Pacific Hydro Operational Experience – Note to REGWG

1. In relation to the operation of wind farms during high temperatures I can provide the following context (this was minuted at our meeting but I was unclear on the significance on generation during the high temperature alarms)

    a. Pacific Hydro operates 5 wind farms (260MW) in Vic & SA: Our operation experience spans 9 years and includes 4 turbine manufacturers.

    b. During high temperatures (above 40°C) our Portland MM82 2MW Repower machines have experienced high inverter inlet temperature alarms which has resulted in turbines tripping (for about 30min). The conditions are high temperatures (generally over a few days and low wind). Once the wind picks up the cooling effect results in the temperature falling below 40°C.

    c. During high temperatures (above 40°C) our Challicum Hills and Yambuk NM1500 c/64 and 72 1.5MW NEG-Micon machines have experienced a high bearing temperature alarm which has resulted in turbines tripping (for about 30min). The conditions are high temperatures (generally over a few days and high wind). Once the bearings cool the turbines are returned to service. Hydraulic faults also occurred on the pitch systems. These faults only affected startup, they were not an issue once a turbine was running.

    d. Our experience on the frequency of outages on the Portland machines is 1 or 2 events during last summer (including the 11/1/2010) and 1 event the summer before (in 2008/9 Victoria's summer had 3 successive days of 43°C+ temperatures and a 46.4° maximum 7/2/09). These events did not coincide with high Melbourne demand due to the distance between the wind farm and Melbourne. In the most extreme event we had several turbines off but generally it was between 1-3 turbines.

    e. Our experience on the frequency of outages on the Challicum Hill/Yambuk machines is 1 or 2 events since they were commissioned in 2003. In the most extreme event we had 2-3 turbines off. Again the trips are not necessary coincident with Victorian peak demand.

    f. South Australia experience very high temperatures in 2009/10 and we did not experience any temperature related outages on our Clements Gap S82 2.1MW Suzlon machines since its operation in May 2009.

2. In relation to my comments last week about our experience of operating wind farms during high system demand period it is of interest to note that the combined output of Pacific Hydro's Victorian wind farms generated 122MW during the maximum Victorian Summer System Peak of 16:00 on the 11/1/2010. This combined output was 60% of the rated capacity of these projects. During the South Australian maximum Summer System Peak of 13:00 on the same day our Clements Gap wind farm generated 48MW or 85% of its rated output.