DEMAND MANAGEMENT SCREENING TEST

North Concord Zone Development

Current Supply Arrangements

The system under consideration consists of Concord Zone Substation 11kV feeders 2, 7, 8 & 9.

These feeders are interconnected, and supply an area including parts of Concord, Homebush Bay, Rhodes Peninsula and Rhodes Business Park.

This system is designed so that if any one feeder experiences an outage, the loads on that feeder can be picked up by either of the other two 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 greater than 5,000 people should be less than 4 hours.

Supply Capacity and Demand Forecast

Summer is the critical season for this system, with peak demand in the daytime period. The area is a mix of residential and commercial loads.

The worst case summer loading under emergency conditions is described in the table below.

Scenario	Pickup Feeder	Limiting Section	Capacity of Limiting Section (MVA)	Summer Emergency Load forecast (MVA)		
				2009/10	2010/11	2011/12
Fault on feeder 2	8	Fdr 8 trunk	5.8	7.2	7.3	7.3
Fault on feeder 8	2	Fdr 2 trunk	6.4	8.1	8.2	8.2
Fault on feeder 9	15	S.7189 to S.1432	5.9	6.1	6.1	6.1

This shows that in summer 2010/11 the forecast demand would be above the licence limits on a number of different feeders.

Supply Strategy Option

The preferred supply side option is to install two new 11kV feeders to the Rhodes Business Park, plus some additional augmentation and minor cable laying in the Business Park area.

The estimated cost of the project is $3.4m, with commissioning proposed for May 2010. To meet this timeframe the investment decision must be made as soon as possible.

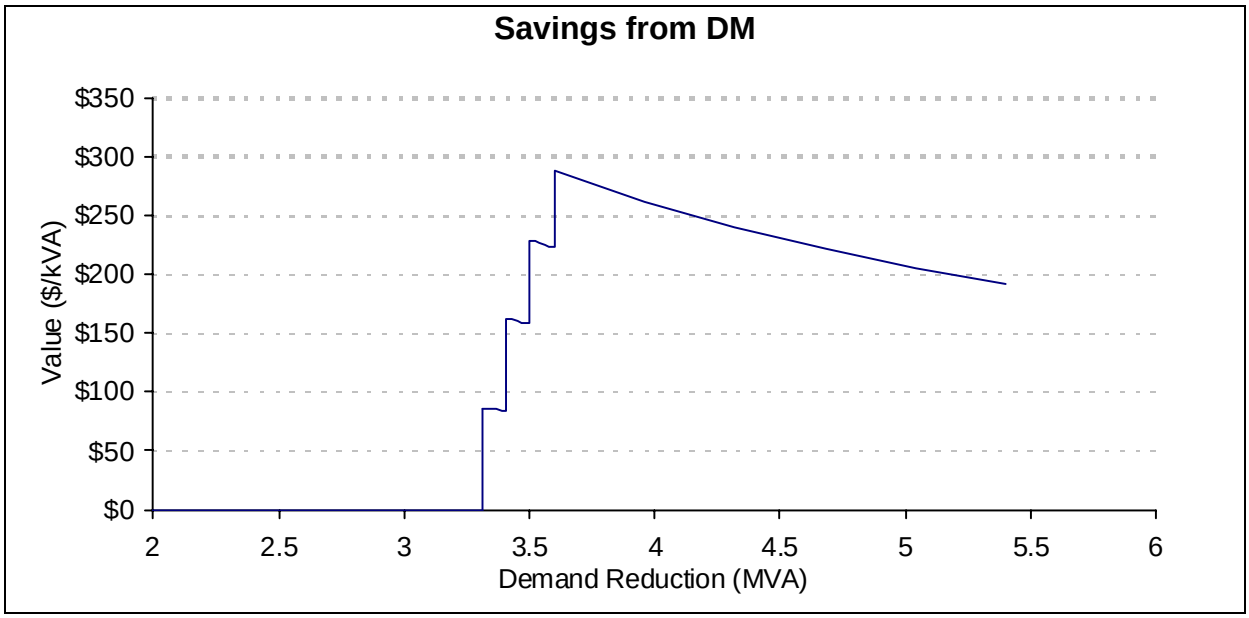
Required Demand Management Characteristics

If demand could be reduced by 3.3MVA by summer 2010/11, the proposed investment could be deferred by 1 year. The demand reductions would need to occur in the specific locations to ensure that capacity limits were not exceeded for the relevant emergency scenarios. This is 15% of the total demand on these feeders. The savings from this deferral is $290,000, or $86/kVA, which is low.

If demand could be reduced by 3.4MVA before summer 2011/12, then the proposed investment could be deferred by two years. The savings from this deferral is $550,000, or $162/kVA, which is moderate.

If demand could be reduced by 3.5MVA before summer 2012/13, then the proposed investment could be deferred by three years. The savings from this deferral is $800,000, or $229/kVA, which is also moderate.

As demand is forecast to continue to grow, longer deferrals would require greater demand reductions.



The demand reduction requirement is large in absolute terms and as a proportion of total demand on these feeders. The deferral value is low to moderate, and the timeframe before an investment decision is short.

It is therefore not considered reasonable to expect that this investment could be cost effectively deferred via demand management options.

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.