

DEMAND MANAGEMENT SCREENING TEST

Feeders 10, 11 and 13 at Mortdale Zone

Current Supply Arrangements

Feeders 10, 11 and 13 at Mortdale zone supply a region to the northeast of the zone substation including parts of Mortdale, Penshurst and Hurstville. This area is predominantly residential with a few commercial customers.

This system is designed so that if any one feeder experiences an outage, the loads on that feeder can be picked up by one or more of the interconnected feeders. This should be achieved with a maximum of 3-5 switching operations, which aligns with the licence requirement that 11kV customer interruptions in urban areas with >15,000 customers should be less than 4 hours.

Supply Capacity and Demand Forecast

The load at Mortdale zone, including feeders 10, 11 and 13, is forecast to grow at 4.5% per annum in summer and 1.5% per annum in winter. There are no significant new spot loads expected on the relevant feeders in the near future. The area is predominantly residential with a few pockets of commercial and industrial customers. The seasonal peaks as follows:

Feeder number	Summer peak	Winter peak
10	4:15pm – 6:15pm	5:30pm – 10:00pm
11	4:00pm – 9:30pm	6:00pm – 10:30pm
13	8:30pm – 10:30pm	5:30pm – 10:00pm

We forecast that demand will exceed the relevant limit on feeder 13 by 0.4MVA in summer 2008/09. In addition, if there was an outage at the feeder 11 circuit breaker during peak conditions in winter 2009, we forecast that demand would be greater than the relevant limit of the feeders. This could be resolved by a demand reduction of 0.7MVA across feeders 10 and 11.

Supply Strategy Option

The default supply strategy option is to install two new feeders connecting to strategic points to allow for the redistribution of load from existing feeders. The cost of this project is estimated at \$2.4million and the project is scheduled for completion in November 2008. An investment decision needs to be made by November 2007.

Required Demand Management Characteristics

A demand reduction of 0.4MVA before summer 2008/09 would enable the investment to be deferred until winter 2009. An additional 0.7MVA would be required before winter 2009 in order to defer the investment by one full year. This represents a reduction of about 8% of the forecast demand on the relevant feeders. The reduction would need to be effective during the peak periods mentioned previously.

A one year deferral would lead to a cost saving of about \$190,000 or \$180/kVA, which is a moderate level.

We would need to be confident that the demand management solution could be delivered and reliable before late 2007 as this is the latest time a decision could be made to defer investment.

The Demand Management and Planning Project (DMPP) has identified opportunities for demand management at large customer sites in the Sydney metropolitan region. The DMPP has identified four sites on the relevant feeders in Mortdale zone. These sites have the opportunity to reduce demand by up to 0.8MVA in both summer and winter at a cost of about \$0.75million. However, none of these sites are on feeder 13, which requires 0.4MVA of demand reduction. It is therefore expected that it will be difficult to identify appropriate demand management solutions in the timeframe.

The demand management requirement is moderate in absolute and relative terms (ie as a proportion of total demand), and also cost savings. However, the area is predominantly residential and few solutions have been identified by the DMPP. On balance, we therefore conclude that it is not reasonable to expect that sufficient demand management solutions would be identified in an investigation.

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.