

## IESO Stakeholder Engagement

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**From:** Kevin Van Koughnett  
**Sent:** March 7, 2011 3:55 PM  
**To:** IESO Stakeholder Engagement  
**Subject:** Renewable Integration (SE-91) - Visibility Technical Working Group

TransAlta Corporation offers the following comments and observations to this working group:

For the Dynamic Data Collection we disagree with the standalone meteorological tower as being the best representative data location for a wind farm. We attach a link from work done by WindLogics using nacelle based data.

[http://www.windlogics.com/downloads/WindLogics\\_Turbine\\_Nacelle\\_Anemometers\\_WINDPOWER\\_2010s.pdf](http://www.windlogics.com/downloads/WindLogics_Turbine_Nacelle_Anemometers_WINDPOWER_2010s.pdf)

We encourage active consideration of the alternative of the dynamic met data being provided from the nacelle anemometer and wind vane for the following reasons:

- a met tower is located at a single point
- the met tower will only be upstream in the free air in only one cardinal direction, in all other directions the met tower would be compromised
- the important wind speed and direction required are at hub height elevation
- a wind farm is composed of multiple turbines spread over large geographic areas
- the met data could be provided by all the nacelle-mounted control instruments (or averaged into a virtual tower)
- nacelle instruments are accurate and maintained as they are the control system for the wind turbine and must be operable for the wind turbine to work
- maintaining nacelle-mounted instruments is significantly easier and safer than met tower mounted devices
- the taller the met tower the more costly it is, e.g. 80 m much more expensive than 60 m
- as hub heights reach 100 m alternatives to met towers are likely more cost effective, e.g. Lidar
- recommendation should be not to specify the met data source but focus on the data quality needed
- nacelle data already gathered by wind farm scada and used for wind farm control - minimal new work required
- the same wind farm scada can provide real-time turbine availability which is important to forecasters
- the goal in forecasting is to accurately represent the wind farm power curve from all directions
- complex topography, elevation differences and non-uniform wind farm layout are automatically accounted for with nacelle based observations
- nacelle based provision of data would be less expensive than from met towers including both capital and ongoing operations costs

AWS Truewind as part of the Alberta AESO wind forecasting pilot study commented on met tower location and its impact on accuracy. We attach the link to their report.

[http://www.aeso.ca/downloads/Alberta\\_PP\\_Final\\_Report\\_AWST\\_Jun25.pdf](http://www.aeso.ca/downloads/Alberta_PP_Final_Report_AWST_Jun25.pdf)

Please see 3.5 in the report for their assessment.

Met towers are initially installed at prospective wind farm sites to assess the wind resource. Permanent met towers at wind farms are and were installed to verify the power curve of the wind

turbines for warranty purposes. They were not installed for wind forecasting. For long term uses such as wind forecasting we believe that a robust tower is required which facilitates any ongoing maintenance and is capable of supporting the specified full array of instruments at hub height including redundant sensors to cover structure shadowing. Such towers are very expensive. The cost impact for older wind farms needs to be considered and especially so in cases where no contractual provisions have been made for cost recovery.

We strongly suggest that older wind farms be allowed to provide nacelle-based met data rather than from met towers.

We would be happy to discuss these matters with the working group and/or the IESO.

Regards

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