

DEMAND MANAGEMENT SCREENING TEST

Morisset Zone Development

Current Supply Arrangements

The system under consideration consists of six 11kV feeders (80081, 80074, 80080, 80077, 80083 and 80075). They supply an area including Morisset, Morisset Peninsular, Bonnells Bay and Brightwaters. These feeders are interconnected and provide support for each other under emergency switching conditions.

The licence conditions require that a feeder's load does not exceed 80% of its maximum rated load under normal system conditions. This feeder system is designed so that if any one feeder experiences an outage, the loads on that feeder can be picked up by the adjacent interconnected feeders. This should be achieved with a maximum of 3-5 switching operations as stipulated in the licence requirement that 11kV customer interruptions in urban areas with a population of greater than 5000 should be less than 4 hours.

Supply Capacity and Demand Forecast

The load on the relevant feeders is predominantly residential with some commercial customers. Peak demand on the feeders occurs during summer.

The feeders 80081, 80074, and 80080 are currently identified as exceeding 80% of their maximum rated load under normal system conditions. Furthermore, for some emergency scenarios load cannot be picked up by the adjacent interconnected feeders without exceeding their maximum rated load.

The table below summaries the worst case emergency switching scenario:

Scenario	Pickup Feeder	Capacity of Limiting Section (MVA)	Summer Emergency Load forecast (MVA)				
			2009/10	2010/11	2011/12	2012/13	2013/14
Outage of Feeder 80081	Fdr 80074	6.2	11.6	11.9	12.3	12.7	13.1

Supply Strategy Option

The preferred supply side option consists of three new feeders from Morisset Zone to Morisset Peninsula, as well as some upgrading of overhead mains and the installation of three new 11kV voltage regulators.

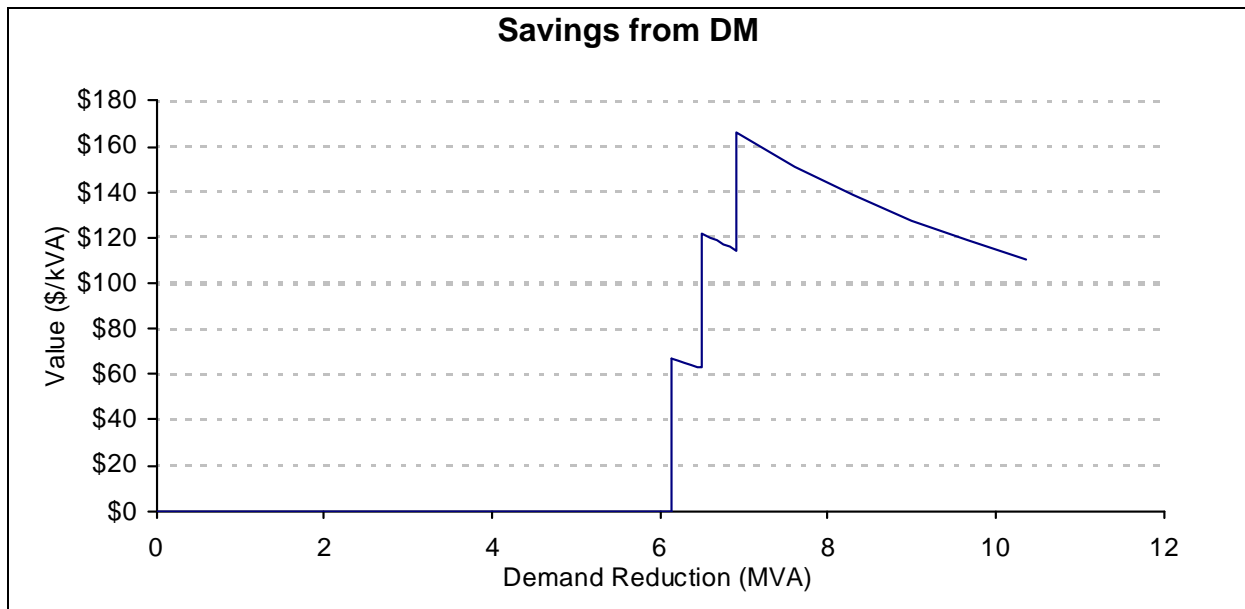
The planning estimate for this project is \$5.96M. The proposed commission date is Dec 2011. A decision on this investment must be made by Dec 2010.

Required Demand Management Characteristics

If demand could be reduced by 6.1MVA by summer 2011/12, then the proposed investment could be deferred by one year. This represents more than 50% of the total demand in this load area. The savings from this deferral would be \$410,000 or \$67/kVA, which is low.

If demand could be reduced by 6.5MVA by summer 2012/13, then the proposed investment could be deferred by two years. The savings from this deferral would be \$790,000 or \$121/kVA, which is also low.

If demand could be reduced by 6.9MVA by summer 2013/14, then the proposed investment could be deferred by three years. The savings from this deferral would be \$1.15m or \$166/kVA, which is moderate.



The demand reduction requirement is high both in absolute and relative terms, and the savings from deferral is low to moderate. It is therefore concluded that it is not reasonable to expect that demand reduction options could cost effectively defer the proposed investment in this case.

Recommendation

Based on this analysis it is not considered reasonable to expect that it would be cost-effective to postpone the proposed supply-side solution by implementing demand management strategies.