

DEMAND MANAGEMENT SCREENING TEST

Beacon Hill Zone Substation

Current Supply Arrangements

Beacon Hill zone substation is equipped with two 33/11 kV transformers each with a rating of 25MVA. This substation has a licence capacity limit of 25.9MVA in summer and 27MVA in winter.

Beacon Hill zone supplies the suburbs of Allambie Heights, Beacon Hill, Frenchs Forest and Oxford Falls.

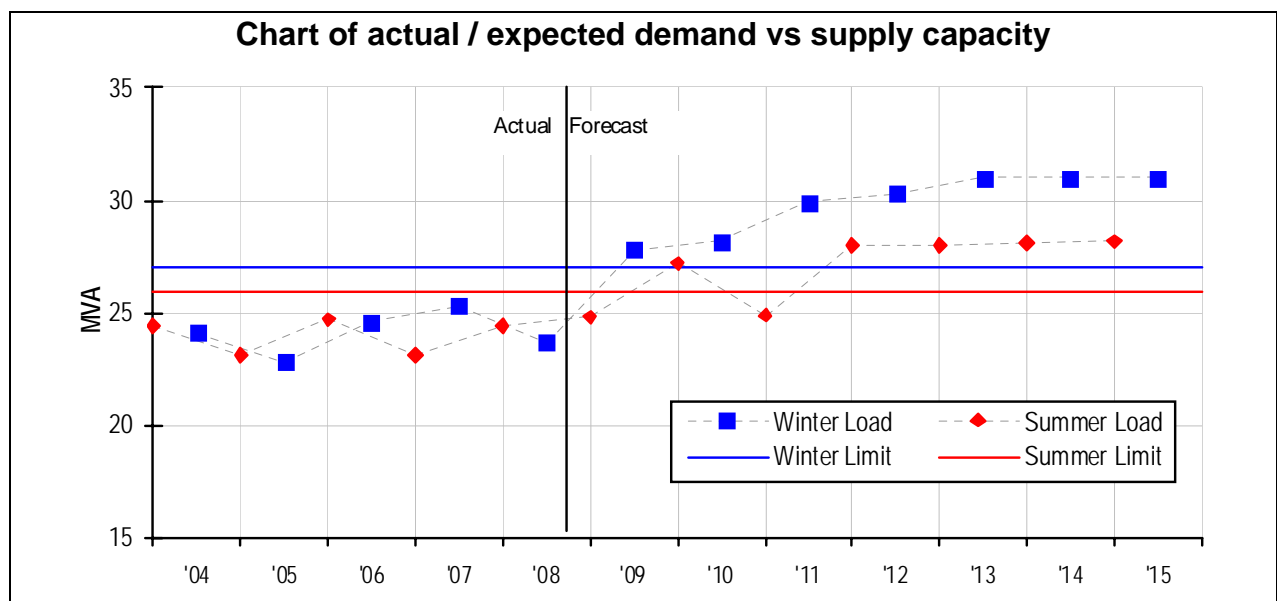
Supply Capacity and Demand Forecast

The load on Beacon Hill zone is a mixture of residential and industrial. Summer peaks occur in the middle of the day. Winter peaks occur in the late morning and early evening. Winter is the critical season.

There is a committed project in progress to install 1x6MVA capacitor bank at Beacon Hill zone by September 2010 to improve the power factor and reduce peak load at the zone. The summer peak load will be reduced by 2.4MVA and winter peak load will be reduced by 1.6MVA.

In addition, there is a planned 3MVA load transfer from Dee Why West zone that is not yet committed for winter 2011.

The forecast peak demand for Beacon Hill zone is shown on the chart below. This forecast takes into consideration the installation of the capacitor bank for summer 2010/11 and includes the potential load transfer from Dee Why West for winter 2011.



In winter 2010 the peak load would be approximately 1.2MVA above the licence capacity limit.

Supply Strategy Option

The preferred supply side option is to transfer 4MVA from Beacon Hill zone to Belrose zone by May 2010. This load transfer will reduce demand to below the license capacity limit for winter 2010 and make capacity available for the proposed 3MVA load transfer from Dee Why West to Beacon Hill zone in winter 2011. The cost of this option is estimated at \$2.28M.

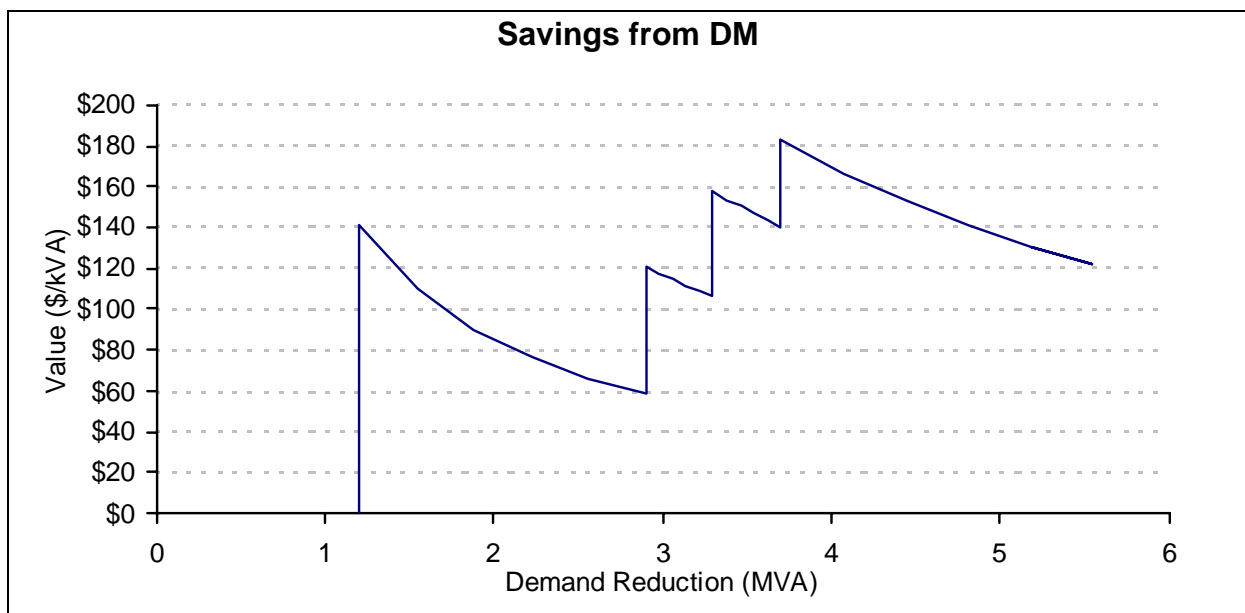
To meet the target commission date of May 2010, a decision on the investment must be made by November 2009

Required Demand Management Characteristics

To achieve a one year deferral of the proposed investment, we would need to identify and implement a demand reduction of 1.2MVA for winter 2010. This represents 5% of the current load on Beacon Hill zone which is moderate. The saving from a one year deferral would be \$170,000, or \$141/kVA which is low.

To achieve a two year deferral, we would need to identify and implement a demand reduction of 2.9MVA for winter 2011 which represents 10% of current load which is moderate. The saving would be \$350,000, or \$120/kVA which is low. The reduction for summer 2011/12 would need to be 2.1MVA.

To achieve a three year deferral, we would need to identify and implement a demand reduction of 3.3MVA for winter 2012 which represents 12% of current load which is moderate. The savings would be \$520,000, or \$157/kVA which is low. The reduction for summer 2012/13 would need to be 2.1MVA



Although the absolute demand reduction is low, the relative demand reduction is moderate and the size of the absolute and relative savings are both low. Therefore it

is not considered likely that it would be cost effective to defer the supply side solution by implementing demand management.

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.