

Appendix L

CEG Review – Long Run Marginal Cost Methodology



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Dear Mike

Review of Integral Energy's estimation of long run marginal cost

Under section 6.18.5(b)(1) of the National Electricity Rules (the Rules), Integral Energy must formulate its prices having regard to the long run marginal cost associated with each charging parameter of a tariff class.

Integral Energy has provided CEG with a *Long Run Marginal Cost Model*, in which it estimates long run marginal cost for each pricing component of its tariff classes and compares these to its proposed prices for the next regulatory period. CEG has reviewed this model and concludes that Integral has correctly applied a methodology for estimating its long run marginal costs.

The long run refers to a situation in which the investment in plant and equipment is variable. It is distinguishable from the short run being the period in which the capacity of existing plant and equipment cannot be easily altered. For electricity networks the short run marginal cost of serving additional demand is generally close to zero unless serving that extra demand increases the probability of network outages. In which case the short run marginal cost is determined, not by the cost to the network owner associated with serving extra demand, but the cost to customers of reduced reliability of supply.

In the long run, network owners seek to ensure reliability of supply by building extra capacity in advance of growth in demand. Thus, in the long run the marginal cost of increases in demand are determined by the additional costs of expanding network capacity to deal with that growth in demand while still retaining the desired reliability of supply.

Integral Energy's *Long Run Marginal Cost Model* calculates long run marginal cost by following the steps below:

1. Identify forecast average annual growth in peak demand by voltage level (ST, HV and LV) as a proxy for capacity.

2. Forecast average annual growth in network augmentation expenditure by voltage level designed to meet that increased demand.
3. Estimate incremental and recurrent O&M and overhead costs associated with increased the network augmentation identified in (2).
4. Annualise capex costs identified at (2) on the basis of WACC and average asset life.
5. Calculate long run marginal cost as the average incremental cost per annum per unit of capacity = (3+4) divided by (1)

We have reviewed Integral's calculations in its model at each step listed above and are satisfied that this methodology for estimating long run marginal cost is consistent with the findings of the economic literature and standard industry practice.

We have also reviewed the methodology used by Integral to allocate its estimates of long run marginal cost to individual pricing components of its various tariff classes. We are satisfied that the methodology applied by Integral is reasonable and that its has made this allocation correctly given the input parameters.

Yours sincerely



Tom Hird
Director