Bladed - Zero Blade Deflection with Steady Wind and Yaw

Zero Blade Deflection with Steady Wind and Yaw

We will use the zero blade deflection model to examine the effect of turbine yaw angle on the generated power. Please complete the zero blade deflection tutorial here if you have not done so.

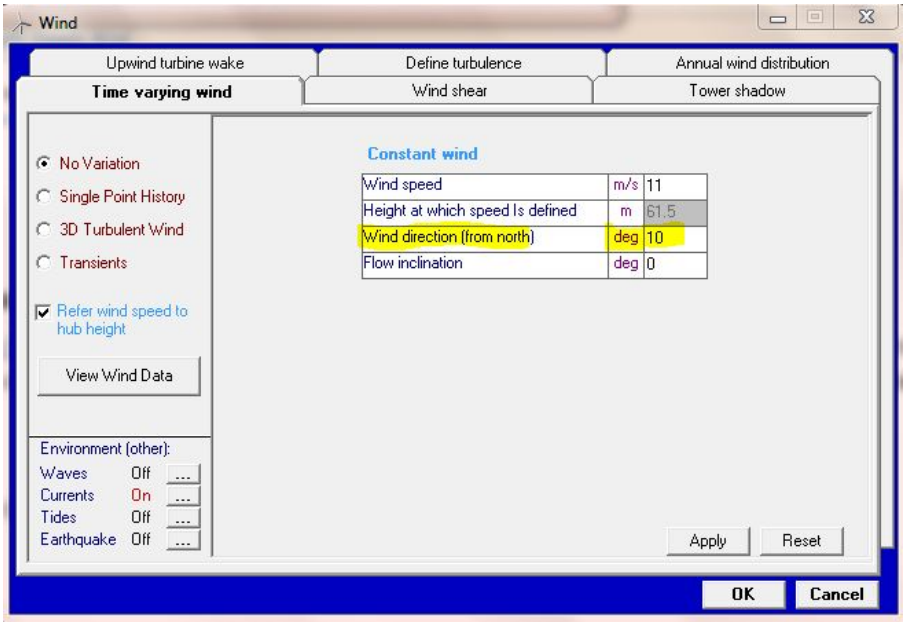
Setup

Launch GH Bladed and open the zero blade deflection project. There are a few ways to simulate the yaw angle and the simplest way is to edit the wind direction. In GH Bladed, the wind direction is taken as coming from the north, and the turbine is assumed to face North (0 degrees). Thus, setting the wind direction at an angle is essentially the same as setting the wind turbine at an yaw angle.

Click on the wind icon 

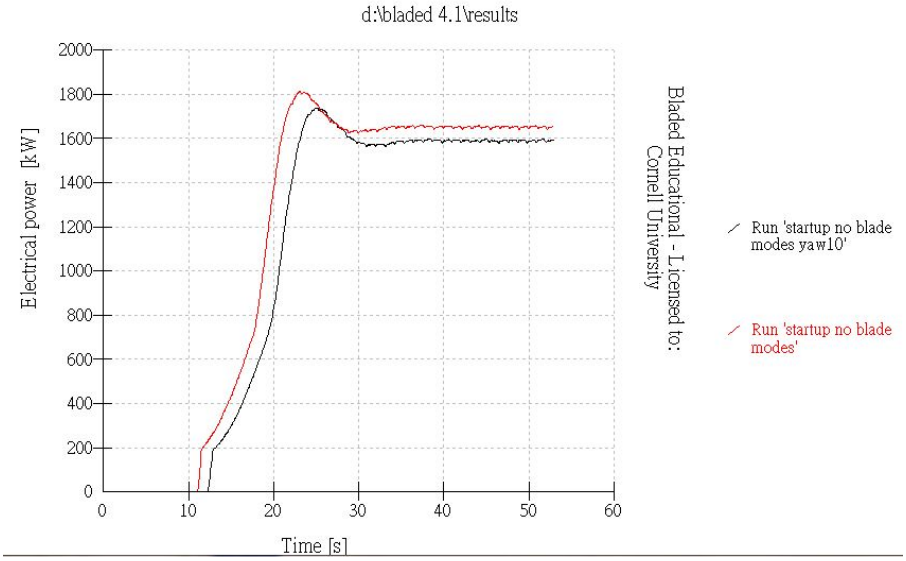
to edit the wind direction.

Change the wind direction to ***10 degrees***.



Result

We can expect a reduction in power because the wind turbine's axis of rotation is not aligned with the wind direction.



Since we did not change the setting in modal analysis, we can expect zero blade deflection.