

## Webinar: windPRO 3.5, GASP and EMD-API

### Questions asked during the webinar

Question	Answer
What about electrical losses between turbine production and grid entry? are they considered?	The electrical loss between WTGs and grid connection point can be entered. See more in section 3.7.2.1 <i>Grid curtailment</i> in the <a href="#">Energy manual</a> .
Hi, any intention of incorporating the new IEA Task 43 WRA Data Model? If so it would dramatically help with inputting slope and offset values that change over time.	We are working in that direction. First we need to establish and use the different parameters in windPRO and then comes import/export. For more info on slope and offset see section 12.2.2.2 <i>Data: Calibration</i> in the <a href="#">Meteorological manual</a>
Does WP3.5 allow users to define the design conditions of the turbine (instead of IEC standard conditions) in the Site Compliance/Load Response module?	Yes, you can select a Class S turbine. This allows you to define custom design values for: Vref, Vmean, k, wind speed dependent TI90, wind shear exponent and flow inclination
Solar and Hybrid calculations: 1) Is there any improvement to the time taken for solar simulation. More data can cause more time for calculation in 3.4 now. 2) Is there any enhancement to the solar module database? Apart from the generic models, if its possible to have a DB similar to wind turbines. 3) Online datasource for solar is not available at all locations now. Has that been considered and incorporated in 3.5?	1: The new "Reference panel calculation" method in 3.5 can drastically reduce the calculation time. See more on page 24 in the <a href="#">Solar PV manual</a> . 2: Sorry, no changes in the solar module database. 3: The Solar PV module gives access to ERA5t irradiation, temperature and humidity data. This has global coverage. The Heliosat (SARAH) irradiation dataset is also available, but this only covers some parts of the globe.
Is EMD planning to introduce typhoon/hurricane track data sets in WP3.5 (or future versions) and to enable MonteCarlo analysis for T-class Vref assessment?	The GASP dataset is calculated using a dedicated typhoon model in the relevant regions. We have looked into incorporating best-track data in windPRO, but paused this effort as GASP was on the way. The MonteCarlo method from Annex J in IEC61400-1 ed. 4, is from our current evaluation not superior to engineering models, but very complex to implement. However, if demand grows broader, we can prioritize this in the future.
With reference to Lifetime Extension, is there something that take into account the eventual damage accumulated in the foundation? How to assess it or consider its availability?	We do not have an explicit foundation model, but we do include loads at the tower bottom which is the fatigue loads seen by the foundation. We are looking into making a simplified model for foundations based on the recent IEC61400-6.
Can we export GASP res file into *.wrg format ?	No. The .wrg format only has a limited set of signals only for the resource parameters.

<p>Thanks for your answer, I understand the design TI profile could be specified under S-class option. However, can we also specify the design values of air density and shear of turbine (instead of IEC values of 1.225kg/m<sup>3</sup> and 0.2, respectively)?</p>	<p>Yes. Shear and air density is editable when selecting a Class S turbine</p>
<p>Hello I can see that point GASP values are not available right now in WindProspecting, When we will have the complete point sets available in Windprosecting GASP?</p>	<p>It is available after login. If not, please contact <a href="mailto:support@emd.dk">support@emd.dk</a></p>
<p>Thanks for the demo, very insightful. One question reagarding GASP, how do you reach this very high spatial resolution worldwide?</p>	<p>Many years of experience and working with models (EMD and DTU) and also big computer clusters. But still, it has taken a very long processing even delaying the end of the project.</p>
<p>GASP question:heard there is high uncertainty in trransition areas between Onshore /Offshore. How uncertain is it and are there any plans to improve it?</p>	<p>Yes there is a somewhat larger uncertainty in areas with strong gradients in particular coastal areas – but this is common to all models. A part of the reason is that land and sea values are predicted using different models, however, they need to consistent join at the coastline, which has required the additional development of a ‘transition’ model for handling this (part of DTU’s work).</p>