatives reflects the involvement of Generators with NEMMCO, albeit in different ways.

Fully distributed cost pricing rates quite well according to the criteria. It is relatively simple, is reflective of involvement[12], is non-discriminatory and can be constructed to recover all necessary revenues. As a cost concept, it is more closely related to average costs than marginal costs, so is not generally considered to be efficient. Whether or not (or to what extent) such a fee structure can be said to be consistent with allocative efficiency (at least in comparison with Ramsey pricing, if not marginal cost pricing) depends on the form in which the pricing is structured.[13] This structure might be consistent with productive efficiency if it contributed to a discipline on NEMMCO's costs and services. It would certainly be more consistent than average cost pricing with the Rules criterion of 'reflective of involvement', provided there is sufficient information about the contributions made to cost (in the appropriate economic sense) by each class of Participant.

[12] Fully distributed cost pricing can be implemented in a number of ways; see Brown and Sibley (1986) pp 45-51. In general fully distributed costs for a particular service are equal to the attributable cost of that service plus a fraction of the common costs of all services. This fraction may be calculated as the proportion of total output provided by that service, the proportion of total revenues, or the proportion of total attributed cost. All of these methods relate to "involvement", albeit perhaps in significantly different ways.

[13] Brown and Sibley (1986) pp 49-51.

Ramsey pricing recovers sufficient revenue (by construction, Ramsey prices are set at a level to recover required revenue) does not unreasonably discriminate and is reasonably efficient, certainly in comparison to average cost pricing. However Ramsey pricing fails on the grounds of simplicity, because its implementation would require knowledge of Participants' price elasticity of demand for services provided by NEMMCO. Ramsey pricing may also fail on the grounds of reflective of the extent of involvement test. For example, under Ramsey pricing, the highest fees would be charged to Participants who have the lowest price elasticity of demand, but these Participants may have very little involvement (compared to other Participants) with either NEMMCO's inputs or outputs.

Multi-part pricing can take many forms, but usually is comprised of a fixed component (one that Participants could not avoid by changing the degree of their participation in the market; for example, in the case of Generators, by producing less electricity) and a variable component (that depends on the degree of participation in the market; for example, energy produced or purchased in the market). Depending on how they are designed, multi-part fees can pass the tests of simplicity, reflective of the extent of involvement, and no unreasonable discrimination; and they can be designed to raise sufficient revenue. For example, it is possible to design the fixed component of a multi-part fee that reflects the involvement of Participants (e.g. based on the power-generating capacity of generators). Equally, it is possible to design the fixed component which bears no relation to involvement e.g. all Participants pay the same dollar amount of fixed fee. The former is likely to pass the reflective of extent of involvement test; the latter is not.

Multi-part fees also do well on the efficiency test. It has been shown that it is always possible to design multi part fees that are more efficient than fees based on Ramsey pricing.[14]

3.6 Conclusion

Based on economic principles, multi-part fees are the most likely to pass the criteria set out in clause 2.11.1(b) of the Rules and section 50 of the NEM, as well as satisfying the NEM objectives in relation to economic efficiency. Care must be taken in the specific design of the multi-part fees; particularly, in order to satisfy the reflective of extent of involvement test, multi-part fees should be designed so that those Participants who have a greater involvement with NEMMCO's activities should pay more in fees than those Participants with a lower level of involvement. In this respect, the design of multi-part fees may take on some of the features of Fully Distributed Cost pricing.

[14] Robert Willig, "Pareto-Superior Nonlinear Outlay Schedules", *Bell Journal of Economics*, 9, pp 56-69.

It should also be emphasised that it is not necessary for all Participants to be charged multi-part fees in order to satisfy clause 2.11.1 of the Rules and efficiency tests. For example, in practice, while it may be a simple matter to charge a fixed component of fees to one class of Participants, it may not be possible, at least not in a simple way, to charge a fixed fee to another class. In such a case, the latter class may simply be charged a variable fee. These issues are discussed in the following chapter.

Chapter 4

Design of a Participant Fee Structure

4.1 Introduction

This chapter focuses on the design of a Participant fee structure, in the light of the discussion in the previous chapter. It discusses the following issues: *who* (which classes of Participants) should pay fees; *what* fees should be levied on those Participants and *how* the fees should be divided amongst those classes of Participants.

4.2 Who should pay Participant Fees?

General NEMMCO fees

NEMMCO believes that only a small proportion of NEMMCO's costs can be ascribed to incremental services (other than those associated with Full Retail Competition). The bulk of NEMMCO's costs must therefore be recovered through more general mechanisms.

NEMMCO interacts with five key classes of NEM Participants: Generators, Market Customers (mostly retailers), MNSPs, TNSPs and DNSPs. Generators in turn fall into four categories: Market Scheduled, Market Non Scheduled, Non-Market Scheduled, and Non-Market Non-Scheduled.

NEMMCO's analysis found that Generators (apart from Non-Market, Non-Scheduled generators) and Market Customers are involved with NEMMCO's outputs. Therefore, these classes of Participants should pay fees to NEMMCO.

On the other hand, DNSPs and Non-Market Non-Scheduled Generators are not primarily involved with NEMMCO's outputs, while TNSPs have an interdependent relationship with NEMMCO. Therefore, on the reflective of extent of involvement criterion, these Participants should not pay any general NEMMCO fees (other than fees for incremental services, where relevant).

Fees for incremental services

As discussed in Chapter 3, where the incremental costs of providing specific services can be identified then simple fees that are specific to those services should be charged directly to the Participants who acquire those services.

Such fees would pass the reflective of extent of involvement and no unreasonable discrimination tests and be efficient.

4.3 What fees should be levied?

As discussed in Chapter 3, multi-part fees, comprising a fixed component (which, by definition, cannot be varied by changes in the Participant's activity in the NEM, or involvement with NEMMCO, in the year in which the fees are levied); and a variable component are the most likely to pass the criteria set out in clause 2.11.1(b) of the Rules and section 50 of the NEL, as well as satisfying the NEM objective of efficiency.

Fixed fees on Participants are efficient because they do not affect the production decisions of those Participants (or, if they are levied on final users, do not affect their consumption decisions).[15] Fixed fees also cannot be passed down the supply chain to final users (except in the long run where capacity is variable, as are all costs). This is true regardless of the competitive structure of the NEM. At all times, price setting in the NEM will be a function of Participants' marginal costs. For those parts of the NEM that are very competitive, prices will be set at or close to marginal costs. For those parts of the NEM that may be less competitive, prices will be set as a mark-up over marginal costs. But Participants' prices will never be set as a function of their fixed costs, including fixed fees levied by NEMMCO.

Fixed fees on Generators

Two kinds of fixed fees on Generators which would satisfy the criteria set out in clause 2.11.1(b) of the Rules and section 50 of the NEL, as well as satisfying the NEM objective of efficiency, are fees based on historical capacity, and fees based on historical amounts of electricity scheduled.

Arguments can be made for both types of fees and, in fact, both types were levied on Generators following the 2003 Fee Determination. The case for levying both types of fixed fees is that there are different types of Generators with different characteristics and it is reasonable to set a fee structure that does not unduly favour or disfavour any particular type.

For example, it can be argued that fixed fees based solely on historical capacity may unduly favour Generators with high utilisation, such as base load generators. On the other hand, fixed fees based solely on historical amounts of energy scheduled may unduly favour Generators with low utilisation, such as peaking generators.

It may be possible, in theory, to charge capacity-based fees to peaking generators and energy-based fees to base load generators but in practice the distinction between base load and peaking generators is difficult to make, especially when the category of intermediate generators is added. The merit order of Generators in the NEM, while reasonably stable (with low cost coal fired generators generally the first to be dispatched) is not immutably fixed and the categories "base load", "intermediate", and "peaking" are not useful for the purposes of designing a fee structure to recover NEMMCO's costs.

In the circumstances, a combination of historical capacity and historical energy scheduled forms a reasonable basis for the setting of fixed fees on Generators.

[15] The one exception to this statement is when fixed fees are so large that they affect the decision about whether to participate in the NEM at all. This is unlikely to be a practical consideration with Participant fees.

Variable fees on Generators

An obvious candidate for variable fees for Generators is one based on energy scheduled in the contemporaneous year that the fee is to be paid. However, since Generators operate upstream from Market Customers, such fees would be very likely to be passed on in higher bid prices in the NEM. To the extent that the wholesale market is competitive (with generators' bids equal to their marginal costs), variable fees on Generators would be passed on dollar for dollar, thus defeating the purpose of levying fees on Generators in the first place.

Another candidate for variable fees on Generators would be their spot market revenues. However, these too would be passed on in higher bid prices.

There does not appear to be any practical basis for levying variable fees on Generators.

Fixed fees on Market Customers

There appear to be few options for levying fixed fees on Market Customers, where there is no measure that is analogous to historical capacity. One possibility would simply be to levy a constant dollar amount on each Market Customer, large or small. While this would not be able to be passed on in higher prices for end users, it would create economies of scale in electricity retailing. This would retard competition and be damaging for efficiency in the retail electricity market. Moreover, a fee of this type, while certainly simple, would probably not reflect the extent of Market Customers' involvement with NEMMCO.

Another possibility would be to use historical load. This would not create economies of scale, and be more reflective of involvement, and so would be a better fixed fee than a constant dollar amount, however, if load in one year is highly correlated with load the following year, fixed fees of this type may affect a Market Customer's pricing decisions if they are forward looking, and so many of the efficiency benefits of a fee of this type may be lost.

As discussed above, there is a good case to be made for using historical amounts of energy scheduled as a basis for a fixed fee for generators. It may appear inconsistent to not similarly use historical load as a basis for a fixed fee on Market Customers. However, it should be recalled that the principal reason for using historical energy as well as historical capacity for generators is that the use of either one but not the other may unduly favour certain types of generators. Analogous arguments do not exist for Market Customers and so, on balance, the case for using historical load as a basis for levying fixed fees on Market Customers is not made.

In sum, there do not appear to be any satisfactory options for levying fixed fees on Market Customers.

Variable fees on market customers

The most obvious candidate here is a fee based on load in the current year. This type of fee has been levied in the past. It would pass all the clause 2.11.1 criteria and also be reasonably efficient, even though it might be expected to be passed on to end users. Because the quantum of fees to be levied on Market Customers would be likely to be small relative to their total costs the effect on energy prices and thus energy demand would be expected to be small, so the efficiency cost of this variable fee would also be expected to be small.

Another possibility for a variable fee, discussed during the 2003 Fee Determination is based on the number of customer connections. This fee would be passed on to consumers in terms of higher service to property charges, and it is not obvious that this would be any better, from any efficiency viewpoint, than a fee based on load which was passed on as higher energy charges.

Furthermore, connection-based charges may be problematic for equity reasons if prices for big and small customers alike are increased by the size of the charge.

Furthermore, where connection-based charges may fail the clause 2.11.1(b) criteria is in the reflective of extent of involvement test. A market customer with a small number of large end users would pay lower fees than a market customer with a large number of small end users. Yet, if they both purchase about the same amount of electricity in the NEM, then arguably, they have the same involvement with NEMMCO and should pay about the same fees.

4.4 How should the fees be divided?

Thus far, the discussion in this chapter has been about the type of fees that could be levied on Generators and Market Customers. This section discusses how the fees should be allocated between these two classes of Participants.

The starting point for this discussion is *NEMMCO's Activity Survey and Cost Analysis*, which found that most of NEMMCO's general costs could be allocated to either Market Customers or Generators, with the relative split being 55 per cent to Market Customers and 45 per cent to Generators[16].

Economic analysis does not provide a unique mapping of possible fee structures to cost allocation, but a reasonable solution for raising revenue to cover costs that can be allocated consistent with the clause 2.11.1(b) and section 50 criteria and the NEM objective of economic efficiency is as follows.

1. The 45 per cent of allocated costs that can be ascribed to Generators should be raised as fixed fees, divided equally between fees based on historical capacity and fees based on historical energy generated (i.e. capacity and energy generated in the year prior to the year for which fees are being raised).

2. The 55 per cent of allocated costs that can be ascribed to Market Customers should be raised as variable fees, based on load in the current year. [17]

[16] Here, the term "Generators" excludes Non-Market, Non-Scheduled Generators (who are not involved with NEMMCO's outputs in a significant sense) and includes MNSPs, who, while they do not generate electricity, bid into the market, and are dispatched by NEMMCO, and so have an involvement with NEMMCO's outputs in a manner very similar to generators.

[17] Since NEMMCO's Participant Fees for a given year are set at the beginning of that year, the precise fee in terms of $/MWh for that year needs to based on an estimate of load for that year. A reasonable estimate for load in a current year is load for the previous year (or a 12 month period ending just prior to the current year). Some adjustment to fees may be necessary during the current year if actual load differs from estimated load.

For the costs that cannot be allocated, it is, by definition, not possible to determine the *extent* of involvement of different Participants. In the circumstances, it is difficult to justify levying fees on any class of Participant to recover costs which cannot be allocated to them, and so do not reflect the extent of their involvement.

Nonetheless, under clause 2.11.1(b)(2), Participant Fees should recover NEMMCO's budgeted revenue requirements. This includes not just costs that can be allocated to particular Participants, or classes of Participants, but those costs that cannot be allocated as well. In the circumstances, a reasonable and efficient method for recovering unallocated costs is from end users *via* the Participants that are closest in the electricity supply chain to those end users.

This can be achieved by a fee that is levied on Market Customers based on load in the current year. It is reasonable to expect that Market Customers would relatively quickly pass the fee onto end users, so that it would be end users, not Market Customers, who would bear the burden of the fee.

It is also likely that a variable fee that was levied on Generators, for the purposes of recovering unallocated costs, would also be passed down the supply chain, first into higher wholesale prices, then eventually into higher retail prices. However, since the purpose of the fee would be to recover unallocated costs from end users, it would more efficient to levy the fee on Participants who are closest to end users i.e. Market Customers.

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Chapter 5

International comparisons

5.1 Introduction

Clause 2.11.1(d) of the Rules states that:

> In undertaking the process described in clause 2.11.1(a) NEMMCO must consider other fee structures in existence which it thinks appropriate for comparison purposes.

In previous decisions, NEMMCO has investigated international comparisons in satisfying this requirement. This chapter provides an updated summary of electricity pools in international markets, as well as the current development of an electricity pool in Western Australia.

5.2 New Zealand

The Electricity Commission is a public authority of NZ, constituted under the *Electricity Act* 1992 (NZ) to operate the NZ electricity market. The Commission's functions are detailed in section 172O of the Act.

The Commission's funding is paid for by the Government, who seeks an appropriation each year from Parliament to make payments to the Commission to enable it to perform its functions, powers and duties. These costs are to be recovered by way of levy from every industry participant (or class of industry participants) prescribed by regulations under section 172ZC of the Act.

The *Electricity (Levy of Industry Participants) Regulations* 2005 (NZ) provide for levies to be payable by three classes of industry participants:

- generators - participants who sell electricity in the wholesale market;
- purchasers - participants who buy electricity in the wholesale market; and
- distributors - participants who convey electricity.

The Regulations require the Commission to adopt a 3-step process in levying fees:

Step 1 involves a determination of the costs of certain activities, prescribed by Table 1 of Regulation 7;

Step 2 requires the costs of each activity to be allocated to the classes of participants according to fixed proportions listed Table 1 of Regulation 7 as follows; and

Step 3 requires the costs payable by each participant class to be divided by a number calculated in accordance with the Regulations.

Table 5.1

PARTICIPANT FEES IN NEW ZEALAND

Activity	Classes of participants to whom costs of activity are allocated		
	Generators	Purchasers	Distributors
Common quality operations	1/3	1/3	1/3
Market operations	1/2	1/2	
Registry and consumers operations		1/2 to retailers	1/2
Supply security operations		All to purchasers	
Transmission operations			All to Transpower
Electricity efficiency operations		All to purchasers	
Other activities	1/3	1/3	1/3
MACQS reform operations[18]	1/3	1/3	1/3

Source: New Zealand regulations

5.3 Alberta, Canada

The Alberta Electric System Operator (AESO) is constituted by the *Electric Utilities Act 2003* (Alb). It must exercise its powers and carry out its duties, responsibilities and functions in a timely manner that is fair and responsible to provide for the safe, reliable and economic operation of the interconnected electric system and to promote a fair, efficient and openly competitive market for electricity.

The transmission tariff is set by the AESO by application to the Energy and Utilities Board of Alberta (EUB).

The prices and rates are set in a two-step process detailed in the ISO Rules:

1. Phase I application determines the revenue requirement for the AESO. The EUB decision on this application determines the prudently incurred costs by the AESO necessary to manage the transmission system in Alberta.

2. Phase II application determines the allocation of costs between the different classes of customers for the provision of system access service by the AESO. The EUB decision on the Phase II application determines the rates charged to customers to recover the revenue requirement determined in Phase I.

The AESO is a not for profit organisation. It is required to submit an annual budget detailing its estimated expenditures, costs and expenses in order to carry out its powers, duties, responsibilities and functions and those of the Market Surveillance Administrator and:

[18] MACQS means Multilateral Agreement on common Quality Standards

- its estimated revenue from ISO fees, and
- its estimated revenue from the ISO tariff.

It is also required to submit to the EUB a single tariff setting out:

(a) the rates to be charged for each class of system access service; and

(b) the terms and conditions that apply to each class of system access service provided to persons connected to the transmission system.

The rates to be charged for each class of service must reflect the prudent costs that are reasonably attributable to each class of system access service provided.

The rates set out in the tariff must not be:

(a) different for distributors, customers who are industrial systems or a person who has made an arrangement for direct access to the wholesale pool with AESO as a result of the location of those systems or persons on the transmission system; and

(b) unjust or unreasonable simply because they comply with clause (a).

5.4 Ontario, Canada

The Independent Electricity System Operator (IESO) is constituted by the *Electricity Act 1998* (Ont).

It is required to submit its proposed expenditure and revenue requirements for each fiscal year and the fees it proposes to charge during the fiscal year to the Ontario Energy Board for review and approval, but shall not do so until after the Minister approves or is deemed to approve the IESO's proposed business plan for the fiscal year.

The IESO must publish the fees for market participants under the Market Rules, which must be those approved by the Ontario Energy Board; these permit the IESO to recover in any way it sees appropriate

5.5 Europe

A number of electricity pools exist in Europe, including the Nordic Pool, ELEXON in the United Kingdom, and the Baltic Pool.

The Nord Pool Group[19] operates a spot market for physical contracts (Elspot) under the Nord Pool Spot Company. Elspot is based on bids for purchase and sale of hourly contracts using three different bidding types – hourly bids, block bids and flexible hourly bids that cover all 24 hours of the next day. Prices are determined through auction trade for each delivery hour.

[19] For more in formation, see http://www.nordpool.com.

Participants in the Elspot market must pay an entrance fee and an annual fee as well as volume dependent fees. These fees may be changed with one month's notice. Currently the entrance fee is set at NOK 25 000. Elspot participants may pay a fixed annual fee of NOK 100 000 as well as a variable trading fee of NOK 0.25/MWh or a fixed fee of NOK 0 and a variable trading fee of NOK 1.00/MWh. Fixed and variable fees also exist for Elspot clearing customers and gross bidding activities.

The Elbas market acts as a supplement to the Elspot market. The Elbas market provides continuous trading 24 hours a day covering individual hours, up to one hour prior to delivery. The traded products are one-hour long contracts, traded in Euro.

The cost structure of the Elbas market is the same for all participants. All Elbas participants must pay an entrance fee of NOK 25 000, with an annual fee of EUR 12 000 for direct participants and for trading and clearing representatives. For clearing customers, the annual fee is EUR 6000. There is also a monthly service fee of EUR 350 for all market participants, and an annual fee of EUR 6000 for an additional trading account. The combined transaction and clearing cost is EUR 0.08/MWh.

In the United Kingdom, ELEXON procures, manages and operates services and systems which enable the balancing and imbalance settlement of the wholesale electricity market and retail competition in electricity supply.[20]

Market participation charges are paid monthly. Participants are subject to the following fees:[21]

- Main Funding Share — a monthly fee that reflects a trading party's proportionate share of aggregate credited energy volumes.
- SVA (Consumption) Funding Share — a monthly fee that reflects a trading party's proportionate share of aggregate non-half hourly consumption for that month.
- SVA (Production) Funding Share — a monthly fee that reflects a trading party's proportionate share of aggregate credited energy volumes for Production Balancing Measure Units for that month.
- General Funding Share — a monthly fee that refects a trading party's proportionate share of the aggregate of certain ELEXON charges for that month.
- Annual Funding Share — the sum of a trading party's General Funding Shares for the 12 consecutive months ending with and including that month, divided by the sum for all trading parties of their General Funding Shares for such 12 months.

[20] See http://www.elexon.co.uk for more information.

[21] ELEXON 2001, *The Balancing and Settlement Code*, 21st March, http://www.elexon.co.uk/documents/BSC_and_Related_Documents/BSC_-_Live_Version/Cover_BSC.PDF, Accessed 7 November 2005.

All charges are calculated in accordance with complicated formulae detailed in Section D of the Balancing and Settlement Code.

After regaining independence in 1992, the Baltic IPS (Interconnection of the Power Systems) was set up as a power pool in order to co-ordinate operations of electric power supply in the Baltics. The operations dispatch management of the Baltic IPS is carried out by the Baltic Power Systems Regional Control Center, DC. This is within the framework of a multilateral agreement on the parallel operation of Baltic country power systems.[22]

5.6 United States of America[23]

In the early 1990s, the American Congress and the Federal Energy Regulatory Commission (FERC) commenced the restructuring of the wholesale electricity power market in the United States of America.

Overseeing the electricity industry nationally, the FERC created independent system operators (ISOs) so as to oversee restructuring on a regional basis. These ISOs were given responsibility for establishing and overseeing competitive wholesale electricity markets. Large and significant ISOs include the California, Pennsylvania-New Jersey-Maryland (PJM), New England, New York and Midwest ISOs.

The California ISO assumed computerised control of California's wholesale power grid in 1998, and directs the flow of electricity along long distance, high voltage power lines that connect California with neighbouring states as well as Mexico and British Columbia. The ISO is also the operator of the state's wholesale power grid, serving 30 million Californians.[24] Its tariffs are collected in accordance with detailed instructions contained in the ISO Tariff, both as to its components and how collection is to be levied against participants.

The New York ISO (NYISO) was formed in 1998 as part of the restructuring of that state's electric power industry. An outgrowth of the New York Power Pool, its mission is to facilitate fair and open competition in the wholesale power market and create an electricity commodity market in which power is purchased and sold on the basis of competitive bidding. On commencement, the NYISO opened with all standard markets, including the day-ahead and real-time energy, reserve, and regulation markets, as well as well as Transmission Congestion Contracts and Installed Capacity Market auctions.[25] Fees are levied on participants on a /MWh basis.[26]

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22 STAT-USA, as reported by Industry Canada, http://strategis.ic.gc.ca/epic/internet/inimr-ri.nsf/en/gr105471e.html, Accessed 7 November 2005.

23 This section describes institutional arrangements in the United States, and reports information on the level of fees. However no instructive information on the structure of fees appears to be available.

24 California ISO, *The Scope of the California ISO*, http://www.caiso.com/docs/2002/05/20/2002052011004217950.pdf, Accessed 7 November 2005.

25 See www.nyiso.com/public/company/about_us/index.jsp for more information.

26 NYISO (New York Independent Service Operator) 2005, http://www.nyiso.com/public/webdocs/market_data/pricing_data/rate_schedule_1/2005/oct_2005.pdf, Accessed 8 November 2005.

The PJM ISO is a regional transmission organisation that coordinates the movement of electricity through all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia and the District of Columbia. PJM operates the world's largest competitive wholesale electricity market, with 51 million people covered by PJM's operations.[27]

Currently PJM recovers administrative costs under a formula rate system. Recently PJM announced its intention to establish fixed rates for services. Instead of automatic recovery of costs, PJM's administrative costs will be received and approved much like utility rates. Administration rates are charged to PJM members to pay for the cost of operating the electric transmission system and the wholesale electricity markets. The composite average rate for all service categories under the stated rates would be US$0.39/MWh as compared to US$0.40/MWh under the current formula rates.[28]

ISO New England is a regional transmission organisation serving Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont and provides three core functions. It provides for the minute-to-minute reliable operation of New England's bulk electric power system; development, oversight and administration of the state's wholesale electricity marketplace, through which bulk electric power has been bought, sold and traded since 1999; and the management of comprehensive bulk electric power system and wholesale markets' planning processes.[29] ISO New England works closely with the New England Power Pool, a group of generators, utilities, marketers, public power companies and end users.[30]

The Midwest ISO (MISO) launched its energy markets on 1 April 2005. MISO provides a market-based congestion management program and spot market and includes a day-ahead energy market and a real-time energy market, locational marginal pricing and a market for Financial Transmission Rights. MISO's Energy Market Tariff includes both fixed and usage based fees.

5.7 Western Australia

The Wholesale Electricity Market Rules govern the market for the South West Interconnected System (SWIS) which is being established as part of the state government's reform of the electricity sector in Western Australia. The energy market is planned to commence on 1 July 2006. The IMO is the Market Operator and the Market Administrator.[31]

[27] See www.pjm.com/about/glance.html for more information.

[28] PJM (Pennsylvania-New Jersey-Maryland) 2005, 'PJM files plan to hold rates steady', 6 July, http://www.pjm.com/contributions/news-releases/2005/20050706-stated-rate-filing.pdf, Accessed 7 November 2005.

[29] See http://www.iso-ne.com/aboutisp/co_profile/overview/index.html for more information.

[30] See http://www.iso-ne.com/aboutiso/co_profile/history/index.html for more information.

[31] For more information see, Office of Energy – Electricity Reform Implementation Unit, Government of Western Australia, http://www.eriu.energy.wa.gov.au/cgi-bin/reports.pl?cat=Wholesale%20Market&subcat=Wholesale%20Electricity%20Market%20Rules.

The establishment of the new wholesale market is in its final stages of implementation and aims to facilitate competition and encourage private investment in the generation and retail sectors of the electricity industry.

The Market Rules include a mechanism (the Reserve Capacity Mechanism) for ensuring that adequate generation and demand side management capacity is available to maintain reliability and security of the electricity supply.

The IMO will recover its budget, system management costs and that portion of the Western Australian Economic Regulation Authority's budget relating to its wholesale electricity market activities, through a per MWh fee on metered generation and consumption in the SWIS.[32]

[32] Office of Energy 2004, *Wholesale Electricity Market Design Summary*, 6 October, pp. 2, 14, http://www.eriu.energy.wa.gov.au/files/wholesale/Market%20Summary%206%20October%202004%20-%20clean.pdf, Accessed 9 November 2005.

Chapter 6

Conclusions and recommendations

6.1 Conclusions

A number of alternative pricing approaches exist which may be used to underlie the structure of Participant fees. These include marginal cost pricing, average cost pricing, fully distributed cost pricing, Ramsey pricing and multi-part pricing. All types of pricing approaches satisfy at least some of the criteria that NEMMCO must follow in setting Participant fees, however, no pricing approach definitively satisfies all the criteria. The particular design of Participant fees i.e. the application of a chosen pricing approach, must strike a balance in terms of satisfying the criteria.

6.2 Recommendations

On balance, a multi-part fee strikes a reasonable balance in satisfying the necessary criteria for Participant fees.

The recommended Participant fee structure is as follows.

1. For the vast bulk of NEMMCO's total costs (general costs):
   - costs which can be allocated to Generators plus MNSPs should be recouped on the basis of historical capacity and historical energy produced, in equal amounts;
   - costs which can be allocated to Market Customers should be recouped on the basis of contemporaneous load (i.e. MWh of energy purchased); and
   - costs which cannot be allocated to any class of Participants should be recovered from end users. The most efficient way to do this is to levy fees on the Market Participants closest in the supply chain to end users i.e. Market Customers, in the expectation that these fees will be passed on relatively quickly to end users. The particular fee for this purpose should be recouped on the basis of contemporaneous load.
2. Services deemed to be 'incremental' i.e. those services whose recipients can be readily identified, should be charged at the incremental cost to NEMMCO of providing those services i.e. the cost that NEMMCO would avoid if the service were not provided.

ASSESSMENT OF ECONOMIC EFFICIENCY OF PARTICIPANT FEE STRUCTURES

A Final Report for NEMMCO

Prepared by NERA

March 2003
Sydney

Greg Houston
Tom Hird

n/e/r/a

National Economic Research Associates
Economic Consultants

Level 6, 50 Bridge Street
Sydney NSW 2000
Australia

Tel: (+61) 2 8272 6500
Fax: (+61) 2 8272 6549
Web: http://www.nera.com

An MMC Company

TABLE OF CONTENTS

1. INTRODUCTION AND BACKGROUND

This report provides a summary of economic efficiency issues associated with a range of different options for recovering the costs of the National Electricity Market Management Company (NEMMCO) and the National Electricity Code Administrator (NECA) from National Electricity Code (the Code) participants. It is intended that NEMMCO will use this report to inform its 2003 Participant Fee Determination in relation to the structure of participant fees to apply from 1 July 2003.

In developing the analysis in this report we have had regard to:

- the submissions made in response to NEMMCO's Issues Paper concerning the 2003 Participant Fee Determination, dated 11 September 2002;
- views expressed at NEMMCO's open forum held in Sydney on 11 November 2002 to discuss the 2003 Participant Fee Determination;
- the expert statements of Dr Vince Fitzgerald, Dr Reinhard Pauls and Mr Graham Holdaway in relation to the dispute concerning the 31 March 2000 Participant Fee Determination, made available to NERA by NEMMCO;
- the December 2002 decision of the Second Group on the Amended Dispute Reference Notice of National Generators Forum Concerning NEMMCO Second Participant Fee Determination Dated 6 December 2002; and
- the submissions made in response to NEMMCO's Draft Determination in relation to the 2003 Participant Fee Determination.

It is important to note that the role of 'economic efficiency' considerations in NEMMCO's 2003 Participant Fee Determination is governed by the legal constraints within which NEMMCO operates. Section 2.11.1(b) of the Code specifically addresses the principles for setting the structure of participant fees. The language of section 2.11.1(b), however, does not involve words or phrases that have any distinct or precise meaning in the economics discipline. It follows that it is not the role of this report to deal definitively with the various legal interpretation issues arising from section 2.11.1(b).

Rather, our report aims:

- to provide a framework for the determination of Participant fees, given NEMMCO's interpretation of the requirements of section 2.11.1(b) of the Code (section 2);
- to discuss the issues associated with maximising economic efficiency consistent with the Code interpretation that has been adopted by NEMMCO (section 3); and
- to assess various Participant fee structures in light of the economic efficiency principles derived above (section 4).

Finally, section 5 draws together the analysis and presents our recommendations for determining both the allocation of NEMMCO's costs between Code Participants and for a fee structure that recovers those costs with minimum compromise in terms of economic efficiency.

2. FRAMEWORK FOR PARTICIPANT FEE DETERMINATION

This section first describes the context for the participant fee determination. It then develops that context to derive a framework to guide the process of moving from NEMMCO's total annual costs through to a conclusion on both the incidence and structure of Participant fees for each relevant class of Code Participant.

2.1. Code Requirements

Section 2.11.1(b) of the Code identifies a number of principles for setting the structure of participant fees:

> The structure of *Participant fees* should, to the extent practicable, be consistent with the following principles:
>
> (1) the structure of *Participant fees* should be simple;
>
> (2) ….[1]
>
> (3) the components of *Participant fees* charged to each *Code Participant* should be reflective of the extent to which the budgeted revenue requirements for *NEMMCO* and *NECA* involve that *Code Participant*; and
>
> (4) *Participant fees* should not unreasonably discriminate against a category or categories of *Code Participants.*

The Code does not expressly indicate that any one or more of these principles should have greater weight than others. NEMMCO has advised NERA that this suggests equal weight should be given to each principle. However, where it is not practicable for NEMMCO to satisfy all of the principles or to satisfy all of them to an equal degree, NEMMCO believes that it is permitted to adopt a Participant fee structure that is not equally consistent with each of these principles.

NEMMCO has also advised that where it finds there are a number of Participant fee structures that satisfy the criteria set out at section 2.11.1(b) of the Code, it proposes to have regard to the Code and Market objectives set out at clauses 1.4(b) and 1.3 of the Code. NEMMCO has interpreted these objectives as requiring it to adopt the Participant fee structure that is most likely to foster economically efficient outcomes in the national electricity market (NEM).

Of the principles established at section 2.11.1(b), arguably the most difficult to interpret and apply in determining the allocation of fees amongst Code Participants is 2.11.1(b)(3). The

[1] 2.11.1(b)(2) relates to the timing of recovery of costs including establishment costs.

interpretation of this sub-section in turn depends on the intended meaning of the words 'be reflective of' and 'involve' in the phrase 'be reflective of the extent to which the budgeted revenue requirements for NEMMCO and NECA involve that *Code Participant*'.

For the purposes of the 2003 Participant Fee Determination, we understand that NEMMCO's approach to the application of these criteria is, in general terms, as follows:

- where it is practicable for NEMMCO to identify actions on the part of both Code Participants and other parties that involve the exercise of discretion on their part, and that such discretionary actions cause additional costs to be incurred by it, NEMMCO will seek to levy fees in relation to those actions that recover the relevant incremental costs;
- where it is practicable for NEMMCO to identify costs that can reasonably be allocated to a class or classes of Code Participants that share characteristics such that their involvement with NEMMCO's outputs is likely to have the same or similar cost implications, it will seek to do so; and
- where there is no practicable and reasonable basis upon which remaining costs can be allocated to either individual or classes of Code Participants, NEMMCO will seek to allocate those costs in accordance with the other Code criteria and economic principles.

2.2. Framework for Allocating Costs

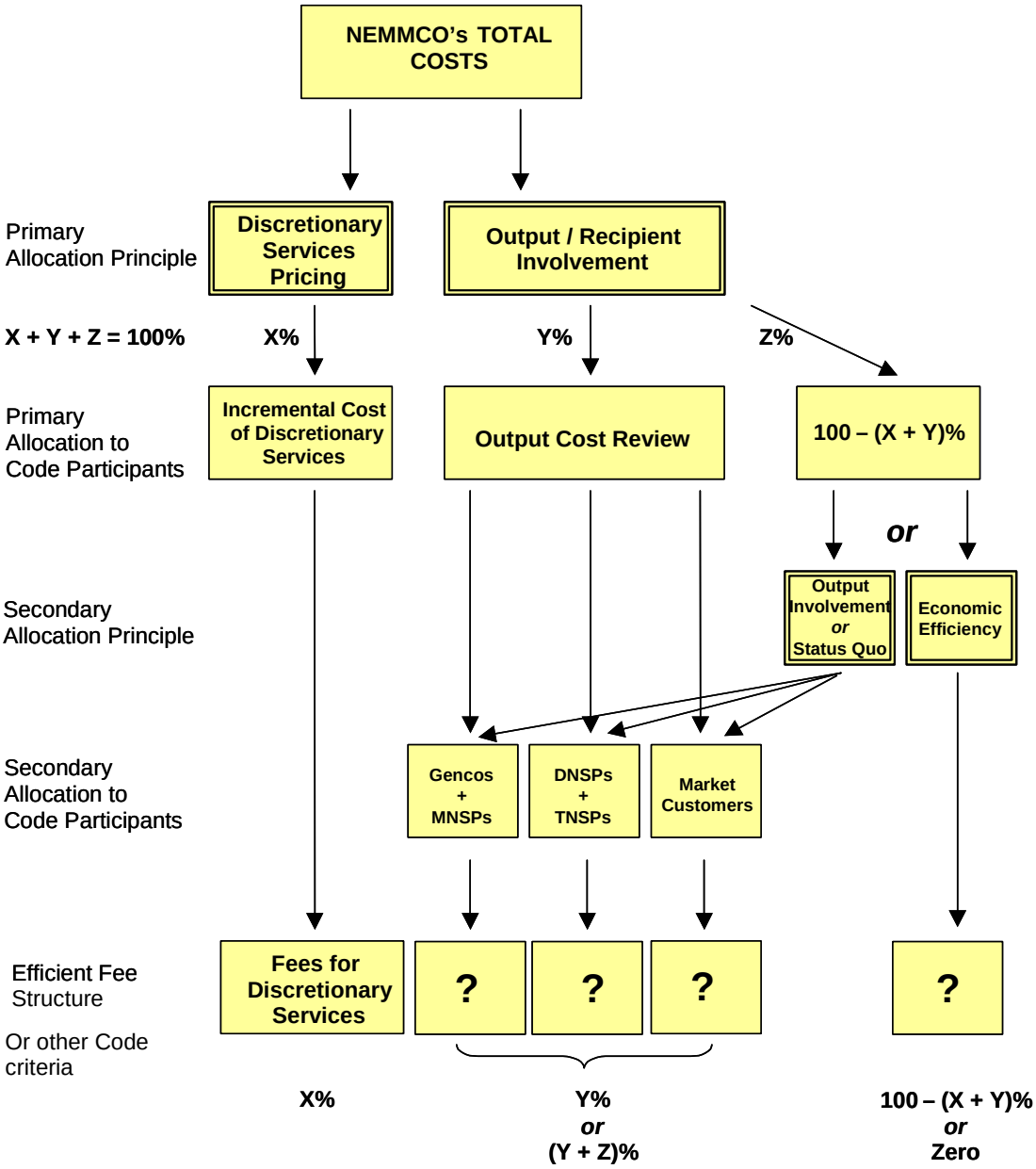
Putting into practice the above interpretation of section 2.11.1(b) involves moving in a number of distinct steps from the sum of NEMMCO and NECA's total costs to reach decisions on a fee structure applying to each relevant class of Code Participant that will recover those total costs.

This section describes those steps, under three separate headings, ie:

- costs determined in accordance with the 'discretionary service' principle;
- costs determined after applying the 'reflective of involvement' principle; and
- 'unallocated costs', representing the remaining total costs, having applied each of the previous two principles.

Figure 2.1 summarises these steps and illustrates how they each fit together.

Figure 2.1: Framework for Participant Fee Determination



2.2.1. Discretionary Service Principle

The application of the 'discretionary service' principle involves the following sequential steps:

1. Undertake a review of the extent to which there are discretionary actions (or, conceivably, inactions) on the part of Code Participants that cause additional costs to be incurred by NEMMCO, and for which it is practicable to recover those costs in the form of fees for incremental services so provided.

2. For those discretionary actions or services provided by NEMMCO, an analysis of the incremental costs incurred per unit of discretionary service should be undertaken.

3. Finally, a fee schedule needs to be determined by NEMMCO in line with the incremental cost per unit of discretionary service provided by it. We note that a typical charging unit may involve either a fixed fee per specified unit of service (such as the provision of high speed data connections to NEMMCO's market information systems) or, alternatively, a standard fee per unit of staff time.

In Figure 2.1, the above process is characterised as representing X% of NEMMCO's total costs.

2.2.2. Reflective of Involvement Principle

The application of the 'reflective of involvement' principle involves the following sequential steps:

1. Undertake a review of the range of distinct outputs or services that NEMMCO provides to Code Participants, over and above those services identified or determined under the discretionary services pricing principle described above. We note that an important distinction in relation to the outputs determined under this principle is that Code Participants who receive or benefit from them are not in a position to influence whether or in what quantity they receive such outputs. In other words, Code Participants cannot exercise any significant discretion as to how much of these services or outputs that they receive or cause NEMMCO to provide.

2. For those (non-discretionary) outputs or services identified above, an analysis needs to be undertaken of costs incurred by NEMMCO that are attributable to the provision of those outputs. In this context, attribution is designed to identify those costs that NEMMCO would not expect to incur under the hypothetical circumstance where it was no longer required to provide the relevant output. Such costs would typically be determined following an analysis of:

   - staff time devoted to each of those activities and the corresponding annual direct cost per employee;
   - an allocation of office accommodation, staff-related IT and other costs; and
   - the allocation of any other non-staff costs attributable to the provision of that output – such as the IT systems that support the output.

3. The total of the costs that can be attributed to the provision of each NEMMCO output then needs to be allocated to Code Participants, in line with the extent of involvement by each individual or class of Code Participant as a recipient of that output. Note that this allocation process requires either a metric or a binary test for determining both the quantum of the output and the extent to which costs attributable to that output should be allocated to one class of Code Participant

relative to another. By way of example, recipients of or involvement with the output 'economic operation' are both Generators and Market Customers - the two parties on each side of every market transaction. Options for an appropriate metric for allocating the cost of this output between these two types of Code Participant might include a binary test of involvement, or some measure of the quantity of output received, such as MWh of energy, or the dollar value of each settlement transaction.

4. The above three steps reach the position where that proportion of NEMMCO's total costs which is attributable to the provision of its various outputs have been allocated either to individual Code Participants or to classes of Code Participant who receive those outputs. The final step in determining a fee structure to recover those costs involves the application of, *inter alia*, an economic efficiency criterion to determine the basis upon which charges will be set for that class of Code Participant. It is this criterion that is the principal focus of the remainder of our paper.

In Figure 2.1, the above process is characterised as representing Y% of NEMMCO's total costs.

2.2.3. Otherwise Unallocated Costs

Application of the 'discretionary service' and 'reflective of involvement' principles will result in the determination of Participant fees that account for some but not all of NEMMCO's total costs. Figure 1 depicts the extent of costs accounted for under these steps as the sum of X and Y%. The application of this final principle accounts for the residual amount of NEMMCO's total costs, and is represented as Z% in figure 1.

The application of this 'otherwise unallocated costs' principle involves the following steps.

1. Subject to satisfactorily meeting the requirements of 2.11.1 of the Code, the residual of NEMMCO's total costs after application of the two prior principles for determining Participant fees should be allocated to whichever class of Code Participant and whichever corresponding fee structure best meets the criterion of economic efficiency. Note that this principle involves determining simultaneously both the class of Code Participant on which the residual costs should be levied, and the form of fee structure applicable to that class.

2. As discussed in section 5 of this paper, the application of this principle may not be capable of determining a single class of Code Participants for whom it could confidently be determined that the corresponding fee structure was likely to be more efficient than any other. In that event, NEMMCO would find it itself in the position of being able to exercise discretion in relation to the allocation of this residual component of costs between two or more classes of Code Participant. One way to exercise such discretion would be to draw from a principle[2] sometimes applied in

[2] See, for example, Graham Holdaway, *Participant Fee Dispute in the Electricity Industry*, 12 August 2002, para 2.1.9

activity costing exercises, and to reapply the same percentage allocation of costs between the different classes of Code Participant that had resulted from application of the reflective of involvement principle. An alternative way for NEMMCO to exercise such discretion would be to give weight to the status quo, on the basis that any move away from the status quo is likely to incur administrative and/or incidence-related costs that could otherwise be avoided.

In Figure 2.1, the above process is characterised as representing Z% of NEMMCO's total costs.

The focus of the remainder of this paper is on presenting the principles and practice of an economically efficient fee structure. In the simplest of terms, however, an efficient Participant fee structure will be that which causes (either directly or indirectly) the least distortion to final consumption decisions in the electricity market.

3. ECONOMICS OF ALTERNATIVE FEE STRUCTURES

This section examines the issues associated with determining Participant fees that maximise economic efficiency consistent with the Code interpretation adopted by NEMMCO. The following sub-sections:

- define economic efficiency and related concepts at the level of principle;
- apply these concepts to participant fees in the NEM; and
- summarise our conclusions.

It is worth noting at the outset that NEMMCO's fees (around $70m including establishment costs) constitute only a very small proportion of the total costs of delivered energy in the NEM - around $15bn. It is therefore a reasonable *a priori* assumption that there will be relatively little impact on the economic decisions of Code Participants or (ultimately) end customers as a result of the imposition of these fees. Consequently, discussion of the efficiency compromising impact of NEMMCO's fees on the economic decisions of Code Participants is in terms of the 'direction' or 'type' of any potential impact, rather than its magnitude. The presentation of these issues in qualitative terms should not generally be taken to imply that we consider such impacts to be material.

3.1. Economic Efficiency

Economic efficiency is achieved if the allocation of resources in an economy is such that an alternative allocation does not exist that makes one person (or group of persons) better off without making another person (or group of persons) worse off. A change in resource allocation that makes some people better off without making any worse off is known as a 'Pareto gain'.

Economic efficiency requires that services are always produced using the least cost method of production and that each final customer only consumes a service if the value they derive is more than the minimum social cost[3] of providing it. If this were not the case it would always be possible to achieve a Pareto gain by not producing the service since the cost of providing it is greater than the value of the service to the consumer. The concept of economic efficiency cannot be used to analyse issues of fairness or equity – such as the appropriate distribution of wealth.

Economic efficiency is often broken down into three sub-categories of efficiency, namely:

[3] The term 'social cost' refers to the total cost to society including external costs (eg pollution) that are not taken into account by private producers. Social cost is meant to distinguish from 'private cost' which does not include these external costs.

- allocative efficiency - is achieved when production and consumption of services can not be re-allocated amongst members of society such that there is a Pareto gain.
- productive efficiency - is achieved when each service is produced minimising the cost of production; and
- dynamic efficiency - requires that both productive and allocative efficiency are satisfied[4] over time.

It is a matter of judgement whether making the above distinctions between different types of economic efficiency in this context has sufficient value to outweigh any potential for complicating the analysis beyond that which has value for NEMMCO's fee determination. In this report we prefer simply to refer to 'economic efficiency' as encompassing all three of the above dimensions. However, we do make use of the above distinctions where it is necessary to interpret submissions that apply these distinctions.

Consistent with the above discussion, economic efficiency must ultimately be defined in terms of the satisfaction of the desires of final consumers. The production decisions of suppliers are only relevant to the extent that they limit or distort the consumption decisions of final customers. As noted by Dr FitzGerald in relation to the dispute over NEMMCO's 2000 fee determination:

> *"From an economic perspective, the over-arching goal is maximizing economic efficiency, i.e. greatest net benefit to the community from the resources used. This requires a focus on the impact of possible fee structures on the end-use of electricity."*[5]

3.2. Administration and Compliance Costs

Administration and compliance costs are an important consideration in terms of defining economically efficient outcomes. In the context of a Participant fee determination, 'administration costs' refer to the costs NEMMCO will incur in enforcing a particular fee determination while 'compliance costs' refer to the costs Code Participants will incur in ensuring compliance with that fee determination. Administration and compliance costs impose both direct costs and indirect costs due to the fact that higher NEMMCO administration costs imply higher fees with resulting efficiency costs in terms of distortions to Code Participant/end user behaviour.

If administration and compliance costs are significant relative to other potential efficiency costs then it may be economically efficient to adopt the fee structure with the lowest administration and compliance costs.

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[4] In other words, that the 'net market benefit' is maximised.

[5] Dr Vince FitzGerald, *Economic Assessment, NEMMCO Participant Fee Determination*, 31 March 2000, A report to Gilbert and Tobin, 20 September 2002, page 2

3.3. Marginal Cost Pricing

In a market economy, economic efficiency requires that *prices* reflect the social marginal cost of production. This provides individual customers the incentive to consume that service only if they value it more than the cost of purchasing it – the basic requirement of economic efficiency. *Incremental* cost[6] is the additional cost incurred as a result of producing one more unit of output and is calculated without reference to any costs that are fixed[7] over the relevant production time frame. Dr FitzGerald makes this point in relation to the dispute over NEMMCO's 2000 fee determination:

> *"This efficient outcome will occur if the price of electricity that is set in the market is equal to the marginal cost to the community of producing (and delivering) the last unit of electricity. The reason for this is as follows. At a lower price, users will buy more, but this will not be allocatively efficient because the resource cost of producing and delivering the last part of the electricity used exceeds the value that users place on it. At a higher price, the opposite will occur: the value that users place on the last part of their purchase of electricity will exceed the resource cost of producing it; users would like to purchase more, but are denied that opportunity."*[8]

A distinction can be made between short run and long run marginal cost. In the short run a greater proportion of production resources are likely to be 'fixed' and the associated costs unable to be avoided simply by reducing production, eg, overheads. Similarly, in the short run it may not be possible to increase output beyond existing capacity in which case the short run marginal cost (SRMC) of extra output is equal to the value that customers would place on that output if it were available, ie, the short run cost of not serving demand. In the long run, however, all future resources can be re-allocated to alternative uses and there are no fixed costs. At a given point in time, SRMC can be much lower or much higher than long run marginal cost (LRMC), depending on the extent of spare / sparse production capacity.

Other things equal, economic efficiency is maximised if prices always reflect social SRMC. This is because SRMC is, by definition, the cost of production at the time a consumption decision is being made. SRMC pricing, however, may not always be possible due, for example, to difficulties in estimating SRMC, transactions cost in implementing SRMC pricing and the existence of unexhausted long run economies of scale in production, ie, the existence of natural monopolies where SRMC will never recover the total cost of providing the service.

In a competitive market, competition tends to drive prices towards the short run marginal *private* cost of production. However, this will only provide efficient incentives for

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6 The practical application of the theoretical concept of marginal cost is generally known as incremental cost. These terms are used interchangeably in this report.

7 A fixed cost is a cost that does not vary as a result of a marginal increase in output.

8 *Ibid*, p13

consumption decisions if marginal *private* cost is equal to marginal *social* cost. This requires that producers face all the marginal social costs of their actions, ie, that there are no 'external' costs/benefits that the producers impose/provide without paying/receiving commensurate payment. For example, if pollution is a byproduct of a particular service then producers of the service must face the marginal costs of that pollution if competition amongst them is to set prices equal to marginal social costs.

In the context of NEMMCO's fees, the rationale for short run marginal cost pricing can be demonstrated by way of example. Imagine a private entrepreneur considering whether to invest in new generation plant. Any such investment will cause NEMMCO to incur costs associated with testing the impact on the stability and reliability of the electricity system. Economic efficiency requires that such an investment only take place if its benefits are greater than the social costs associated with the investment. Since the social costs of the investment include the short run marginal (testing) costs consequently incurred by NEMMCO, the private entrepreneur must face those costs in order to have the incentive to make a socially efficient investment decision.[9] For example, if testing costs incurred by NEMMCO were not charged for it is possible that the entrepreneur would build generation plant even though the social benefits of that plant did not exceed the social costs (including costs consequently incurred by NEMMCO) at the time of investment.

3.4. Marginal Cost Pricing and Cost Recovery with Economies of Scale

Pricing at SRMC may not produce sufficient revenues to recover all costs if there are significant unexhausted economies of scale, ie, marginal cost is below average cost at the levels of output demanded in the long run. Industries exhibiting this cost structure are referred to as 'natural monopolies'. Where this is the case, then it is inevitable that fees on at least some activities must rise above their SRMC – thereby creating an incentive to engage in less of that activity than is socially efficient. Consequently, economic efficiency requires that additional fees above marginal cost be levied upon activities where there is little or no scope to respond to such distorting price signals. Under these circumstances it can be efficient to have multi-part tariffs with activities that are sensitive to price being charged at short run marginal cost and less price sensitive activities being charged above short run marginal cost.

An example of this situation with many parallels for NEMMCO's Participant fees is found in the pricing of electricity distribution businesses. The costs of providing distribution infrastructure (eg, poles and wires) is high but the short run marginal cost of delivering electricity over that infrastructure is close to zero providing that the probability of a network constraint (and associated lost load) developing is also close to zero. In this situation, recovering the entire infrastructure costs from a kWh charge may create economic inefficiency since the marginal prices faced by customers per kWh may give rise to an

[9] This implicitly assumes that the investor is able to capture no more and no less than the net benefits of the investment. If this is not the case (for example there are additional external benefits from the investment accruing to third parties) then a 'second best' solution requires that investment to be subsidised in some fashion.

inefficient incentive to consume too little delivered energy.[10] This in turn may cause customers to consume less delivered electricity than they would if they were facing the true social cost of that delivered electricity, eg, they may decide not to install air conditioning or to run it only on the hottest days, etc.

Faced with this potential for final customers to reduce (inefficiently) their consumption of delivered electricity, it is arguable that a more efficient fee structure for electricity distributors is a 'two part tariff' – with some revenue being collected from a connection charge that is invariant to the delivered kWhs consumed. The advantage of such a tariff structure is that end customers are very unlikely to respond to such a charge by disconnecting from the electricity grid. Dr FitzGerald arrives at a similar conclusion:

> *"It is worth making an important observation here about constraints which make unavailable to NEMMCO some pricing structures that would be very attractive in terms of allocative efficiency. Since achieving that involves minimising distortions to the pricing of electricity to end-users, pricing structures which directly flow into the pricing of a kilowatt hour of electricity used are to be avoided. A much less distorting scheme would be to ensure that the cost passed on related to connection rather than usage, since the former is known to be much less price sensitive than the latter.*
>
> *An ideal channel (in some sense) for achieving this would be to pass on the costs of running the market through Distributors (DNSPs), who could readily pass these costs on to users (via the Retailers) in the relevant least distorting form."*[11]

3.5. Pricing in the Presence of Imperfections

The presumption that short run marginal cost pricing of a particular service is economically efficient only holds if all other associated prices are also set equal to short run marginal cost. Where this 'first best' solution is not the case then it may be 'second best' to set the price of a service that can be controlled above/below short run marginal cost in order to counteract distortions arising other related prices. However, pricing rules under the 'theory of second best' quickly become very complicated, and sensitive to a number of assumptions.

For example, if the delivered price of gas was set above short run marginal cost due to market power in the gas industry then it may be efficient also to set the delivered price of electricity above short run marginal cost. This would have the advantage of counteracting the uneconomic incentive for consumers to use electricity instead of gas created by market power in the gas industry. On the other hand, it may be economically efficient to set the price of electricity below short run marginal cost, in order undermine market power in the gas industry and so to counteract the associated uneconomic incentive to reduce energy

[10] Whether or not this is actually the case is a complex issue, discussed in more detail in section 4.2.1 below.

[11] *Ibid*, p.20

consumption. It is not possible to decide which, if any, of these options is the economically efficient one without undertaking complex empirical analysis of demand and supply elasticities.

For this reason it is standard practice amongst economists to carry out economic efficiency analysis 'as if' all other prices reflected short run marginal cost unless the results of a 'second best' analysis suggest clear and unambiguous policy. Dr FitzGerald addresses these issues:

> *"While it is true that, in reality, virtually all markets and prices are affected by a myriad of distortions, it is impossible to take into account all such distortions and they may, more or less, offset each other anyway. Therefore a reasonable starting point for analysis is one where it is assumed that price is equal to marginal cost…"*[12]

[12] Dr Vince FitzGerald, *Critique of the Report by Dr Reinhard Pauls,* A report to Gilbert and Tobin, 25 October 2002, page 2

4. APPLICATION TO NEMMCO AND NECA COSTS

This section applies the concepts developed in the previous section so as to examine the efficiency properties of various Participant fee structures.

Section 2 above established that, subject to avoiding excessive administration and compliance costs, it is efficient for NEMMCO:

- to identify the discretionary services provided to individual Code Participants that cause NEMMCO/NECA to incur costs that they otherwise would not incur and to set a fee for those services in line with the incremental costs incurred by NEMMCO; and
- to recover the remainder of NEMMCO's costs in the form of Participant fees on activities that are least likely to be affected by the imposition of those charges – noting that the 'reflective of involvement' criterion may itself limit the range of activities that are eligible for the imposition of fees.

Since all economic efficiency analysis must ultimately relate to the final consumption decisions of end customers, the second of the above objectives can be achieved in at least two ways:

- by ensuring the delay of pass through to end customers of costs beyond those recovered through incremental cost pricing of discretionary services; and/or
- by ensuring costs beyond those recovered through discretionary services pricing are passed through in the form of charges that end customers have limited capacity to respond to by reducing consumption.

Prior to analysing the properties of particular fee structures it is important to ascertain what the potential magnitude of efficiency costs resulting from NEMMCO fees are likely to be. This information is necessary in order to appraise what level of administration and compliance costs it is appropriate to incur in the pursuit of otherwise efficient fee structures.

4.1. Potential Magnitude of Efficiency Costs

As explained below, in our opinion the annual efficiency cost of NEMMCO fees is likely to be less than $160,000 per annum.

4.1.1. Magnitude of efficiency costs of MWh charges

A baseline estimate of the efficiency costs of NEMMCO's fees can be calculated under the assumption that 100 percent of NEMMCO's fees are passed through to end customers in the form of higher MWh charges. The extent of the economic inefficiency created by pass through of NEMMCO fees in the form of higher MWh prices for end customers will depend

on the sensitivity of final customers' energy consumption to price increases. The more likely final customers are to respond to higher prices by reducing consumption the greater the inefficiency associated with NEMMCO's fees.

Available evidence suggests that consumption of delivered electric energy is not particularly sensitive to its price. Demand responsiveness is measured in terms of 'elasticity' which is the percentage change in demand relative to a 1 per cent change in price. Hence, an elasticity coefficient of -0.1 means that a 10 per cent increase in price causes a 1 per cent decrease in demand. Demand is generally said to be 'inelastic' (or unresponsive to price) whenever the absolute elasticity coefficient is less than one. When it is greater than one however, demand is generally deemed to be 'elastic'. There is a range of empirical estimates in the literature for own price elasticities of electricity demand.[13] These include the following estimates of short run (a year or so) impacts of price changes:

- for residential customers somewhere between –0.15 and –0.6;
- for industrial customers somewhere between –0.15 and –1.0;

The literature indicates that long-term estimates[14] of the price elasticity of demand are generally double these short-run estimates.[15]

The more conservative estimates contained in these studies are consistent with the estimates recommended and used by the National Institute of Economic and Industry Research (NIEIR) for forecasting electricity demand in the NEM, undertaken for NEMMCO.[16] NIEIR suggest that reasonable estimates of the long run (own) price elasticity of demand for electricity are:

- -0.25 for residential customers;
- -0.35 for commercial customers; and
- -0.38 for industrial customers.

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[13] See for example: Garcia-Cerruti, LM, *Estimating Elasticities of Residential Energy Demand from Panel Country Data Using Dynamic Random Variables Models with Heteroscedastic and Correlated Error Terms*, Resource and Energy Economics, 22, 355-366 (2000); Silk, Julian I and Joutz Frederick, L *Short and Long-Run Elasticities in US Residential Electricity Demand: A Co-Integration Approach*, Energy Economics, 19(4), 493-513 (1997); Elkhafifm Mahoud AT, *Estimating Disaggregated Price Elasticities in Industrial Energy Demand*, The Energy Journal 13(4), 209-217 (1992); and Filippini, M, *Swiss Residential Demand for Electricity by Time of Use: an Application of the Almost Ideal Demand System*, The Energy Journal, 16, 1-13 (1995).

[14] Long term estimates generally imply demand responses over a 10-15 year period.

[15] See, for example, Silk and Joutz, *Ibid*

[16] See NIEIR, 1999, *Factors Affecting Electricity Demand in the National Electricity Market 1999*-2009, A report for NEMMCO, February, p16-18. Also, NIEIR, 2000, *Projections of independent power production, impacts of greenhouse policies and estimates of electricity price elasticities*, A report prepared for NEMMCO, January,

For demand overall in the NEM, NIEIR suggests that the price elasticity is likely to be somewhere between –0.2 and –0.5. We note that these estimates are all measured with respect to the *final* electricity price, faced by the end-user.

Submissions on the efficiency losses associated with MWh based fees have varied in their estimates. Dr Pauls has estimated that efficiency costs are in the order of 0.25 percent of the total revenue raised by those fees.

> *"These simple calculations prove clearly that the expected deadweight losses resulting from the recovery of NEMMCO's revenue requirements by means of a uniform variable fee (as was applied under the 1st Fee Structure) can in fact amount to no more than a tiny fraction of the losses alleged by LE. Deadweight losses represent approximately 0.25% of the revenue requirement that is to be collected through variable fees. This result is much more in line with what one would expect, given a price increase of less than one half of a percent and a price elasticity within a perfectly ordinary range. In the context of a total NEM market value of approximately $15 billion at retail level and a revenue requirement of $69.7 million, a deadweight loss of approximately $161,000 is utterly insignificant."*[17]

Dr Pauls bases this estimate of efficiency costs on an assumption of an own price demand elasticity of -1. This means that a one percent increase in price is estimated to result in a 1 percent reduction in demand. Dr Pauls also notes that a lower price elasticity of demand may be appropriate. Using an estimate of –0.35 Dr Pauls derives estimates that efficiency costs are in the order of 0.09 per cent of the revenue raised by those fees.

> *"… if one assumes a long-run price elasticity of –0.35, as suggested to NEMMCO by the National Institute for Economic and Industry Research*[18]*, estimated deadweight losses for the entire NEM will be reduced to approximately $56,000 (everything else being equal)."*[19]

Dr FitzGerald agrees that Dr Pauls' methodology is correct (or approximately so) if there are no pre-existing distortions in the delivered price of electricity. However, Dr FitzGerald argues that there are pre-existing distortions and that consideration of these distortions results in much higher estimates of the cost of economic inefficiency.

> *"Dr Pauls' formula for calculating the deadweight loss from a uniform variable fee, while correct (or approximately so) in some circumstances, is not correct in the circumstances of the NEM. In particular, his very small estimates for deadweight loss from a uniform variable fee are due to his implicit assumption that, in the absence of such a fee, the retail*

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[17] Dr Reinhard Pauls, *NGF Dispute with NEMMCO on Participant Fees Determination Report to the Second Group*, August 2002, p 16

[18] NIEIR report, p.26. An elasticity of –0.35 means that consumers respond to a price increase of 1.0% with a demand reduction of 0.35%.

[19] Dr Reinhard Pauls, *op cit*, p 16

> *price of electricity would be equal to the marginal cost of supplying electricity. In the absence of this fee, Dr Pauls implicitly assumes that the deadweight loss, from any other cause, in the retail market for electricity would be zero. He thus compares the deadweight loss from the uniform variable fee against a benchmark of zero deadweight loss."*[20]

Dr FitzGerald essentially argues that network service providers already charge significantly above SRMC for delivery of energy and that this causes any additional distortions created by NEMMCO fees to have a significantly greater cost than they would otherwise have. In comparison to Dr Pauls' estimate of $56,000 to $161,00 of efficiency loss Dr FitzGerald estimates potential efficiency losses of up to $34.6m.[21]

Dr FitzGerald's analysis falls under the category described above as 'second best'. We agree with Dr FitzGerald's theoretical position that, if other distortions already exist in related prices (such as for electricity distribution), then this will impact on the efficiency costs of adding further distortions associated with NEMMCO fees. However, we do not believe that the factual basis for the assumption that network service providers are currently charging significantly above SRMC has been established.

The definition of SRMC for electricity distribution is a very complex issue with a number of competing considerations. When a distribution network is unconstrained, which is most of the time, the SRMC of delivering energy on the network is indeed likely to be very low (close to zero). However, when the network is constrained the SRMC of using the network is equal to the value of lost load (VOLL), ie, the willingness of customers to pay for load they would otherwise lose.

Economic efficiency requires that, in times of (potential) system constraint, energy distribution prices per kW be set at (the probability of) VOLL, since this would ensure that available capacity was allocated to end customers with the highest valuation of that capacity. However, this would require that end customers have half hour-by-half kW hour metering, that distributors constantly calculate and signal to customers the probability of lost load in each area of their network, and that customers are able to respond to these signals.

In reality, the vast majority of end customers are only metered on the basis of KWh and only on a quarterly basis. It is likely that the capital and operating expenses incurred in installing and operating the necessary metering equipment to run a 'perfect' SRMC pricing regime would be prohibitively expensive, ie, would outweigh any potential efficiency benefits. Given these technological and transaction cost constraints, it is arguable that the most efficient form of pricing for electricity distributors is to set energy distribution prices equal to long run marginal costs of capacity enhancement, using KWhs as a proxy for maximum

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[20] Dr Vince FitzGerald, *Economic Assessment, NEMMCO Participant Fee Determination, 31 March 2000* A report to Gilbert and Tobin, 20 September 2002, page 32,

[21] *Ibid*, p. 38

KW consumed. In this case, it is inappropriate to assume that distribution charges set on the basis of KWhs create a pre-existing distortion that multiplies the efficiency cost of NEMMCO fees. Rather, it is appropriate to view such distribution charges as optimal given technological constraints.

In any event, there are a number of other potential second best considerations that could be brought to bear on an analysis of efficient participant fees. For example, it is possible that pre-existing distortions exist in the form of:

- market power amongst generators resulting in prices higher than cost;
- zonal (state-wide) averaging of prices in the NEM resulting in some customer areas paying above cost and some below cost prices for generation;
- generators not internalising the full cost of pollution, eg, local pollution and/or greenhouse pollution; and
- distortions created by Commonwealth and state based taxes as they apply to generation and transmission/distribution.

Attempting to take account of these myriad factors in performing a 'second best' analysis of efficient pricing would quickly become an unworkably complex process. Amongst other things it would require NEMMCO to come to an opinion on:

- the magnitude of the impact on market prices of any generator market power;
- the zonal pricing on the consumption patterns of final customers;
- the social cost of greenhouse gas emissions; and
- the complicated impact of the tax system on energy prices.

It is clear that the cost of NEMMCO undertaking such analysis could quickly outweigh any potential benefits that would derive in the form of NEMMCO implementing a more efficient fee structure. In the absence of a strong case for doing otherwise, we believe that acting on the assumption that no second best considerations exist is appropriate.

4.1.2. Efficiency costs of MW charges on generators

Dr Pauls has argued that while there are very low efficiency costs associated with a MWh charge there are very large efficiency costs associated with a MW charge levied on generators.

> *Dr FitzGerald and I are in full agreement that in the long run, the full cost of any fixed fee will in fact be passed through, so that there is no prospect of a fixed fee having any sustainably different impact on final prices than that which results from a fully-variable fee. Given the likely negative effects of fixed fees on dynamic (investment) efficiency in*

> *the industry, this led me to argue that the fully variable fee was to be preferred on grounds of both simplicity and overall efficiency (taking account of allocative, productive, and dynamic efficiency, all of which were explicitly addressed in my analysis, notwithstanding Dr FitzGerald's assertion to the contrary.*[22]

We believe there is a significant element of internal contradiction in the views expressed by Dr Pauls above. If it were true that "*there is no prospect of a fixed fee having any sustainably different impact on final prices than that which results from a fully-variable fee*" then, in our view, it cannot simultaneously be true that dynamic efficiency will be significantly different under the two fee structures. Dynamic efficiency is simply the maintenance of allocative efficiency over time. If the long run prices faced by end customers are substantially the same under each fee structure then the efficiency impacts of each fee structure will also be substantially the same – it is only through the distortion of final consumption that economic efficiency costs are imposed.

4.1.3. Summary

In summary, we believe that the best available estimates of the magnitude of efficiency costs associated with NEMMCO's fees are likely to be in the order of $56,000 and with a maximum value of $160,000 per annum. We are unconvinced by the analysis of both Dr Pauls and Dr FitzGerald that the efficiency impacts of MW versus MWh fees will be significantly different.

The following sections go on to provide a detailed analysis of the channels for economic efficiency impacts of various alternative fee structures. However, given the small potential magnitude of these impacts, it is important to keep in mind that the administration and compliance costs associated with avoiding some economic efficiency costs may not be warranted.

4.2. NEMMCO's First Fee Structure

NEMMCO's first fee structure recovered 100 per cent of costs from an annual per MWh charge on market customers (retailers). Absent any regulatory constraints on Market Customers, competition can be expected to have caused NEMMCO fees to be immediately passed on to end customers in the form of higher energy charges.

4.3. Current NEMMCO Fee Structure

NEMMCO's second fee structure reduced (but did not eliminate) the reliance on annual MWh charges and introduced two new charges, namely:

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[22] Dr Reinhard Pauls, *NGF Dispute with NEMMCO on Participant Fees Determination Report to the Second Group*, October 2002, p 16

- an historic installed generation capacity charge; and
- an historic customer load charge levied on market customers.

4.3.1. Historic ('fixed') installed generation capacity based fees

The current NEMMCO fee structure uses installed generation capacity at the beginning of a three-year period as the relevant 'activity' on which fees are based. This fee structure has the advantage that it is impossible for existing owners of installed capacity on that date to adjust behaviour in response to the fee as it applies in the three-year determination. In other words, if a generator had installed capacity on the relevant date no future activity by that generator over the next three years can result in the generator avoiding those fees.

Consequently, generators are forced to ignore the fees as 'sunk costs' and will determine their bidding strategies over the period of the fee determination in precisely the same way as they would have, had there been no fees on installed capacity. This in turn will mean that market prices will be unaffected by installed capacity fees with the result that end customers' prices are unaffected. This is precisely the desired result from an economic efficiency perspective, with no reason for end customers to alter their consumption patterns from economically efficient levels.

Over a number of future fee determinations, however, these fees will be passed through to final customers, thereby raising the potential for economically inefficient responses. This is because if an expectation exists that the fee structure will be maintained for future determinations then NEMMCO fees will also depend on *future* installed capacity – which is under some control of generators. Existing generation capacity is largely a sunk cost with little likelihood that generators would uninstall that capacity due to higher expected future running costs associated with NEMMCO fees. However, by definition new generation capacity is not sunk until it has been created. Consequently, we would expect such a fee structure to have the following long run impacts on future investments in generation:

1. Firms considering installing new generation capacity would have an incentive to delay investment as the costs of generation are increased and so they will require a higher level of expected revenue in order to entice new investment. This incentive would apply in general and would increase in periods close to the beginning of each Participant fee determination. Where any delay in investment actually occurred this would increase market electricity prices relative to the counterfactual;
2. Firms considering installing new generation would have a reduced incentive to invest in low capital cost/high fuel cost generation (ie, peaking generation) relative to high capital cost/low fuel cost generation (ie, base load generation). This is because the lower the capital cost per MW the greater the impact of a MW charge on the return on capital. Were this to cause a change in the mix of generation over time (relative to the counterfactual) the impact would tend to reduce off peak market electricity prices and increase peak prices.

The first point above appears to be agreed by parties on both sides of the dispute in relation to the 2000 Participant fee determination:

> *"In the long run the existence of NEMMCO fixed fees will probably delay somewhat the timing of new entry into the generating market in response to persistent shortages of capacity, and somewhat raise the price at which new entrants are prepared to enter the market. When entry does occur in this long run then it could fairly be said that NEMMCO's fixed fees will have been recovered in higher prices. However, there will be no tilt in the competitive balance between high load and low load plant."*[23] (Dr FitzGerald)

> *"In the long run, fixed fees are passed through to prices by means of a process of exit (that is, by driving out productive capacity that would otherwise have been sustainable). I point out that in an industry where producers have widely-varying cost structures (as is the case in electricity generation) this process of fixed-fee-induced exit would be expected, in theory, to increase market volatility and reduce security of supply, by removing low-load-factor plant at the margin of the market. Hence dynamic efficiency is likely to be compromised in a number of ways by the use of a fixed fee to capture generators' profits."* (Dr Pauls)[24]

Dr FitzGerald's quote is consistent with the analysis in our first point above. However, we are unsure how Dr FitzGerald has arrived at his related conclusion that there 'will be no tilt in the competitive balance between high load and low load plant'.[25] On the other hand, we do not consider this to be a material issue in analysing the efficiency properties of NEMMCO's installed capacity fees as discussed below.

The quote from Dr Pauls is consistent with the analysis in both our points above, however, Dr Pauls draws conclusions that we would not draw. Specifically, it does not necessarily follow that a change in the generation mix that leads to higher peak prices in the long run creates greater efficiency loss than an across the board increase in per MWh electricity prices in the short run:

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[23] *Ibid*, p 6

[24] Dr Reinhard Pauls, *NGF Dispute with NEMMCO on Participant Fees Determination Report to the Second Group*, August 2002, p 21

[25] Dr FitzGerald does not provide analysis to substantiate this conclusion in his 21 October report. However, on page 21 of Dr FitzGerald's 20 September 2002 report he states that 'Because, as argued in sub-para 3.6.1(iv) above, Generators cannot in typical circumstances readily pass on NEMMCO's fixed fees in the competitive market for electricity generation, these fees reduce the profitability of Generators essentially dollar for dollar, at least in the short to medium term. However, since these fees are based on MW of historical capacity, the effect on profit/MW is the same for each Generator.' This may explain how Dr FitzGerald has reached his conclusion that installed capacity fees are neutral with respect to peaking/base-load generation. However, this conclusion cannot be drawn from the above analysis. Neutrality between generation type requires that the effect on rate of return (profit/capital costs) be the same rather than the effect on profit/MW be the same. Peaking capacity plant has lower capital costs per MW and, consequently, an equal profit/MW impact results in a larger impact on rate of return (profit/capital costs) for peaking plant than for base load plant.

- first, the present value of any delay in efficiency loss may outweigh any higher efficiency costs that are only borne in the long run. This is especially so given the long run adjustment in generation to installed capacity fees may take many years; and

- second, the extent of any efficiency loss from a change in the generation mix will depend on a number of factors such as the relative elasticity of peak demand for electricity and non-peak demand for electricity. It is possible that if non-peak demand is less responsive to price than peak demand then it may be efficient for there to be change in the generation mix.

Nonetheless, it is possible that adjusting the current MW-based fee on generators to reflect different capital costs per MW for different generation units would have some long run efficiency benefits. However, it is unlikely that the necessary information on capital costs per MW for all types of generation units (eg, small, large, coal, gas, wind, hydro, etc) could be easily or accurately collected. Using 'bands' of MW per unit or 'load factors' as proxies for capital costs per MW would inevitably result in inaccuracies and may even worsen efficiency outcomes rather than improving them. Given the very small potential efficiency costs at stake, it is unlikely that such an approach would be warranted.

There have also been some differences of view in relation to the amount of time that such a delay would involve. Dr Pauls has argued that the time will be much shorter than that assumed by Dr FitzGerald due to the fact that the generation market is not perfectly competitive.

> *"The above argument relies heavily on several assumptions Dr FitzGerald has made regarding the operation of the electricity spot market in the NEM. In certain respects his position appears to rest upon the implicit assumption that a model of perfect competition is applicable, with individual generators powerless to affect the spot price."*[26]

Dr Pauls then goes on to describe the impact of installed capacity fees if generators have market power and attempt to maintain a target rate of return on capital.

A shortcoming in Dr Pauls' analysis is that it implicitly assumes that generators are not profit maximising. To the extent that generators have market power they can be expected to exercise this market power in order to maximise profits irrespective of installed capacity fees. Assuming that generators would increase prices as a result of installed capacity fees is equivalent to assuming that generators only decide to use their market power once additional costs are imposed on them. A more plausible assumption is that generators always use their market power to increase price to the extent possible. Since the

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[26] Dr Reinhard Pauls, *NGF Dispute with NEMMCO on Participant Fees Determination Supplementary Report to the Second Group*, August 2002, p 17

introduction of installed capacity fees does not increase market power in the short run, it will not increase prices in the short run.

Given these considerations we consider it reasonable to assume that efficiency costs associated with an historic, installed capacity charge will be lower or no higher than the efficiency costs associated with an annual MWh charge. However, in the long run with full adaptation of investment decisions, the economic efficiency properties of this fee structure will share many of the same properties as a fee levied on MWhs generated.

4.3.2. Historic ('fixed') customer load based fees

NEMMCO also levies a fee on Market Customers (retailers) based on the annual load served by that Market Customer in the previous year. This means that each MWh of load served in a given year will, in addition to attracting a NEMMCO fee in that year, also attract a NEMMCO fee in the following year. If Market Customers expect this fee structure to be maintained in the future then one dollar (in present value terms) of NEMMCO fees collected under the historic MWh fee will have an identical impact on expected costs of serving load as one dollar (in present value terms) collected under the current MWh fee structure.

Consequently, prior to the consideration of administration and compliance costs, we consider these fee structures to be near identical in terms of their efficiency consequences. It is possible that collapsing the two MWh fees into a single fee would reduce administration and compliance costs. However, this need not be the case if the transition costs of moving to a single fee structure are greater than any savings in ongoing administration and compliance costs.

4.4. Customer Connection Charges

Subject to administration and compliance cost considerations, there is good reason to believe that a fee structure based on customer connection charges will minimise efficiency costs.

Demand for connection by final customers to the distribution / transmission network is likely to be significantly less sensitive to price than demand for load. For most final customers the costs of disconnecting from the transmission / distribution networks (ie, going without electricity or providing own generation) are so great that their capacity to respond to higher connection charges is severely limited. There is unlikely to be any other potential fee base that is as insensitive to price as final customer connections. This view is shared by Dr FitzGerald:

> *"It is worth making an important observation here about constraints which make unavailable to NEMMCO some pricing structures that would be very attractive in terms of allocative efficiency. Since achieving that involves minimising distortions to the pricing of electricity to end-users, pricing structures which directly flow into the pricing of a kilowatt hour of electricity used are to be avoided. A much less distorting scheme*

would be to ensure that the cost passed on related to connection rather than usage, since the former is known to be much less price sensitive than the latter.

"An ideal channel (in some sense) for achieving this would be to pass on the costs of running the market through Distributors (DNSPs), who could readily pass these costs on to users (via the Retailers) in the relevant least distorting form. The costs would be passed on by the distributors virtually dollar for dollar, because the prices charged by Distributors (who are geographically-based monopolies) are regulated by the State-based regulators.[27] The price of electricity to end-users would not be affected because retailing (in most jurisdictions) is a competitive industry – marginal costs would not be affected, hence neither would prices. However as DNSPs are essentially not involved with NEMMCO, i.e. are not proximate users of its services, it is not easy to see how this could practically be done, quite apart from its inconsistency with clause 2.11.1(b)(3) of the Code. Moreover, contrary to be apparent economic intent of that clause, it would not address at all the issue of NEMMCO's productive efficiency."[28]

We concur with Dr FitzGerald that, in principle, a connection based fee would be the least distorting manner in which to recover NEMMCO's costs. We do not necessarily agree, however, with Dr FitzGerald's assumption that a connection fee levied on distributors will not satisfy NEMMCO's legal obligations set out in the code.

Adopting the framework for Participant fees set out at section 2 of our report, connection-based charges consistent with that framework could be levied for those costs where TNSPs or DNSPs were found to be involved with NEMMCO's outputs, and for the entire unallocated portion of NEMMCO's costs. Important to this conclusion is that the opportunity to levy connection-based fees is not limited to distribution businesses. A connection-based fee can also be levied directly on retailers or transmission businesses.

Setting aside administration and compliance costs, it is likely that levying fees directly on retailers will be economically superior to levying them further up the 'supply chain'. This is because there is a possibility, not countenanced by Dr FitzGerald, that the businesses paying the connection fee will pass on that fee to final customers in some other than a connection-based charge, eg, as a higher MWh charge. For example, this may be due to the existence of regulatory restrictions on the form of pass through for those businesses.

Levying connection fees on retailers would minimise the number of regulatory frameworks through which NEMMCO fees would have to pass before reaching final customers, thereby reducing the risk that it gets distorted by regulatory limitations[29] on pass through. In other

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[27] Specifically, the weighted average price of a basket of distributors' prices is regulated, with the distributors free to set individual prices, provide the average is maintained.

[28] Dr Vince FitzGerald, *Economic Assessment NEMMCO Participant Fee Determination, 31 March 2000*, A report to Gilbert and Tobin, 20 September 2002, page 20

[29] Such restrictions might apply, for example, to the extent of any rebalancing between the fixed and variable components of tariffs.

words, a fee levied on a distribution business will have to be passed through in its original form first to retailers and then by retailers to final customers. In comparison, a fee levied directly on retailers would only have to be passed through directly to final customers.

Once a fee reaches retailers (either directly or through distributors), whether or not they have an incentive to do this will depend, amongst other things, on the form of regulation in each jurisdiction. However, as noted by Dr FitzGerald, competition amongst retailers should cause final price structures to reflect the structure of their costs. Thus, if NEMMCO charges retailers a customer connection charge competition will encourage retailers to pass this cost on to final customers as a connection charge.

Implementing such a fee structure would require NEMMCO to gather information on the number of connections Market Customers[30] serve and to set a per connection fee that recovered the necessary amount of NEMMCO and NECA's costs. However, it is possible that equity considerations may militate against charging the same connection fee regardless of the 'size' of the customer served by the connection. While this is not strictly an economic efficiency consideration it may nonetheless be relevant. If there were a desire to differentiate between customer connections according to the size of the customer, then economic efficiency will be maximised if a metric for 'size' is used that is difficult for end use customers to change. Possible metrics include:

- voltage at which connection occurs (high, medium or low);
- connection at a DNSP versus connection at a TNSP; or
- annual energy usage (high, medium or low).

Introducing any such 'size' metric will create an incentive for customers who are near 'the boundary' of one definition to change their behaviour. Differentiating between customer connection sizes will also create administration costs since NEMMCO would have to gather data on the number of customer connections a retailer serves under each size category. However, any associated efficiency costs must be judged against the perceived benefits of greater fairness in the recovery of NEMMCO's costs.

4.5. Other Considerations

4.5.1. Regulatory pass through of fees

A number of submissions to the review have argued that it is desirable that the pass through of NEMMCO's fees to end customers not be constrained by regulatory controls on prices.

[30] As some large businesses can provide their own retailing function a fee levied on 'Market Customers' rather than 'retailers' will be appropriate.

Both the National Retailers Forum and the National Generators Forum have made this argument.

> *"If fixed fees are not to be used, then an acceptable pass through mechanism is imperative. The mechanism simply must deal effectively with existing market and regulatory constraints, such as contracts and regulatory restrictions on pricing to consumers."*[31]

> "*The NGF is also intensely aware of the difficulty caused for pool customers who are retailers, by the potential for regulatory overlap to constrain their ability to pass through costs to the end consumers to which they are directed. NEMMCO may be aware that the NGF has developed a vision statement for the key issues in market design, and this vision work specifically addresses regulatory overlap. The NGF is well aware that price caps by jurisdictional regulators can thwart the economic intent of the wholesale market design approved by the ACCC. However, it is our view that NEMMCO has no jurisdiction to take into account effects beyond the wholesale market customer in the supply chain, and may fail in its duty to target economic efficiency should it attempt to do so. In short, the NGF will be fully supportive of actions to support the passthrough of economic costs by retailers, but will not support distortions to the wholesale market arrangements to compensate for any barriers created by jurisdictional regulation."*[32]

While it may be appropriate to facilitate pass through of NEMMCO's fees from an equity perspective, this principle does not generally apply from an economic efficiency perspective. As discussed above, economic efficiency is maximised if the impact on final customer demand is minimised. The most obvious way to achieve this is to set fees in a manner that prevents or delays those fees being passed on to end customers. We have already argued that NEMMCO's current fee structure may achieve this to the extent that market constraints cause fees on historically installed (and sunk) generation capacity to be difficult for generators to pass on (discussed further below).

It is also possible that imposing fees on other Code Participants could achieve the same effect if regulatory constraints mean that those businesses could not immediately pass on NEMMCO fees to their customers. This may well be the case for regulated retail, distribution and transmission businesses where there are no provisions in their regulatory arrangements for the pass through of changes in NEMMCO fees. If this is the case then those businesses will generally have to wait until the end of the next review period for these costs to be passed through to final customers.

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31 Charles River Associates, *Determination of Participants Fees: NRF's Submission*, 25 October 2002, p 13

32 Code consultation – structure of participant fees from July 2003 national generators forum submission.

4.5.2. Productive efficiency

There has been some debate amongst submissions and economic experts retained in relation to the 2000 Participant fee dispute concerning the productive efficiency impacts of various fee structures. In theory, it is possible that the level of fees paid by individual participants will influence the amount of scrutiny they undertake of NEMMCO and NECA's productive efficiency. It is arguable that spreading fees widely across participants will maximise the scrutiny of NEMMCO's costs as all participants will have an interest in minimizing those costs. On the other hand, the opposite argument is also plausible in that such an approach spreads costs more thinly resulting in a 'free rider' problem – with no single participant or class of participants benefiting enough from a cost reduction to make scrutiny of NEMMCO's costs worthwhile.

We concur with the agreed position of economic experts to the dispute over the 2000 Participant determination when discussing the efficiency differences arising from potential scrutiny of NEMMCO's costs that:

> *"The First and Second fee structures do not differ very much in their openness to 'free riding'."*[33]

4.5.3. Full retail contestability (FRC) fees

Ergon Energy, ENERGEX, the National Retailers' Forum (NRF), INCITEC and the National Generators' Forum (NGF) made submissions to NEMMCO on the recovery of FRC costs. Ergon Energy argue[34]:

> *Ergon Energy's submission focuses on the allocation of the FRC component of Participant fees in accordance with the requirements of clause 2.11.1 of the Code. For the reasons outlined in the submission, Ergon Energy's proposed cost allocation methodology is based upon the most appropriate costs driver, namely declared customer numbers, and reflects the functionality and utilisation of the benefits of the relevant FRC systems. In summary, the appropriate allocation is one in which:*
>
> - *Each Market Customer should pay a proportion of the Fixed Costs of MSATS based upon that Market Customer's propensity to access the MSATS system, where a Market Customer propensity to access MSATS is determined by the number of declared contestable customers that they have; and*
>
> - *Each Market Customer should pay a proportion of the Variable Costs of MSATS, being the incremental costs incurred by NEMMCO in transferring the NMI of each declared contestable customer for that Market Customer.*

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[33] *NEMMCO Participant Fee Dispute: Report to the Second Group on Economic Expert Conference*, paragraph 13.

[34] Ergon Energy, *Submission on Participant Fee Structure for the Period Commencing 1 July 2003*, 15 October 2002, page 13

The NGF argues[35] that:

> *These costs are presumably largely fixed, but they are clearly not common. Generators have no user-pays linkage to these costs. Consequently, our expectation is that these costs, however amortised, will not fall on generators in any form.*
>
> *NGF would, however, note that the introduction of FRC is a policy issue, decided by governments as an integral part of competition reform. Consequently, we support the view that allocation to FRC-related Pool Customers should only be an interim step. Passthrough to those small end consumers who benefit from FRC is the only appropriate regulatory and economic course.*

ENERGEX put the proposition[36] that:

> *….the delayed introduction (if at all) of FRC in Queensland means that Retailers (for example, ENERGEX) and non-contestable customers in Queensland can derive very little benefit from NEMMCO's expenditure on the Market Settlement and Transfer Systems ("MSATS")….*
>
> *Accordingly, ENERGEX urges NEMMCO to ensure that its "user pays" imperative that is central to principle 3 of clause 2.11.1(b)[37] is considered in the context of the still remaining franchise markets that exist in Queensland (and elsewhere).*

Finally, the NRF recommended[38] that FRC costs should be allocated:

> *…to each retailer in the NEM on the basis of the total MWh.*

Supporting this conclusion, the NRF provided a paper by Charles River Associates that states:

> *The benefits available from NEMMCO's FRC investments include….the value of the implied option to incur additional expenditures to extend contestability only if warranted on the basis of additional information…..*[39]
>
> *NEMMCO's FRC-related costs were incurred so that any customer in the NEM could be contestable. It would be possible to defer recovery of such costs from non-*

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35 Letter from Mr Stephen Orr, National Generators Forum, to Mr Jeff Fraser, NEMMCO, 28 November 2002.

36 Letter from Mr John Young, ENERGEX, to Mr Jeff Fraser, NEMMCO, 16 December 2002.

37 *Principle 3 of clause 2.11.1(b) states "the components of the Participant's fees charged to each Code Participant should be "reflective" of the extent to which the budgeted revenue requirements for NEMMCO and NECA involve that Code Participant"*

38 Letter from Mr Graeme Lees, National Retailers Forum, to Mr Jeff Fraser, NEMMCO, 5 December 2002.

39 Charles River Associates, *Treatment of FRC Fees, Submitted to National Retailers Forum*, 29 November 2002, page 4

> *contestable customers (largely expected to be smaller customers in Queensland), but such deferral should not have the impact of elevating costs for other customers.*[40]

Applying the principles of economic efficiency we concur with Ergon Energy's conclusion that the incremental costs imposed on NEMMCO of customers transferring to a particular retailer should be paid for by that retailer. This is consistent with the principle of discretionary services pricing whereby end customers should pay the SRMC of their decision to transfer between retailers. Nevertheless, we understand the incremental costs to NEMMCO of such transfers are very small, and it may be that the administration costs of levying such a fee outweigh any efficiency benefits arising.

On the other hand, Ergon Energy's and ENERGEX's proposal to recover the fixed costs of FRC in proportion to the number of contestable customers in each jurisdiction cannot be justified on economic efficiency grounds. The apparent basis for this conclusion is that considerations of fairness and/or 'user pays' suggest that this allocation is appropriate since non-contestable customers do not benefit from or use the MSATS capability. The basis for this latter conclusion is not necessarily valid since, as noted in the NRF submission, there may be a substantial 'option value' provided to non-contestable customers from the existence of systems capable of being used to implement FRC in their jurisdiction.

In any case, the question of whether or not non-contestable customers are involved with or benefit from NEMMCO's FRC capability is not fundamentally an economic matter. Rather, applying the framework established at section 2 for taking economic efficiency and other relevant principles into account, NEMMCO must address the following question:

> *Did the discretionary action of the Queensland (or any other) jurisdiction not to implement FRC at this time cause the cost of establishing systems to provide FRC capability throughout the NEM to be less than otherwise would have been the case?*

In the event NEMMCO was (or is able to) avoid FRC establishment (or operating) costs as a consequence of decisions by some Code Participants not as yet to move forward with FRC, then the 'discretionary services pricing' principle identified in section 2 should apply. In other words, if incremental costs have been avoided, economic efficiency suggests that non-contestable customers would not pay the 'FRC capability' or 'FRC operating cost' fee that NEMMCO should otherwise levy on customers for whom (discretionary) decisions have been taken to implement FRC.

On the other hand, if no FRC establishment or operating costs were avoided as a consequence of decisions by some Code Participants not as yet to move forward with FRC, then NEMMCO should decide the appropriate allocation of FRC costs by applying the 'reflective of involvement' principle, as discussed above.

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[40] Charles River Associates, *op cit*, page 9

4.5.4. International experience

In 2000 London Economics[41] provided a summary of international experience in terms of fee structures. In our opinion, this report remains a very helpful summary of the types of fee structures currently levied to recover the costs of system operator and market operator functions in a wide range of electricity markets. Since this information was collated, the arrangements for the recovery of such costs in the United Kingdom (UK) have changed with the introduction of a new Balancing and Settlements Code. The new UK arrangements apply a 'causer pays' principle first, with the remainder of fixed costs being recovered through energy charges, as summarised below.

Market operator costs in the UK are paid on a monthly basis. The costs to be paid are made up of a number of charges, called Funding Shares[42]:

- Main Funding Share - a monthly payment by generators and retailers of the 'proportionate share of aggregate Credited Energy Volumes for that month'[43];
- Supplier Volume Allocation (Consumption) Funding Share - a monthly payment by retailers of the 'proportionate share of aggregate non-half hourly consumption for that month';
- Supplier Volume Allocation (Production) Funding Share - a monthly payment by generators of the 'proportionate share of aggregate Credited Energy Volumes for production Balancing Mechanism Units[44] for that month';
- General Funding Share - a monthly payment by generators and retailers of the 'proportionate share of aggregate of certain Balancing and Settlement Code Company (Elexon) Charges for that month'. The General Funding Share is the total of the Main Funding Share and both SVA Funding Shares; and
- Annual Funding Share - a correction factor term, paid by generators and retailers. Costs not covered by the other Funding Shares are recovered using the Annual Funding Share. If costs are over-recovered, rebates are given using the same Annual Funding Share.

The costs for the system operator are paid on a daily basis. The Balancing Services Use of System charge is allocated to both generators and retailers as a share of the charge in each Settlement Period based on their share of the total metered volume.

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41 London Economics, *Participant Fee Structure, Preliminary Report*, February 2000, Appendix 1

42 Balancing and Settlement Code vol.1, 2001: Section D: BSC Cost Recovery and Participation Charges

43 Balancing and Settlement Code vol.1, 2001: Annex D-1 Funding Shares, Part 1.

44 These are units in excess of 100MW capacity.

5. SUBMISSIONS ON NEMMCO'S DRAFT DETERMINATION

This section documents the principal economic issues raised in response to NEMMCO's Draft Determination and NERA's preliminary report, and provides our assessment of them.

5.1. Potential for Unreasonable Discrimination

An important question raised in submissions related to whether it was appropriate to focus exclusively on the economic efficiency criterion when choosing between fee structures that are to apply to particular classes of Code Participants. In the Draft Determination, NEMMCO selected the fee structure to apply to generators and Market Customers based on the relative economic efficiency properties of those fees. This reflected the view that it was not possible meaningfully to allocate costs down to individual Code Participants based on the involvement principle.

It was argued by Charles River Associates[45] (CRA) on behalf of Snowy Hydro Ltd that a focus on economic efficiency in determining the fee structure to apply to generators was not warranted given:

- the relatively small efficiency costs at stake between different fee structures; and
- the potentially large differential impacts on individual generators of the different fee structures.

CRA notes that there are at least two alternatives to NEMMCO's proposed MW based fee for generators, namely a MWh and a spot market revenue based fee. CRA argues that whilst these all have immaterial differences in economic efficiency they do have significantly different incidences on individual generators. In particular, CRA argues that:

- the adoption of the proposed MW-based fee significantly disadvantages Snowy Hydro relative to a MWh or revenue based fee, with Snowy Hydro paying 500% more under a MW fee than they pay under a MWh based fee and 300% more than compared to a revenue based fee[46]; and
- most other generators are relatively unaffected by the choice of fee base, paying approximately the same under each of the three fee structures analysed.

Consequently, CRA draws the conclusion that a MW based fee unreasonably discriminates against Snowy Hydro. CRA argues that in order to avoid unreasonable discrimination

[45] CRA, Participant Fees 2003, 17 February 2003

[46] Ibid, page 12.

NEMMCO must strike a 'middle path' between the available fee structures in terms of their incidence on generators. CRA' argues that this could be achieved by either:

- a revenue based fee, whose incidence generally sits between a MW and MWh fee; or
- a 50/50 reliance on MW and MWh fees.

5.2. An Appropriate Benchmark for Discrimination

One difficulty with the argument expressed in CRA's submission is that 'discrimination' is being assessed relative to a benchmark that is essentially arbitrary. CRA argues that a MW fee unreasonably discriminates against Snowy Hydro because, relative to a MWh or a revenue fee, Snowy Hydro's absolute costs increase significantly more than any other generator's costs.

On the other hand, some or all of the remaining generators could reasonably argue that, by the same logic, the choice of a MWh or a revenue fee unreasonably discriminates *in favour* of Snowy Hydro (and therefore against other generators[47]) since Snow Hydro's fees fall the most relative to the currently applied MW fee.

This problem arises because there is no agreed benchmark against which the extent of any discrimination can be assessed. Resolution would seem to require the specification of such a benchmark. While economics provides only limited guidance in defining what is or is not discriminatory, one reasonable benchmark for a non-discriminatory fee structure would be the profit of each generator. Profit can be regarded as a non-discriminatory benchmark on the following basis:

- it is proportional to ability to pay;
- it is consistent with the principles enshrined by the income, corporations and good and services tax laws; and
- it would not 'discriminate' against different types of generation technology in the (economic) sense that it would not create a bias towards/away from the adoption of different types of generation plant, eg, high and low utilisation plant.

If CRA's premise that non-discrimination should take precedence over economic efficiency in determining a fee structure for generators were accepted, then the adoption of profit as the benchmark for non-discrimination would significantly aid analysis of this issue. While the information required to implement a profit based fee is not available to NEMMCO, the least discriminatory fee structure could be defined as that most likely to approximate a profit based fee.

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47 As a constant value of fees must be collected.

It is not clear to us that any of the fee structures readily available to NEMMCO will proxy a profit base fee. As described in our preliminary report, a MW based fee will tend to reduce the profitability of low utilisation plant relative to high utilisation plant. Conversely, however, a MWh fee will tend to reduce the profitability of high utilisation plant more than low utilisation plant.

A fee based on spot market revenues may or may not be a better proxy for a profit tax than either of these alternatives. While a revenue based fee appears intuitively more likely to approximate generator profit, this may not be the case given that revenue is only one element of the profit equation (with costs being the other). A revenue-based fee will only be a good proxy for a profit based fee to the extent that costs are always proportional to revenues. Given the capital and fuel cost differences between different generators (and the uncertain behaviour of spot prices) it is not possible to be confident that a revenue based fee is a superior proxy for a profit based fee than either of the two alternative fee structures canvassed.

In this context and from an economic perspective it cannot be ruled out that a combination of the relevant fees as proposed by CRA is less discriminatory than reliance on a MW based fee. Furthermore, in light of the small economic efficiency costs at stake averaging two or more of these metrics would not be expected to have a material efficiency cost.

5.3. Alternative Generator Fee Structures

In addition to the fee structures examined in our preliminary report, other suggested fee structures include:

- number of bids/rebids that each participant makes within a year,
- generation output change parameter calculated as: X/Y where X = Sum over the year of [absolute value (target last dispatch interval - target current dispatch interval)/total dispatch intervals in the year] and where Y is the average output of the unit over all dispatch intervals in a year (including intervals where the unit is not dispatched);
- an annual revenue based fee;
- a quarterly share of spot market revenue fee; and
- a maximum bid capacity based fee.

No rationale was provided for the first two options listed above. A number of submissions proposed revenue based fees as good proxies for profitability or 'entity value'. A quarterly revenue share based fee differs from an annual revenue based fee to the extent that it exposes generators to seasonality in generation and spot prices. Under the proposal by Stanwell Corporation Ltd, a fixed sum would be allocated to generators each quarter in proportion to their share of spot market revenues that quarter. Relative to an annual

revenue based fee, such an approach would benefit those generators that tend to operate disproportionately more in quarters with relatively high value energy sales. A potential advantage of such an approach is that it would guarantee NEMMCO a fixed flow of funds each quarter.

A maximum bid capacity fee would differ from a registered capacity fee in that it would rely on the revelation of maximum annual capacity by generators in the bidding process throughout the year. Such an approach may be administratively advantageous relative to a registered capacity fee to the extent that registered capacity is subject to manipulation by generators in response to NEMMCO's adoption of it as a Participant fee metric. Such manipulation could occur, for example, where a generator refurbishment program raised effective capacity, but where the corresponding change in registered capacity was not communicated to NEMMCO. On the other hand, in periods in which generators are bidding their maximum capacity spot prices are generally very high and it seems unlikely that NEMMCO fees would influence generators' bidding behaviour, thereby encouraging 'true' capacity to be revealed. In the long run, however, registered and maximum bid capacity based fees would have the same impact on the entry decisions of future generators.

5.3.1. Assessment

Economic efficiency requires that the price charged to final consumers of a product be based on the marginal cost to society of producing it. NEMMCO's costs are largely invariant as the consumption of energy increases. Consequently, economic efficiency requires that, to the extent possible, NEMMCO's fees do not result in an increase in the delivered price of energy.

In general, in order to prevent changes in behaviour it is important for a tax to be broadly based. This does not appear to be the case with the first two listed fee alternatives. It is possible that a fee structure based on the number of bids/rebids or generation output change would be subject to behavioural change by generators in an attempt to minimise their liability for fees. For example, a tax on rebidding may prevent some generators from rebidding when it is efficient for them to do so.

In the long run, all of the remaining proposed fee structures will have broadly similar economic efficiency costs. This is because all three fees will eventually be passed on in the form of higher energy prices. The economic efficiency cost of each fee structure is likely to be relatively small (less than $80,000 per annum[48]).

[48] Based on the calculation of the maximum likely efficiency cost of NEMMCO's total fees is around $160,000 per annum with an expected cost considerably lower (in the vicinity of $56,000). Less than 100 percent of fees are recovered from generators leading to a proportionate reduction in the value of efficiency costs at stake in the choice of a metric for levying fees on generators.

When account is taken of short run considerations, however, our view remains that a MW based fee (such as registered capacity or maximum bid capacity) is likely to be the most efficient of the practicable fee structures available to NEMMCO. This is based on the fact that:

- a MW based fee will take longer to be passed onto final customers in the form of higher energy prices;
- a MW based fee costs relatively less to administer and comply with than many alternatives; and
- a MW fee is already in place in the current fee determination and retaining this fee will minimise transaction costs associated with implementing a new fee structure.

In terms of the relative economic efficiency of a MWh and a revenue based fee we are unable at this stage to draw a firm conclusion. This is because:

- both fees will tend to be passed through almost immediately into higher energy prices;
- it is unclear whether one option is administratively more costly than the other; and
- a revenue based fee will tend to be passed on more than proportionally in high demand periods while a MWh fee will tend to result in an equi-proportionate increase in energy prices in all periods. Which of these is more efficient will depend on whether consumption decisions are more or less likely to be distorted in high demand periods than low demand periods - a matter in which we are unable to draw an *a priori* conclusion.

6. SUMMARY AND RECOMMENDATIONS

6.1. Introduction

As discussed in section 2, NEMMCO and NECA's costs can be divided into two categories:

- incremental costs incurred by NEMMCO and NECA as a direct consequence of the discretionary actions of individual Code Participants; and
- 'fixed' costs that must be incurred by NEMMCO and NECA irrespective of the discretionary actions of Code Participants.

Consistent with the economic advice to NEMMCO at each pervious participant fee determination, recovery of the first category of costs in the form a charge on the actions of Code Participants that cause NEMMCO or NECA to incur the costs will promote economic efficiency. We therefore recommend that, where practicable, NEMMCO introduce incremental cost based pricing for all of its discretionary services. One example of this type of charge would be a 'new generation capacity testing charge' or a 'new interconnection testing charge'.

We note that the pricing of discretionary services in this manner would seem to be consistent with the Code requirement for charges to be reflective of the involvement of the Code Participant with NEMMCO and NECA's costs.

Consistent with the general approach to be adopted by NEMMCO for determining the structure of Participant fees discussed in section 2, NEMMCO intends to allocate the remainder of its costs to classes of Code Participant in a manner that is reflective of their involvement with NEMMCO's costs. However, this process will account for some but not all of NEMMCO and NECA's remaining costs.

Consequently, after fulfilling the Code requirements in terms of ensuring that costs allocated to classes of Code Participant are 'reflective of involvement' of those Participants, NEMMCO must still:

- decide the appropriate structure of Participant fees within each class of Code Participant; and
- decide simultaneously both the class of Code Participant and the form of fee structure applicable to that class for recovering costs that are unallocated by the reflective of involvement criterion.

The remainder of this section explains how the criterion of economic efficiency can be used to help decide these issues. However, we note that NEMMCO may well wish to consider non economic considerations in its choice of final fee structure – such as the degree of

'unreasonable' discrimination associated with each fee structure (discussed in the previous section).

6.2. Ranking Fee Structures

We have considered five generic fee structures according to their economic efficiency properties, including the level of administration and compliance costs. Our conclusions are summarised in the following table that ranks these fee structures. These conclusions rely in large part on the analysis already provided in section 4 above.

The first equal ranked charges are the unadjusted MW capacity charge[49], levied on generators, and the MWh charge levied on retailers. While these charges are not the least distorting in terms of economic decisions made by end users, they are likely to impose the smallest level of administration and compliance costs on NEMMCO and other Code Participants – not least because they are already in place[50]. Given that the potential efficiency costs of distortions to end customers decisions is likely to be less than $160,000 per annum in total (ie, attributable to both Market Customer and Generator fees), administration and compliance costs become an important, if not the most important, determinant of what constitutes an efficient fee structure.

In principle, we regard the customer connection charge levied on retailers as the fee structure least likely to distort end users' consumption patterns. However, we are advised that it would be difficult and costly for NEMMCO to collect customer connection data per retailer from its MSATS database since this has been structured to collect information on national metering identifiers (NMIs), rather than customers. More importantly, NEMMCO simply does have not a full set of customer connection data for retailers in jurisdictions that have not introduced FRC.

In consequence, the administration costs of collecting some form of proxy data for customer connections and the likely errors of any such proxy make this option less attractive than the fee structures currently in place. It is also true that a flat fee per customer connection may be viewed as unfair on the grounds that large industrial customers would pay the same as residential customers. However, introducing and securing compliance with fees adjusted for some form of 'banding' of customer connections would add significantly to the administration costs involved.

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[49] The term 'unadjusted MW charge' refers to the absence of an adjustment for capital intensity per MW.

[50] We note that an annual or lagged MWh charge levied on either NSPs or Generators would exhibit the same short and long run economic efficiency benefits as the retailer-levied MWh charge, but both these options involve relative disadvantage on administrative and compliance costs grounds, since they are not already in place.

Table 5.1: Ranking of Alternative Fee Structures

Rank	Fee structure	Class on which fee levied	Short run benefits relative to MWh benchmark	Long run benefits relative to MWh benchmark	Low administration, compliance costs	Comment
1=	Unadjusted MW capacity charge	Generators	Positive	Negative	Positive	An unbanded approach delays pass through but disadvantages low capital cost per MW plant. However, it is unlikely that the latter impact will be material and there are likely to be significant administration cost savings associated with this option.
1=	Annual MWh and/or lagged MWh	Market Customers	Neutral	Neutral	Positive	There is no delay in pass through (subject to regulatory constraints) and pass through can be expected to be in the form of MWh charge. However, there are likely to be significant administration cost savings associated with this option.
2=	Connection	Market Customers	Positive	Positive	Negative	Short and long run impacts of pass through on end customer behaviour likely to be negligible. However, it is likely that administration costs make this option relatively unattractive.
2=	Spot market revenue	Generators	Neutral	Neutral	Neutral	Spot market based fees will be passed through to final customers as quickly as MWh based fees. It is not clear that administration costs would be significantly higher relative to alternatives although it would involve implementing a new fee structure.
2=	Connection	Network Service Providers	Neutral	Neutral	Positive	Administration costs associated with charging NSPs a connection fee are smaller but there is less likelihood that this will be passed onto final customers as a connection charge due to the additional layer(s) of regulatory control it must pass through.

3	MW capacity charge adjusted for capital intensity per MW	Generators	Positive	Neutral	Negative	If banding is reflective of unit capital costs then this option does not involve any distortion to the type of generation. However, achieving this outcome may not be practicable and is likely to involve higher costs in implementation than are warranted by the efficiency benefits.

An alternative would be to levy customer connection charges on NSPs where data may be relatively less expensive to collect and update (since customer churn amongst NSPs is not significant). However, levying connection fees on NSPs rather than retailers means that the fee must pass through at least one additional layer of price regulation prior to it being passed through to end customers. This means there is greater chance that regulatory processes will cause these fees to be passed through as MWh charges than if they are directly levied on retailers. Since virtually all NSP customers are subject to price control regimes while some retail customers are not, the additional risks of 'pass through distortion' associated with levying fees on NSPs rather than directly on retailers tend to offset the benefits in terms of potentially lower administration costs.

The last ranked charge is a MW based charge levied on generators where the charge per MW is adjusted for each unit of plant to take account of varying levels of capital intensity per MW. In addition to the benefit of delaying the pass through of costs in higher energy charges, such a fee structure would also avoid distorting the mix of generation between plant with high and low capital intensity per MW. Given that NEMMCO's fees are small relative to the size of the market, however, it is unlikely that these benefits will be material. In any event, accurately devising such a fee structure would require NEMMCO to collect information, either directly or through a proxy, on the capital costs per MW of each unit of generating plant. It is unlikely that NEMMCO could do this accurately for all generating plant and it is likely that the costs of attempting to do so would be prohibitive given the small potential benefits.

6.3. Fee Structure by Code Participant

Once NEMMCO has applied the reflective of involvement criterion to determine an allocation of costs to be recovered by class of Code Participant, it must then decide on the appropriate structure of Participant fees for recovering costs within that class. The analysis of the previous section identifies that, on currently available information:

- for generators, the most efficient fee structure is an 'MW capacity charge', without adjustment for the different capital cost intensities of different types of generation plant, levied, as now, on registered capacity at a date immediately prior to the making of NEMMCO's Participant fee determination;
- for Market Customers, the most efficient fee structure is an annual MWh charge, similar to that currently applying but with the existing separate historic and current annual MWh fees combined for ease of administration into a single, current annual MWh based fee; and

In the event that Network Service Providers were to be allocated costs for recovery under the reflective of involvement criterion (which we understand not to be the case for this determination), the most efficient fee structure would be a charge levied on a per customer connection basis.

6.4. Unallocated Costs

It must be noted that economic efficiency considerations can only play a limited role in determining what proportion of unallocated costs should be recovered from each of generators and market customers.

Nonetheless, maintaining something akin to the status quo in terms of the proportion of NEMMCO's costs allocated to retailers and generators may be desirable. This is because efficiency can be reduced simply as a result of changes in the incidence of Participant fees. Such costs might include the transitional costs of Participants' adapting business plans to meet Participant fees, or the risk of Participants seeking to invoke costly dispute resolution mechanisms in an attempt to avoid or reduce their impact. We therefore believe it reasonable for NEMMCO to have regard to the current arrangements when allocating the costs otherwise unallocated by the reflective of involvement criterion.