



QUICK GUIDE TO SKETCHUP INTEGRATION TOOL

Purpose:

The Purpose of this quick guide is to show how to get started using the SketchUp Integration tool in windPRO. More detailed information is available in the draft [manual](#) or the [introduction video](#).

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1. REQUIREMENTS

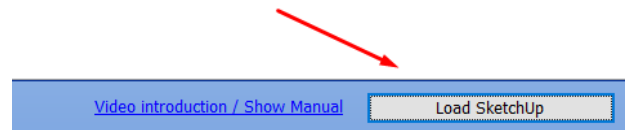
The tool requires a license to the SketchUp Integration Module

2. CREATING A 3D VERSION OF A WINDPRO PROJECT

Open the tool from the tool button:

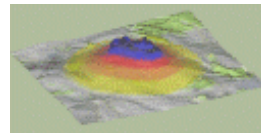


Then press the load SketchUp button:

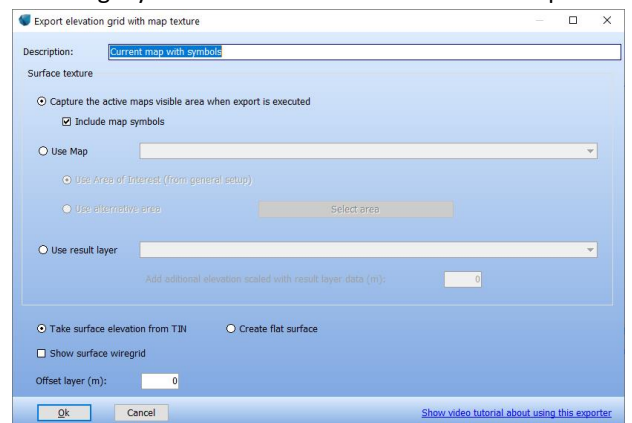


If SketchUp is not installed, then it can be downloaded from this link: [Download SketchUp](#). Read more in the [manual](#).

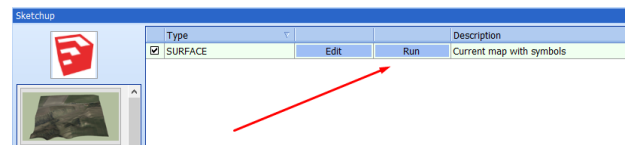
Click to create a surface exporter:



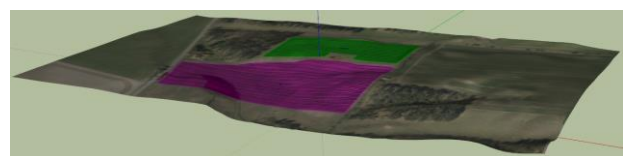
The default is to export the currently visible map, including symbols. Press ok to create the exporter:



The exporter then shows up in the list of created exporters. Arrange the map window as desired, and select what objects that should be visible, and then press the Run button:

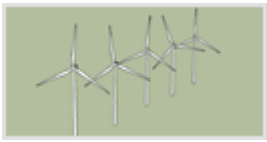


The surface is now created in SketchUp:



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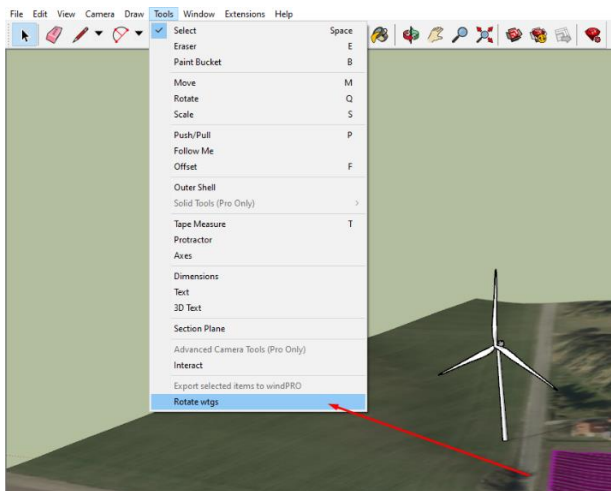
Now click to create a WTG exporter:



The default is to export all *visible* WTG's. Click Ok to create the exporter. Make sure the desired WTG's are visible, and then run the exporter:

Type			Description
<input checked="" type="checkbox"/> WTG	Edit	Run	All visible WTG objects - Heading = 180°
<input checked="" type="checkbox"/> SURFACE	Edit	Run	Current map with symbols

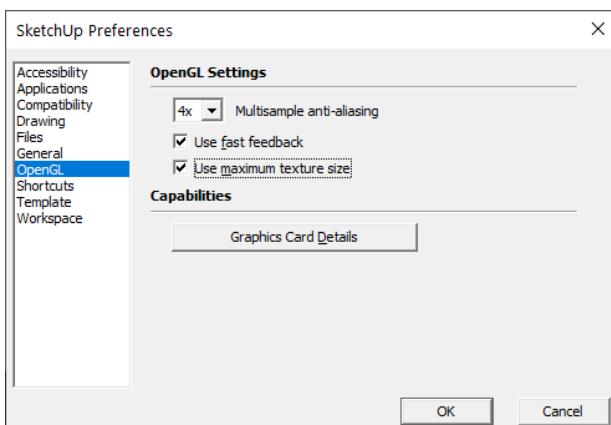
The WTG's is now created in SketchUp. Click "Rotate WTG's" in the menu:



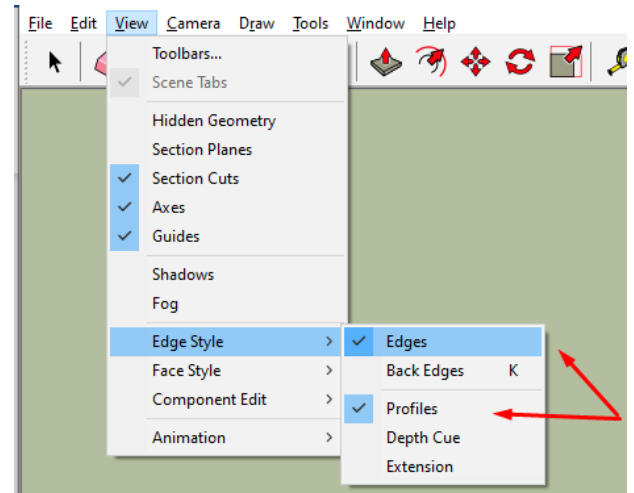
(Do not edit the 3D model while WTG's are rotating).

3. SKETCHUP TIPS






To set the image quality to high, go to the menu Window/Preferences, and select Use maximum texture size.



Change the look of WTGs or wire grid surfaces with the show or hide edges/profiles in the menu:



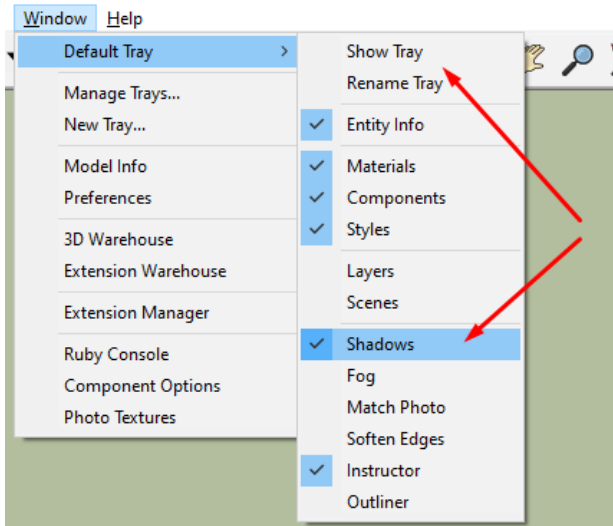
Important tools:

-  Use Orbit (O) to navigate in the model. Hold shift down while dragging to pan and double click to set rotation center.
-  Selection tool (space). Used to select elements, before moving/scaling/rotating.
-  Use Move (M) to reposition items. Hold ctrl to copy, press arrow up to only move/copy in vertical direction.
-  Use Rotate (Q) to rotate elements. Press arrow up to rotate around vertical axis.
-  Use Scale (S) to scale objects, or to exaggerate elevation.

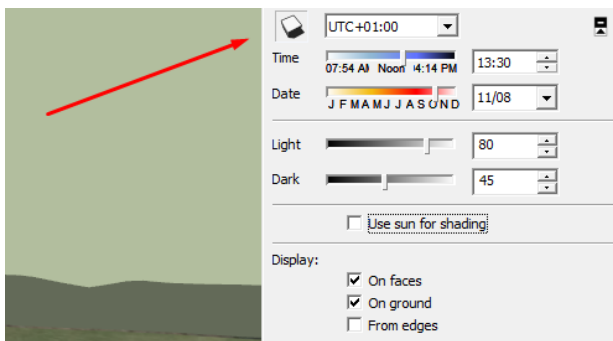
4. SHOWING WTG SHADOWS IN SKETCHUP

Make sure that the shadow setup is visible, and show the default tray:

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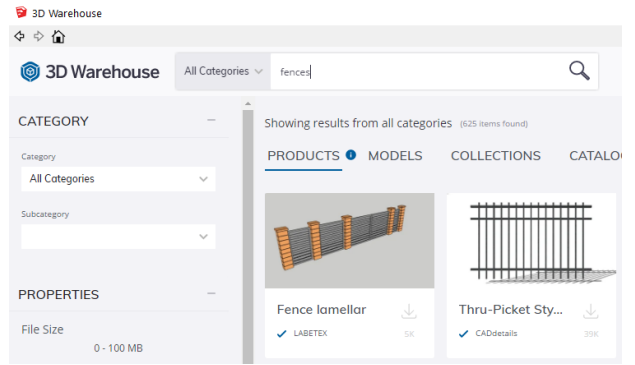


Use this button to activate shadows, and use the sliders to change the date and time:



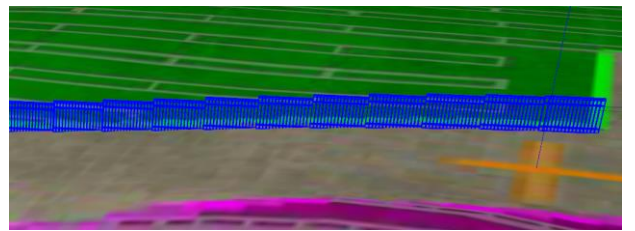
5. RENDER ELEMENTS FROM SKETCHUP IN WINDPRO PHOTOMONTAGE

SketchUp can import models from .dwg and many other formats, they can be created manually, or they can be imported from the 3D warehouse:

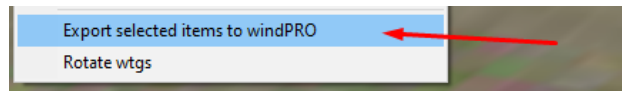


Make sure not to use too complex models, it can be painfully slow!

When model elements is placed correctly in SketchUp, they can be selected and then copied into windPRO. First select the objects:



Then select this Tool menu item:

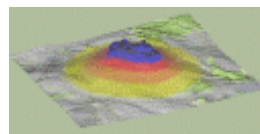


Then the selected items are exported to windPRO as a 3D object, and can be rendered in Photomontage:



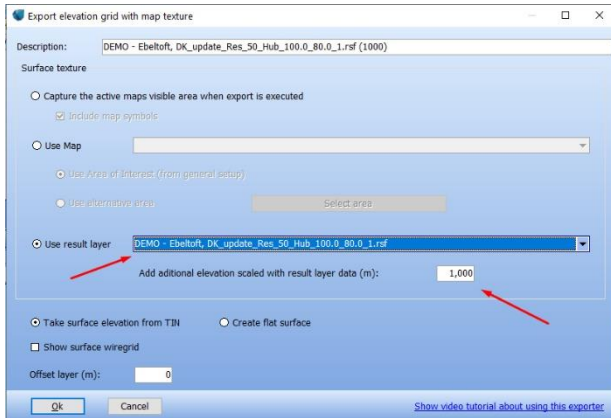
6. SHOWING A RESULT LAYER IN 3D IN GOOGLE EARTH

Click to create a surface exporter:

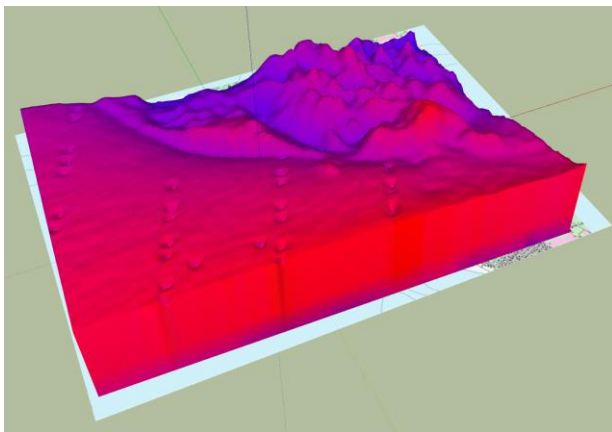


Select the result layer to export, and set the height that the data max value should be scaled to (the min value is scaled to 0):

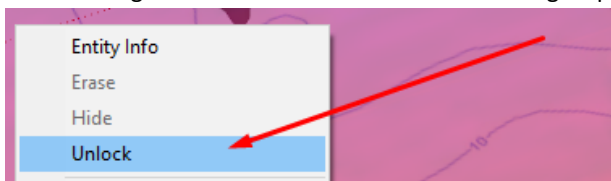
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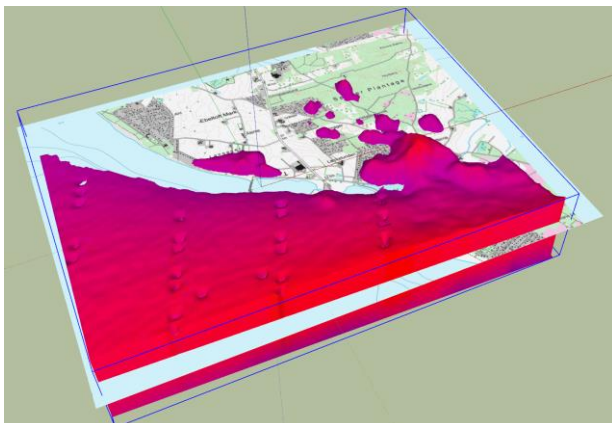
Run the exporter. The data is now shown in 3D, in this case scaled to 1000m height.



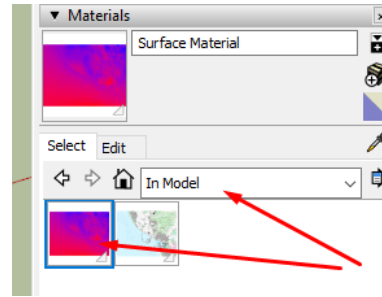
To move the data up/down: Select the data group, and use the right click menu to “un-lock” the group.



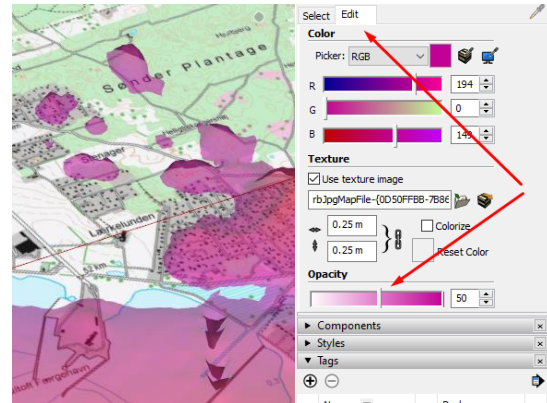
Select the move tool and click once anywhere, press the “arrow up” key and move the mouse until the data group is in the wanted position, and click again:



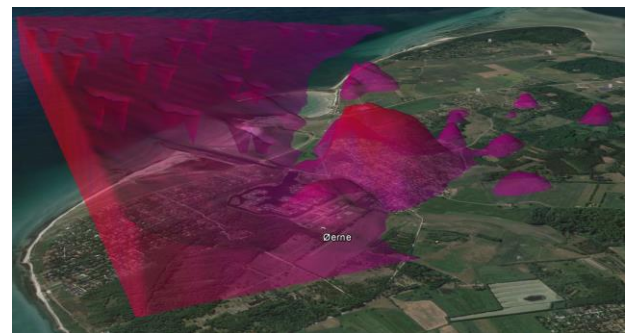
To make the data semi-transparent: Locate the data-group texture in *Materials* in the default tray:



Select the Edit tab, and change the opacity:



Export the model to .kmz to show the result data in Google Earth:

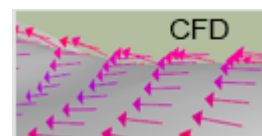


Result layer shown in Google Earth

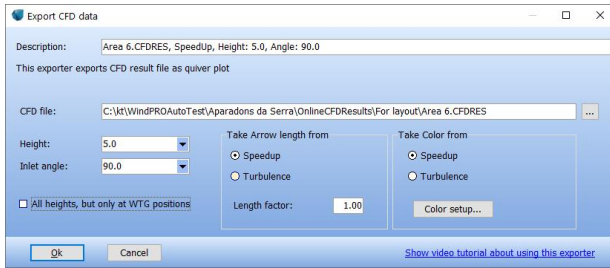
See section about exporting to Google Earth for more details.

7. SHOWING A CFD RESULT IN 3D

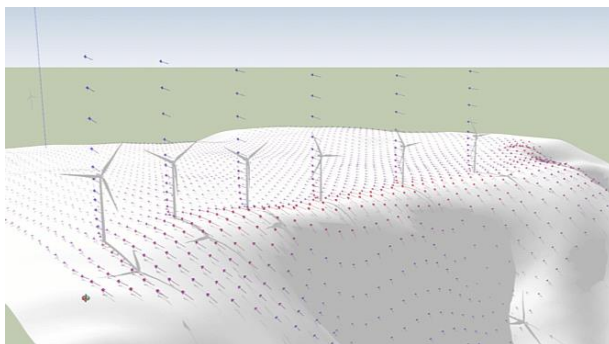
Click to create a CFD exporter:



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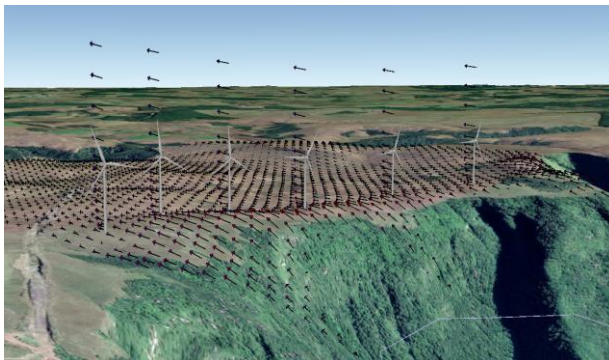


Select a .cfbres or a .flowres file, and select what data from the file to show. Data is shown as arrows, either in a grid or, if “All heights, but only at WTG positions” is selected, as a vertical row of arrows at the WTG positions. To export both, create and run two exporters. Click Ok, and run the exporter:



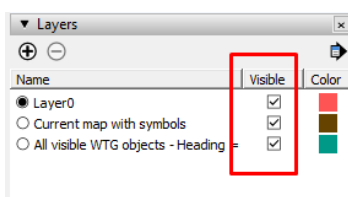
CFDResult file shown with blank map and WTGs

The result can then be exported to Google Earth format:

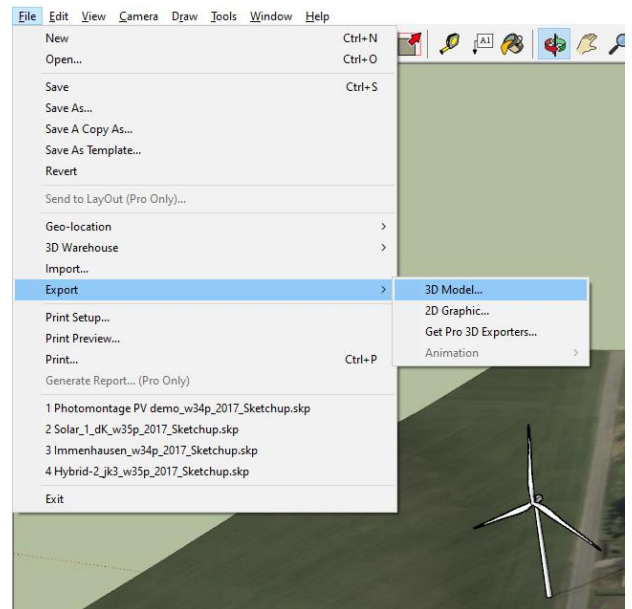


8. EXPORT TO GOOGLE EARTH

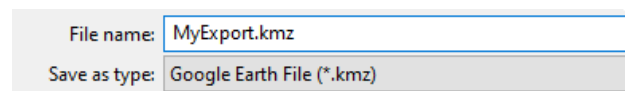
Use the Tags (Layers in pre 2020 SketchUp versions) to select what to export.



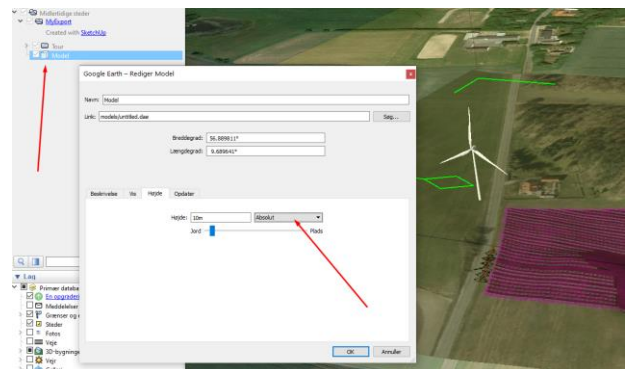
Select Export | 3D model in the menu:



Select filename and .kmz format



Double click the exported file in Windows Explorer to open it in Google Earth. In Google Earth, set the opened model height to “Absolute” in model properties:



Here is the WTG's and the windPRO map shown in Google Earth:

