



Providers of specialist cost solutions
in electricity supply and distribution

Distribution Policy
9 Millbank
London
SW1 3GE

CoCal Limited
262 High Road
Trimley St Martin
Felixstowe
IP11 0RG

Sent by email to distributionpolicy@ofgem.gov.uk Tel: 01394 210648

26 August 2004

Dear Sirs

**Response to Letter of 30 July 2004: Electricity Distribution
Connection and Use of System Charges for Demand Customers and
Generators**

CoCal is pleased to have the opportunity to respond to Ofgem's open letter of 30 July 2004 on Electricity Distribution Connection and Use of System Charges for Demand Customers and Generators. Our views are based on worldwide experience of analysing distribution network costs and formulating and setting tariffs.

Divergence between methodologies

Tariffs should reflect distribution costs and formulated to avoid undue discrimination between customers or groups of customers. Some of the proposed methodologies will not achieve this.

The variation between the methodologies proposed by the DNOs will inevitably lead to disparate charging across DNOs. This could create situations where charges to domestic customers are significantly different (perhaps double) between one DNO and another simply through the way charges are constructed. (An example of this would be very different standing charges caused by different allocations of customer related costs).

Most LV network costs are neither related to the marginal cost of distributed energy nor the marginal cost of additional customers. Problems could arise where any difference is allocated to energy related charges by some DNOs and to customer related charges by others.

Demand use of system models

In modelling costs, DNOs need to derive charges on a cost reflective and robust manner. The 500 MW model most readily achieves this.

500 MW models

We would expect these models to incorporate the proposed changes to connection charge arrangements in April 2005 to reflect the network capital costs to be included in connection charges with the asset replacement and O&M costs for the remainder of the network.

This should, for example, lead to higher HV costs per kW for LV customers than for HV because HV customers will be paying for part of the HV network capital costs through connection charges, whereas LV customers will not (their connection charge normally covers only some of the LV capital costs).

Regulatory reflective method

The problems with this method are:

- It reflects the price control formula instead of underlying costs; and
- The variable element of the price control does not reflect marginal distribution costs.

Simulation model

As described, this model allocates non-demand related costs as customer related. However, non-demand related costs are much higher than marginal customer related costs.

For example, increasing the demand density (but not customer density) on a large housing estate will increase the size of feeders and the number of substations but make little difference to the amount of excavation. Increasing the customer density (but not demand density) will increase the number of services but not the amount of LV mains or number of substations. In particular, the proposed connection charge policy means that the capital cost of services in DUoS tariffs will be nil.

As described, the simulation identifies marginal demand-related costs then allocates the remaining costs as customer related.

Charge-setting model

The scaling of existing tariffs assumes that they are presently cost reflective. Even if they reflect costs now, they will not do so after the proposed changes to connection charges.

Yardsticks

Split of customers between yardsticks

The need for customer categories should be dictated by the capability of tariff structures to reflect the significant differences of costs imposed by the different customer groups. We would expect to see the following categories:

- Public Lighting – because load characteristics are very different from any other category;

- Domestic single rate – because domestic customers peak in the evening;
- Non-domestic single rate – because non-domestic customers peak in the day;
- Two rate tariffs for both domestic and non-domestic – because the day and night rates should reflect both day and evening costs;
- Tariffs for larger LV supplies fed from the LV network;
- Tariffs for larger LV supplies fed from HV/LV substations – because the capital cost of the feeder from the substation will be paid in the connection charge. (All DNOs should have “substation” tariffs but only a few do);
- Tariffs for HV supplies fed from the HV network; and
- Tariffs for HV supplies fed from EHV/HV substations – because the capital cost of the feeder from the substation will be paid in the connection charge.

Calculation of yardsticks

There is no accepted method of allocating HV system costs between HV and LV customers and there is no reconciliation between coincidence and diversity factors. Many countries achieve such a reconciliation using a system load model, calibrated by the input quantities to the system, losses and the quantities distributed to customers. The Appendix shows an example of how this can be achieved.

Treatment of EHV

Yardstick costs are scaled to reconcile with the price control for lower voltages. The same scaling should apply to EHV.

The allocation of joint asset costs often assumes a coincidence of unity between the EHV customer and the remaining system. This coincidence should be lower than unity, especially when the system is distributing more domestic load than non-domestic.

Availability of Statements

Statements should be available for free download from the company websites although a charge is reasonable when a printed copy is provided as an alternative.

O&M charges

It would be helpful and aid transparency of charging if overall O&M costs were identified in the regulatory accounts along with a valuation of the distribution system on a MEAV basis. This would produce a value for the percentage O&M that should be charged for the provision of additional connection assets.

I hope you find our comments helpful. If you would like further detail on any of the above, then please let me know.

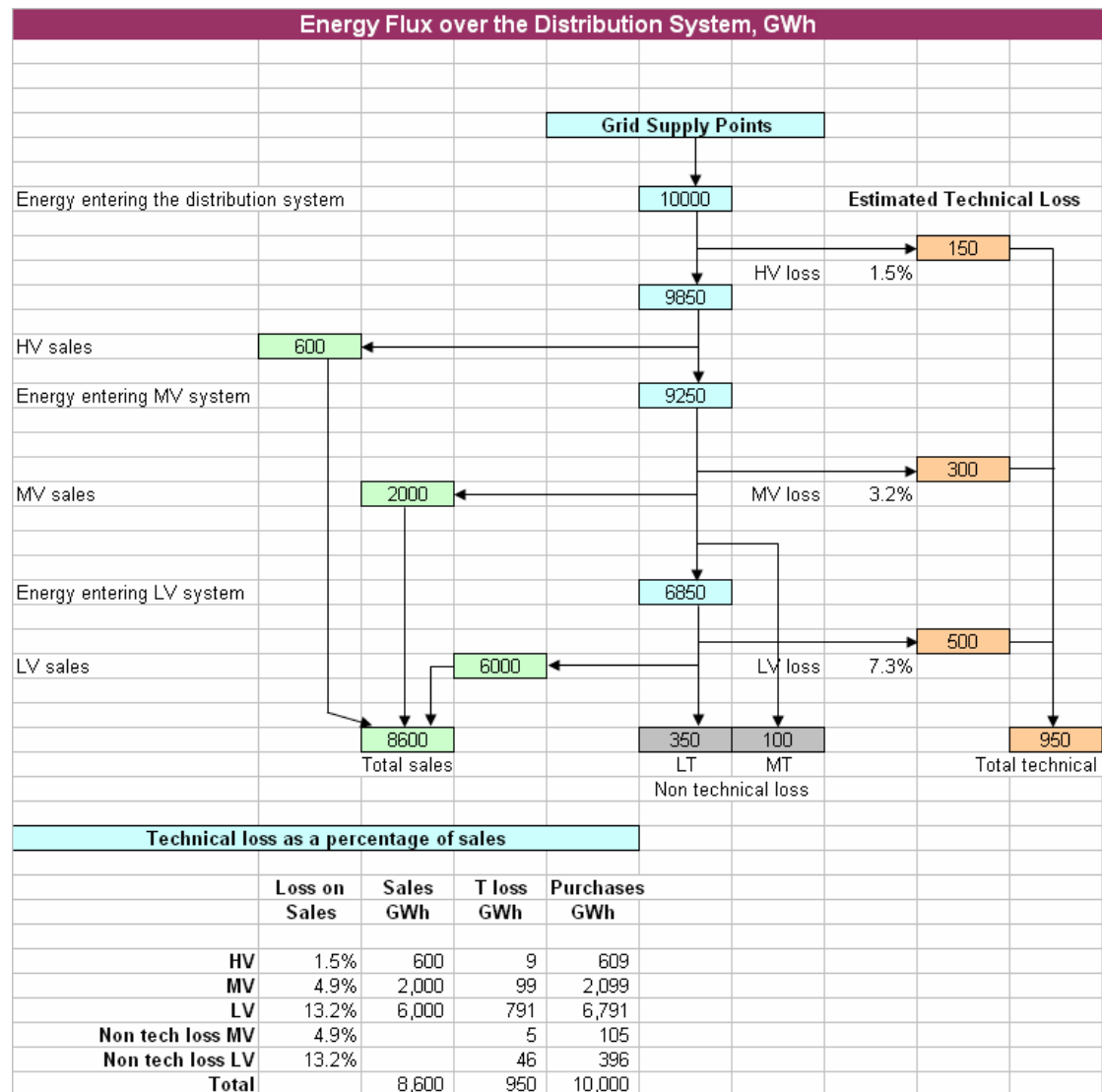
Yours sincerely

Adrian Callaby
Director

Appendix

Example showing the first step of reconciling energy, power and losses.

The input and output GWh are known. Estimated losses are then adjusted to achieve reconciliation between input and output.



From the energy flow reconciliation it is possible to obtain the power flows at the time of System Maximum Demand. Note that percentage power losses are much greater than the GWh losses.

