

## Milestone report: CM3

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**Date and version:** 2021.06.09 (v1.0)  
**Work Package:** WP 4 – ‘Demonstration and commercial exploitation’  
**Milestone name:** CM3 – ‘GASP concept demonstrated on commercial turbine response model including load margins’

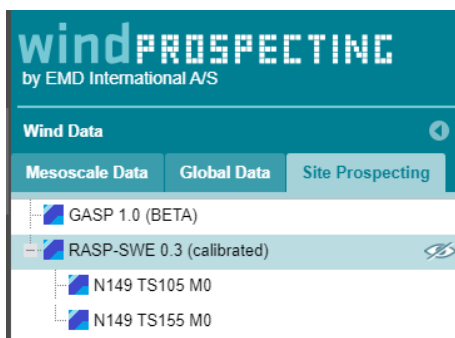
**Milestone status:** **Completed**

### Milestone description

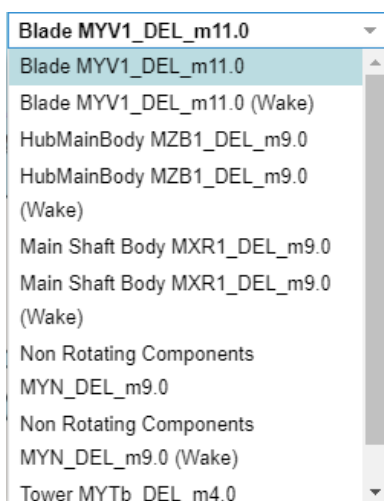
Commercial Milestone 3 (CM3) covers demonstration of the application of the GASP concept to a commercial turbine load model. Based on talks with the commercial partner Nordex, it was decided to demonstrate the concept for the high accuracy commercial dataset calibrated for Sweden (RASP-SWE). So, in principle CM3 covers a ‘double’ commercial demonstration.

### Deliverables and outcomes

The specific Nordex data layers have been generated for the 4.5MW Nordex turbine model N149 for the two tower heights h=105m and h=155m. These data layers are calculated based on a load response model of the turbines provide to EMD by Nordex and can be chosen as a dataset in windprospecting.com for the user-logins which are granted access.



The resulting datasets for the turbines may be visualized in a spatial view for the omnidirectional parameters, such as the resulting component/sensor load indices with and without wake-effects.





Finally, the results can also be viewed as point-results with load indices for all component/sensors either with or without wake-effects.

**GASP: Point Data (N59.245, W13.853)**

Resource | Siting / Fatigue | Siting / Extreme | Design Class | Minimum Spacing

**Expected turbine design class**  
 Response model: N149 TS105 M0  
 Include wake effects (5RD/3RD)

**Extreme wind suitability (ULS)**

S  
**OK**

**Fatigue suitability (FLS)**  
 Load index and suitability (OK=green)

| Component | Sensor    | Wöhler | Load Index |
|-----------|-----------|--------|------------|
| Blade     | BirMy1    | 10     | 0.7851966  |
| Tower     | TwbMy     | 4      | 0.7833786  |
| Nacelle   | YawMy     | 4      | 0.78896177 |
| Shaft     | LSSMx-LDD | 6      | 0.87720215 |

Feed-back meeting with Nordex is scheduled end of June after a trial period of several weeks.