

Preview of Annual Security Assessment

Security Advisory Group

October 2009

Purposes of the ASA

- Determine whether there is a need to procure Reserve Energy for next 1-3 years, or Reserve Capacity for next 1-2 years
- Provide an outlook over the next 5-10 years
- Test assumptions with industry

Contents of the ASA

- Demand forecast (up to 5 years)
- Generation assumptions (new plant, closure of existing plant)
- HVDC assumptions
 - Little focus on AC grid
- Projections of supply/demand balance
 - Winter Energy Margin (NZ, SI)
 - Winter Capacity Margin (NI)
- Sensitivity cases
- Implications for Reserve Energy and Capacity procurement

Margin measures

- Winter Energy Margin
 - Measures the excess of potential supply over forecast demand in GWh, over April-September, assuming average hydro inflows and normal demand response
 - Procure Reserve Energy if NZ WEM is below 17% or South Island WEM is below 30%
- Winter Capacity Margin
 - Measures the excess of potential peak supply over forecast peak demand, in MW, over April-September
 - Intermittent generation is derated
 - Procure Reserve Capacity if NI WCM is below 780 MW

Comparison with NWG

- NWG is an industry group convened by the SO. Purpose:
 - *develop an agreed industry participant view of likely demand & generation so as to provide a common view on issues and risks for the winter season*
 - *identify appropriate measures that could be implemented to mitigate risks*
- NWG focuses on next winter (c.f. ASA which covers next 10 years but focuses on next 2 years), covers North Island peak not dry-year energy, has a different range of options for dealing with problems, and can shift to an operational role during the winter period
- 2009 NWG report was published May 2009 and has been circulated to SAG
 - Outcomes of options workstream not included – for options considered in 2008, see <http://www.systemoperator.co.nz/national-winter-group-2008>
- NWG assessment compares P10 supply to P95 demand at N, N-G, N-2G
 - For a comparison with the ASA approach, see Section 3.2 of <http://www.electricitycommission.govt.nz/pdfs/opdev/secsupply/policy/capacity-adequacy-standard.pdf>

ASA conclusion in 2008

<http://www.electricitycommission.govt.nz/pdfs/opdev/secsupply/policy/ASA-2008-InfoPaper.pdf>

- No need to procure additional Reserve for 2009 or 2010
 - But reserve the option to procure demand-side resources if the situation changes
- Even with no new generation, projections of NZ Winter Energy Margin are above the 17% threshold for 2009-2012
- Even with no new generation, projections of SI Winter Energy Margin are above the 30% threshold for 2009-2014
- NI Winter Capacity margin is projected to fall below the 780 MW threshold in 2011 if there is no new generation – or earlier if Pole 1 becomes completely unavailable
 - But some new generation *is* expected

ASA process in 2009

- Preliminary test with SAG (this)
- Prepare demand forecast
 - Includes survey of distributors, retailers, major industrials and Transpower
- Prepare supply assumptions
 - Includes survey of major generators
- Calculate projections of WEM and WCM
 - Base case and sensitivities
- Prepare draft assessment document
- Test with SAG and Board
- Consult on draft
- Finalise and republish (this will be early 2010)

Assumptions in 2009

- Conservative assumptions
- Assume demand forecast carried out in late 2008 still holds – despite the recession
- Assume that West Wind and one 100 MW Stratford unit are available for winter 2010
- Conservatively assume that Nga Awa Purua, Tauhara and the second Stratford unit are not available for winter 2010
- Assume all the above generation is available for winter 2011
- Assume all assets currently in service are available in 2010-2011

Margins with these assumptions

- NZ WEM is projected to be 25% in 2010 and 27% in 2011
 - Threshold for procurement is 17%
- SI WEM is projected to be 41% in 2010 and 37% in 2011
 - Threshold for procurement is 30%
- NI WCM is projected to be 900 MW in 2010 and 1020 MW in 2011
 - Threshold for procurement is 780 MW

Preliminary conclusion

- No need to procure Reserve Energy or Capacity at this point
 - But there is still the option to procure demand-side resources if the situation changes
- What could lead to a different conclusion in the final assessment?
 - Information that a major power plant will be taken out of service
 - Information that important transmission assets will be unavailable
 - Information that a major new load will appear
- Note Ministerial Review conclusion from similar analysis: “margin of supply over demand is well above the economic optimum” (Volume 2, para 78)

Questions for SAG

- Does SAG consider that the process described is appropriate and consistent with the SOS Policy?
- Can SAG suggest any sensitivity cases to consider?
- Does SAG agree with the preliminary conclusion that there is no need for the Commission to procure Reserve Energy or Capacity at this point?
- Does SAG consider that the assessment fails to consider any material risks to Security of Supply?
- Suppose, at some point in the future, there was no centralised procurement of Reserve Energy. Does SAG consider that it would still be valuable for some agency to regularly assess investment adequacy? If so, how should the monitoring programme differ from the current Annual Security Assessment process?