

Are you operating wind turbines with active wind sector management? Do you know the precise orientation of all your turbines at any given time?

With the **Geovane Turbine** you, the windfarm operator, now have access to **True North orientation** of your individual wind turbines. **Live data. Every day. All year.**

## IMMEDIATE BENEFITS WITH GEOVANE TURBINE:

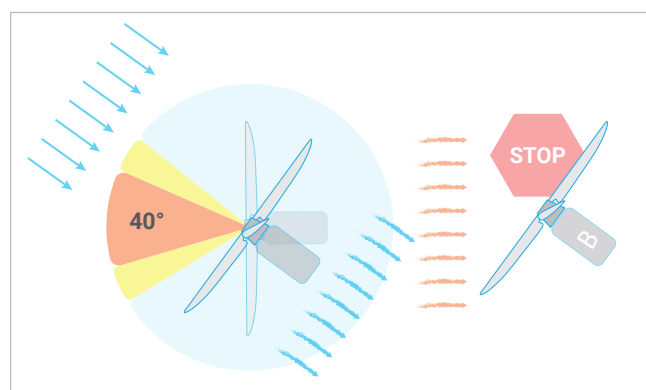
- ✓ Eliminates the need for expensive third-party alignment services
- ✓ Resolves issues related to alignment degradation over time
- ✓ Permits improved turbine-to-turbine performance assessment
- ✓ Permits improved wake control
- ✓ Permits improved wind sector management
- ✓ Same True North reference point for all wind turbines

## NO TRUE NORTH ALIGNMENT

Wind turbine misalignment and alignment degradation during the operational lifetime of a wind turbine are both common issues that wind farm operators battle with.

Since the individual turbines do not have a common reference point, wind farm operators try to solve this issue by performing periodic alignment of wind turbines (either via manual onsite alignment or by using third-party services).

However, given the nature of this misalignment, these periodic alignment corrections can be an expensive and unfortunately only temporary solution to the problem.



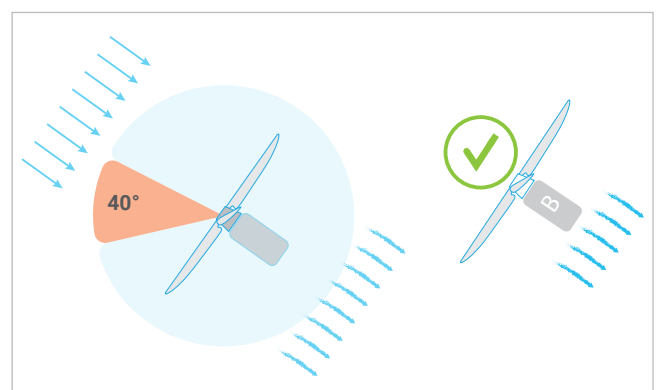
Situation without Geovane Turbine

## TRUE NORTH ALIGNMENT WITH GEOVANE

Geovane Wind Turbine, a unique solution that now gives you, the wind farm operator, access to **live True North orientation** of your individual wind turbines!

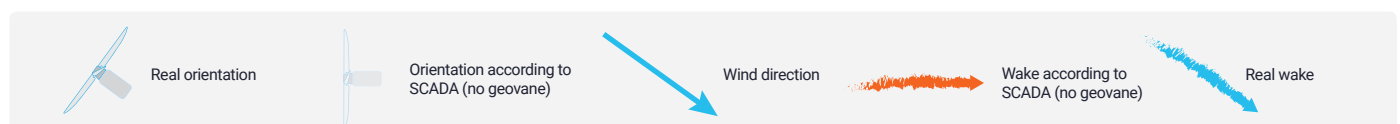
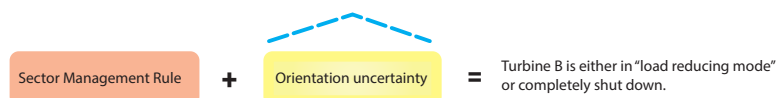
Once installed on the turbine, the Geovane Wind Turbine will provide live data via RS-485 to the (e.g. SCADA system) and enable you as the wind farm operator to get **instant True North alignment data from individual wind turbines**.

With the Geovane Wind Turbine installed, the true orientation of the turbine is known any day, all year. In this example turbine B is therefore not in "load reducing mode / shut down".



Situation with Geovane Turbine

This uncertainty is removed with the Geovane Wind Turbine





### Geovane Wind Turbine

Highly accurate and consistent True North data directly to you, the wind farm operator. No moving parts and maintenance free. Direct data feed via RS-485. Every day. All year.

With the Geovane Wind Turbine you can now precisely determine the true orientation of every single wind turbine in your wind farms.

### How it works

The Geovane Wind Turbine is equipped with 16 high-resolution opto-electronic sensors composed of 2048 light-sensing pixels for accurately measuring True North using the position of the sun.

Once installed on the turbine, the Geovane Wind Turbine will provide live data to the (e.g. SCADA system) and enable you as the wind farm operator to get instant True North alignment data from individual wind turbines.



Alignment collar



### Line it up!

With the included laser installation tool and alignment collar, the Geovane Wind Turbine is initially lined up with the turbine nacelle in the back of the wind turbine, together with the rest of the turbine control sensors.

See the installation guide on  
<https://www.kintech-engineering.com/geovane-wind-turbine/>