



10th WindSim User Meeting

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WindSim Web Portal

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windsim

Agenda

- **WindSim Portal**
 - Power Forecasting
 - Create a WindFarm
 - Map overview & 3D viewer
 - Create a Forecasting Strategy
 - View Power Forecasting Results
 - Demo
- **Future of WindSim Portal**

Power Forecasting – Create WindFarm

Windsim

Main Navigation

- Home
- Documentation

Components

- Forecasting
 - WindFarms
 - Weather Forecast

Wind Farms
Manage the forecasting of your Wind Farm

Provide information about the Wind Farm

1 Information

2 Finish

Wind Farm name
My WindFarm

Wind Farm owner
WindSim

Notification Email
rul@windsim.com

← Previous

Next →

← Previous

Next →

Yes I agree, create WindFarm

By create a WindFarm you agree with the [terms](#).

Create new Wind Farm

10 records per page

Search all columns:

Name	Added Date	Owner	Responsibles	Status	Actions
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Wind Farm Information:

- Name
- Owner
- Responsible Email

After this step the Wind Farm is created and shown in the list

Power Forecasting – Map Overview

windsim

Main Navigation

- Home
- Documentation

Components

- Forecasting
- Wind Farms
- Weather Forecast

Wind Farms
Manage the forecasting of your Wind Farm

See information about your Wind Farms

Show Turbine name: OFF

Turbine Information - BETA

Name: wecs27
Manufacturer: PSI-SWT-23-108
Model: Type1
Rotor Diameter: 108
Hub Height: 80
Altitude: 0

Santalsabel_CFD:

Santalsabel_NN:

Power forecasting per turbine

- Click in the turbine to see the details

List of all turbines in the Wind Farm

Power Forecasting – 3D Viewer

3D view of the park

Select the Wind Farm to see the 3D

Part count: 33
Build: 28578 - node.js version: v0.10.35

Number of Parts: 33
Number of Elements: 163113
Number of Nodes: 173261

Power Forecasting – Create a Forecasting Strategy

1 Type Select the Type of Forecasting Strategy

2 Setup Define the Setup information.

3 Operational Define the Operational information.

4 Finish Conclude the process.

Type of new Strategy:

- ANN WIND-POWER
- ANN ONLINE
- ANN WIND-WIND, CFD, Wake
- CFD, Wake

Observed P

Longitude = E 0° 0' 0.000"
 Elevation = 0 m
 Calm threshold = 0 m/s

Time stamps indicate the beginning of the time step.

Date/Time	P_001	P_002	P_003	P_ALL
2006-04-28 00:00	260.7	258.1	261.0	779.8
2006-04-28 01:00	71.5	70.2	71.7	213.3
2006-04-28 02:00	0.0	0.0	0.0	0.0
2006-04-28 03:00	0.0	0.0	0.0	0.0
2006-04-28 04:00	0.0	0.0	0.0	0.0
2006-04-28 05:00	0.0	0.0	0.0	0.0
2006-04-28 06:00	0.0	0.0	0.0	0.0
2006-04-28 07:00	0.0	0.0	0.0	0.0
2006-04-28 08:00	0.0	0.0	0.0	0.0
2006-04-28 09:00	0.0	0.0	0.0	0.0
2006-04-28 10:00	0.0	0.0	0.0	0.0
2006-04-28 11:00	0.0	0.0	0.0	0.0

Forecasted W

Forecasted power

Forecast

6.0 98.3 294.5

Setup phase

Operational phase

Different types of strategies, depends on your needs and available data

Example file format

Visual strategy steps for good understanding

Power Forecasting – Create a Forecasting Strategy

The screenshot displays the WindSim web application interface. The top navigation bar includes the 'windsim' logo and a menu. The main content area is titled 'WindFarms → Strategies' and shows the configuration for a windfarm named 'Santalsabel_WS'. The 'Operational' step is active, showing two 'File Upload' sections for 'Observed power data (Lst)' and 'Forecast Time Series (Lst/Int)'. Below these are four progress steps: 'Type', 'Setup', 'Operational', and 'Finish'. The 'Operational definition' section is expanded, showing 'Source file settings' (Source File Name: Latest file created, Weather Forecasting TimeZone: UTC-2:00), 'Result file settings' (Result File Name: power.lst, Appended UTC Date: ON, Power Forecasting TimeZone: UTC-2:00), and 'FTP credentials and Folder' (Server URL: ftp.domain.com, Server Port: 21, Username: username, Password: password, Use SSL: OFF, Folder: /folder/inside/My/Top or /). A 'Do forecasting for:' dropdown is set to '#WindPark'. There are also 'Test your settings' buttons for both source and result file settings.

Easy upload & validation control of data

Settings where you specified the location of Wind Forecasted data

Settings where you specify the destination of Power Forecast

Times during the day you want the forecasting to run

Power Forecasting – View Results



Power Forecasting API Settings

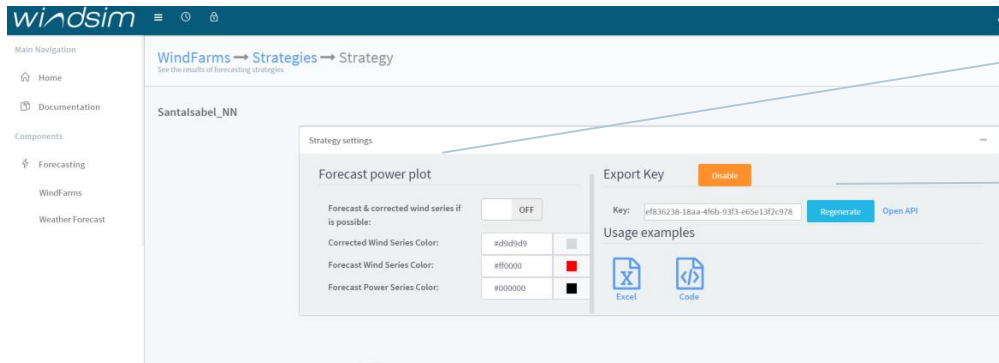
List of last Runs

Possibility to download all files generated

Static plot to show Wind Forecasted, Power generated and accumulated energy per day

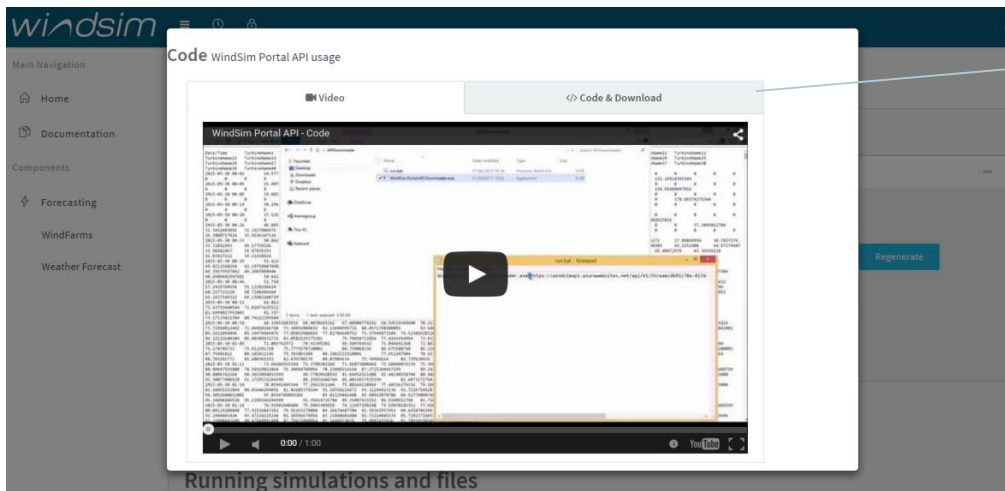
Interactive Power and Wind plots for a better perspective per day

Power Forecasting – View Results



Configuration of Static Plot colors and data series

API activation with usage examples



API usage examples with videos and detailed information

Power Forecasting – View Results

Running simulations and files

Running Setup

Simulations list

Display 5 records

Show Power Plot: ON Show Wind Plot: OFF

Power Units plot results: MW WindFarm capacity percentage: 100 %

Search all columns:

Ran Date	Time Ago	Status	Action
2015-06-17T10:10:14.783+00:00	about 58 minutes ago	Completed	
2015-06-17T06:47:50.513+00:00	about 4 hours ago	Completed	
2015-06-16T10:48:19.097+00:00	yesterday	Completed	
2015-06-16T04:10:14.13+00:00	yesterday	Completed	

Running tab Setup tab

Interactive plot definitions, notice the Wind Farm capacity percentage

Power Forecasting – Demo

Demo

Power Forecasting – Keep in mind

- See the current forecasted Power per turbine in a Map
- Create different Forecasting Strategies based upon available data
- Receive the results by FTP, Email, API or directly in the Portal
- Easy integration with your software or Excel using the API

Future of WindSim Portal

Future - Plan

... the plan is only valid until it changes ...

Future of WindSim Portal – Create WindSim Project

The screenshot shows the WindSim Portal interface. At the top, there is a navigation bar with the 'windsim' logo, a user greeting 'Hello rsantos.mails@gmail.com', and a 'Log off' link. Below the navigation bar are links for 'Home', 'Wind Simulations', 'Real Time', 'About', and 'Contact'. The main content area is titled 'Wind Simulations. Define your Wind Park.' and contains a form for 'Add Turbines & Climatologies'. The form includes fields for Turbine Type (with a 'New' button), Turbine Height, Rotor Diameter, Coordinate X, and Coordinate Y. There are also checkboxes for 'Climatology is Virtual' and 'Import WindData (.tw5)' (with a 'Browse...' button), and another set of fields for 'Climatology Height', 'Coordinate X', and 'Coordinate Y'. 'Add' buttons are present at the bottom of the form sections. Below the form is a table with columns for Type, Height, Rotor Diameter, Coordinate X, and Coordinate Y. The table contains three rows of data for different turbine models. At the bottom of the page, there is a copyright notice: '© 2013 - WindSim Cloud Application'.

Wind Simulations. Define your Wind Park.

Add Turbines & Climatologies Previous Next

Turbine Type New Climatology is Virtual

Turbine Height Import WindData (.tw5) Browse...

Rotor Diameter Climatology Height

Coordinate X Coordinate X

Coordinate Y Coordinate Y

Add Add

Drag a column header and drop it here to group by that column

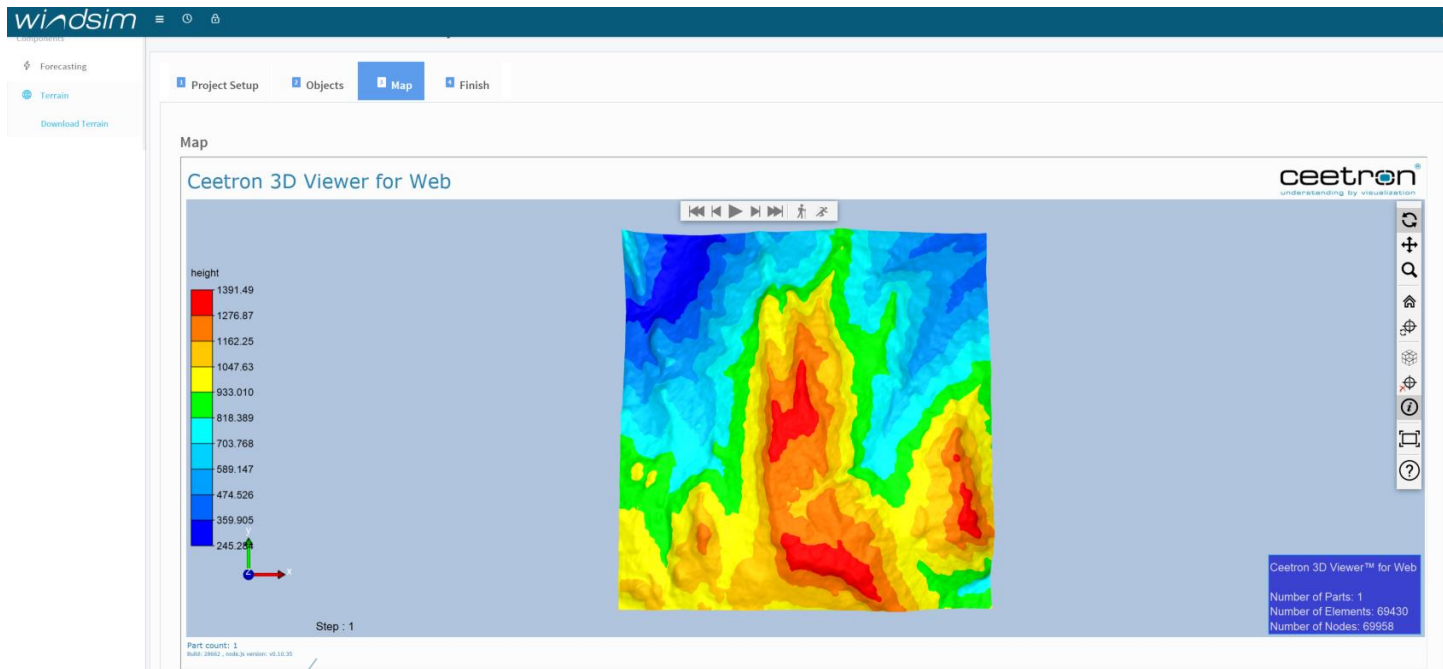
	Type	Height	Rotor Diameter	Coordinate X	Coordinate Y
	Vestas 89	90	80	1234567	1234567890
	Vestas 89	30	-	1234567	1234567890
	Vestas 80	80	70	1234567	1234567890

Page: 1 of 1 Go Page size: 3 Change Item 1 to 3 of 3

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Create a complete WindSim Project and choose if you want to run it locally or in WindSim Cloud

Future of WindSim Portal – Download Terrain Data



Possibility to download terrain data in .gws or .map format worldwide using the best Free Online DataSet for the specific region

Future of WindSim Portal – and more...

- Asset Management - possibility to plan when a turbine is unavailable
- Compare Power Forecasting Strategies
- See the progress of WindSim Queue in the Portal
- Run complete CFD WindSim Projects in the Portal
- Integrate a WindSim project with Forecasting automatically
- Weather Forecast Service using the API
-

Questions?

THANK YOU

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