

# Note on postage stamped pricing

Version 1: for review by TPAG

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**Note:** This paper has been prepared for discussion with TPAG. Content should not be interpreted as representing the views or policy of the Electricity Authority or of the TPAG.



## 1 Note on postage stamped pricing

### 1.1 Purpose

1.1.1 This note provides a description of postage stamped charging as it applies to electricity networks as requested by TPAAG at its meeting of 24 February 2011. It also provides some description of the postage-stamped interconnection charge that is applied currently under the TPM.

### 1.2 Postage stamped charging

1.2.1 Postage stamped charging, as it applies to electricity network charging, involves a uniform rate for all customers. The uniform rate can be charged against different variables such as energy offtake and injection, or a measure of peak offtake or injection. More detailed examples of the possible variables are given in the table 1 below. Although customers are all charged the same uniform rate, they can influence their total interconnection charge through their behaviour, but this depends on the variable that the postage stamped rate is charged against.

**Table 1 Possible charging variables**

Variables	Descriptions
Actual MWh	Charges based on actual electrical energy offtake or injection quantities (in MWh). For example, a load could be charged based on the sum of its monthly offtakes while a generator could be charged based on the sum of its monthly injections.
Time of Use MWh	Charges based on the sum of electrical energy offtakes or injections (in MWh) at various times. For example, a load could be charged on the basis of its offtakes during peak times (such as 8am to 6pm working weekdays), or during peak and shoulder times. Similarly, a generator could be charged based on its peak time injections into the grid.
Peak offtakes/injections	Charges based on a number of peak offtakes or injections over a measurement period. The nature of the peak could be defined in relation to a certain number of half-hours (such that the peaks would be measured in MWh) or a certain level of demand (such that the peaks would be measured in MW).
Nameplate or contracted MW	Charges based on the registered nameplate capacity (in MW) of generators and maximum contracted demand (also in MW) for loads.

### 1.3 Postage stamped charging as applied in the TPM

1.3.1 The interconnection charge that is applied currently under the TPM is described as 'postage stamped'. Under the TPM, all interconnection costs are allocated to offtake customers. An offtake customer's annual interconnection charge at a particular location is based on the product of the 'Interconnection Rate' and the customer's average regional coincident peak demand (RCPD) for that customer at that connection location.

1.3.2 The Interconnection Rate is the same across all customers (ie it is postage stamped) and is set at a level to ensure all interconnection revenue is recovered. This requires that the Interconnection Rate is equal to the interconnection revenue divided by the sum of the average RCPDs for each customer at a connection location across all customers at all connection locations. This is shown in equation form in Figure 1.

$$IR = \frac{R_{IC}}{\sum_{Regions} \sum_{Cust} \sum_{loc} \frac{1}{N_{reg}} \sum_{i=1}^{N_{reg}} RCPD_i}$$

Where:

$R_{IC}$  is the interconnection revenue

$\sum_{Regions} \sum_{Cust} \sum_{loc} \frac{1}{N_{reg}} \sum_{i=1}^{N_{reg}} RCPD_i$  is the sum of the average RCPDs for each customer at a connection location for all customers at all connection

**Figure 1 Definition of the Interconnection Rate**

1.3.3 The current arrangements were designed to provide an incentive for customers to manage their peak at times of regional peak demands in those regions where there are likely to be significant transmission constraints and new investments.

1.3.4 A regional peak demand period is one of a certain number 'n' of regional peak demand half-hours in a measurement period. This number 'n' varies according to the region in which the customer is located:

- In the upper North and South Island regions, there are 12 regional peak demand periods in a year.
- In the lower North and South Island regions, there are 100 regional peak demand periods in a year.

1.3.5 This means that a customer's average RCPD is obtained by averaging over more half hours in the lower North and South Island regions than in the upper North and South Island regions. This broad separation into four regions was done to recognise that both the Upper North and South Islands were likely to have transmission constraints and were most likely to require ongoing investment in expensive transmission capacity. The use of twelve peak periods was intended to better influence demand management consistent with efficient use of existing transmission capacity.