



Powel Wind Power - Wind power forecasting

Improve your wind power forecasts with use of Powel Wind Power.

Powel Wind Power calculates the wind power forecasts for a wind park with use of forecasted wind speed and wind direction. The model is calibrated based on total measured production, corrected for historical revisions and other events, and average wind speed for the wind park.

The main challenge in forecasting wind power production is the uncertainty in the weather forecast for wind speed and wind direction. The model corrects for any systematic errors between the forecasted wind speed and measured wind speed, and uses the forecasted wind direction to adjust the forecasted wind speed. You can use weather forecast from different 3rd party vendors and compare the results.

Powel Wind Power is a part of the Powel Smart Energy Portfolio and is easy to set up and operate from our process oriented interface, Nimbus. You can update your wind power forecast whenever new weather forecasts are available and efficiently handle your imbalances in the intraday market or optimising between other energy sources.

Typical levels of accuracy as percentage of installed capacity for a wind park:

- Model error: app. 2% (MAE/year) with use of measured weather data
 - Total error: app. 10% (MAE/year) based on forecasted weather data
- MAE = Mean Absolute Error



Forecasting | Time Series Connection | Weather parameters

Short name: Wind Demo

Area name: Wind Demo

Area description: Demo of wind forecast calculation

Measured wind production
Wind_Demo_measured_Wind_Production

Measured wind speed
Wind_Demo_measured_Wind_Speed

Measured wind direction

Forecasted wind speed
Wind_Demo_forecasted_Wind_Speed

Forecasted wind direction
Wind_Demo_forecasted_Wind_Direction

Save

Wind sensitivity parameters				Wind directions corrections		
m/s	A	B		Degree	Wind cor.	Prod cor.
3.0	0.90508676441016	0.01378719		000	0.755	1.0
4.0	0.46156520650539	0.2512967		010	0.723	1.0
5.0	0.85192668428057	0.1014034		020	0.689	1.0
6.0	0.95753014876822	0.0463195		030	0.688	1.0
7.0	0.77041073165869	0.3977696		040	0.735	1.0
8.0	0.89038950338745	0.2517649		050	0.817	1.0
9.0	0.95589019191619	0.120073		060	0.879	1.0
10.0	0.92669680453778	0.2459086		070	0.919	1.0
11.0	0.95151130410767	0.1683566		080	1.087	1.0
12.0	0.95707174936721	0.158423		090	1.084	1.0
13.0	0.91248661032837	0.3341417		100	1.143	1.0
14.0	0.73024764178685	1.0225327		110	1.173	1.0
15.0	0.74180548307069	0.9628247		120	1.206	1.0
16.0	0.75607185691134	0.8705955		130	1.19	1.0
17.0	0.72013018463334	0.9602687		140	1.159	1.0
18.0	0.78744716411656	0.6869663		150	1.134	1.0
19.0	0.835929677029	0.4888394		160	1.082	1.0
20.0	0.74216026370402	0.721301		170	1.06	1.0
21.0	0.81184507301508	0.4911312		180	1.013	1.0
22.0	0.69593770781657	0.7268036		190	0.963	1.0
23.0	0.56335623723873	0.987861		200	0.949	1.0
24.0	0.17736694648719	1.6794132		210	0.943	1.0
25.0	0.39675225720248	1.1223363		220	0.942	1.0
26.0	-0.26821995149328	1.9897456		230	0.966	1.0
27.0	0.24919810678313	0.9310498		240	0.945	1.0
28.0	-0.3432288388692	0.7760338		250	0.936	1.0
29.0	-0.11527644778073	0.5082155		260	0.927	1.0
50.0	0.0	0.0		270	0.96	1.0
				280	0.923	1.0
				290	0.913	1.0

Measured wind / Forecasted wind: 1.53

Select "Time horizon" to activate the forecasting model

Time horizon for forecasting
Start date: 2016.01.25 00:00 | Select duration of forecast: 48 Hours (2 Days)

Input data:
 Presentation of forecasted wind speed
 Presentation of forecasted wind direction
 Presentation of measured production
 Presentation of measured wind
 Presentation of measured wind direction

Result:
 Presentation of forecasted wind production
 Presentation of forecasted wind speed(corrected)
 Presentation of forecasted wind production direction corrected

Save | Table | Forecast