

DEMAND MANAGEMENT SCREENING TEST

West Gosford Zone Development

Current Supply Arrangements

The system under consideration consists of West Gosford Zone Substation 11kV feeders 5R, 6L, 14R, 16R and 17L.

These feeders are interconnected, and supply the areas east of the Narara River, including parts of Gosford, North Gosford, Wyoming and Springfield. The area is a mix of residential and commercial loads.

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 evening period. There are also some significant new loads expected on the relevant feeders.

The worst case 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)			
				2008/09	2009/10	2010/11	2011/12
Fault on feeder 5R	17L	S.12341 to UGOH.8642	5.6	6.9	7.1	7.2	7.4
Fault on feeder 6L	13	UGOH.4676 to S.14116	6.0	6.3	6.4	6.5	6.7
Fault on feeder 6L	1	Fdr 1 trunk section	7.6	8.7	8.9	9.1	9.3
Fault on feeder 14R	10	T.25815 to CP.12556	3.5	3.8	3.8	3.9	4.0

Fault on feeder 16R	6L	Fdr 6L trunk section	7.2	8.1	8.2	8.4	8.6
Fault on feeder 17L	5R	T.25929 to S.11035	3.2	4.0	4.0	4.1	4.2
Fault on feeder 17L	5R	T.64551 to S.18166	6.6	7.2	7.3	7.5	7.6

This shows that in summer 2009/10 the forecast demand would be above the licence limits on several different feeders.

Supply Strategy Option

The proposed supply side investment involves construction of two new feeder cable from West Gosford Zone Substation to the inner Gosford CBD, with some additional minor works. In addition the project will involve the uprating of some overhead feeders to 75degC construction.

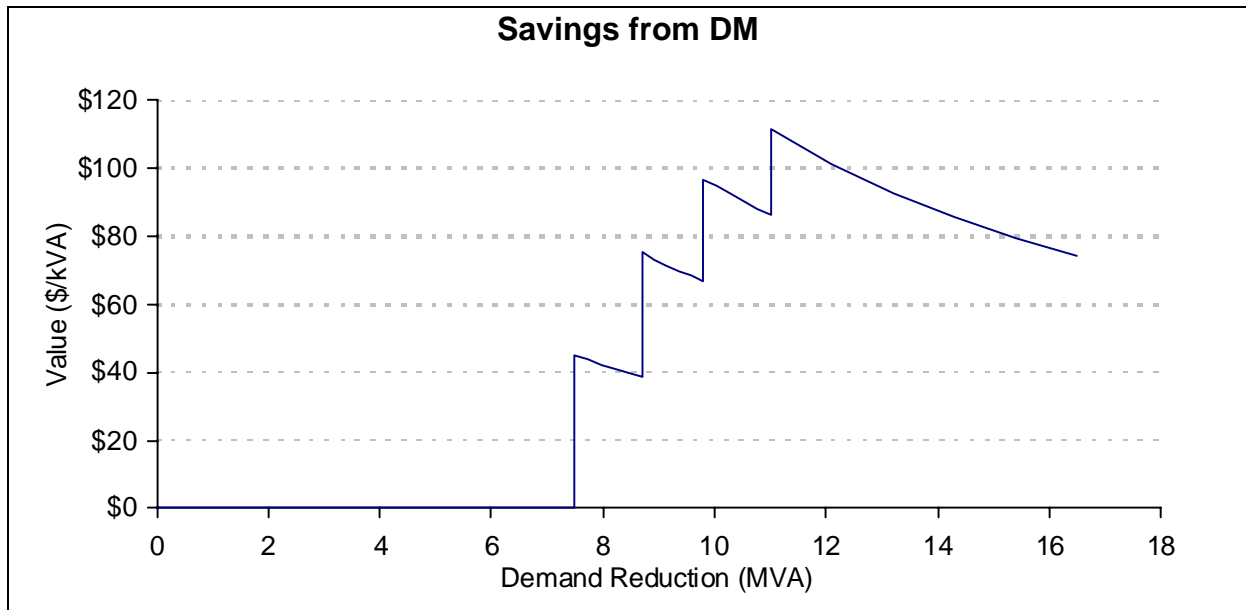
The estimated cost of the works is \$4.3m. The proposed commissioning date is November 2009, with an investment decision to be made as soon as possible.

Required Demand Management Characteristics

If demand could be reduced by 7.5MVA by summer 2009/10, then the proposed investment could be deferred by one year. The savings from this deferral is \$340,000, or \$45/kVA, which is low.

If demand could be reduced by 8.7MVA by summer 2010/11, then the proposed investment could be deferred by two years. The savings from this deferral is \$650,000, or \$75/kVA, which is also low.

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



The demand reduction requirement is large, and the savings from deferral are low. In addition the timeframe before an investment decision must be made is very short. It is therefore not considered reasonable to expect that this investment could be cost effectively deferred with 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.