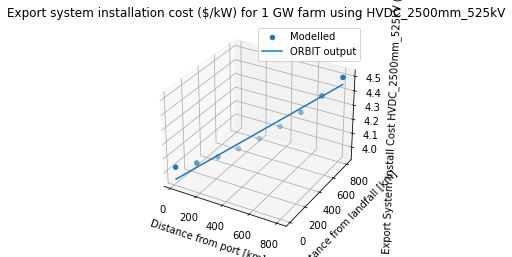
**HVDC (there are two.. one for 525kV and one for 320 kV):**

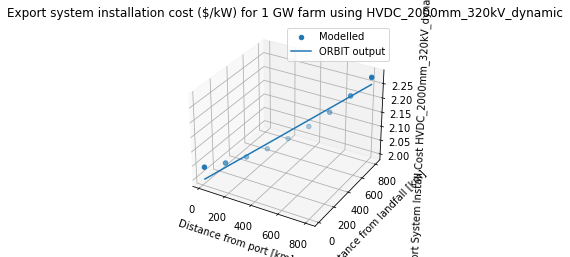
Export cable installation ($/kW) for HVDC\_2500mm\_525kV for a 1 GW farm = 7.161471763335986\*distance\*distance\_from\_landfall + 40324776.55775206

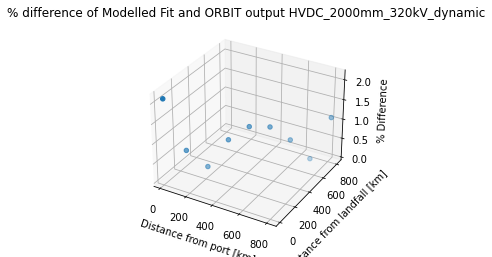
****

**Chart, scatter chart

Description automatically generated**

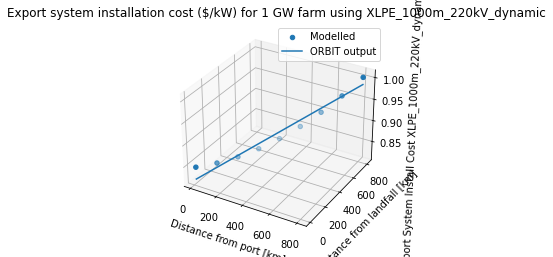
Export cable installation ($/kW) for HVDC\_2000mm\_320kV\_dynamic for a 1 GW farm = 3.5807358816679944\*distance\*distance\_from\_landfall + 20412092.57253386

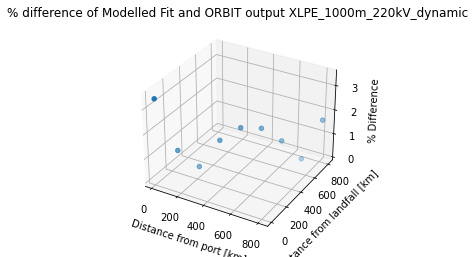




**HVAC**

Export cable installation ($/kW) for XLPE\_1000m\_220kV\_dynamic for a 1 GW farm = 23.871572544453286\*distance\*distance\_from\_landfall + 84708397.49227189





**Now we need to combine the above equations so that the HVAC is not used further than the same cutoff distance as the cable design module**

* First we have to determine the distance threshold where the cable design module designates HVAC vs HVDC
  + There are different threshold distances, depending on HVDC 320 kV vs. HVDC 525 kV.

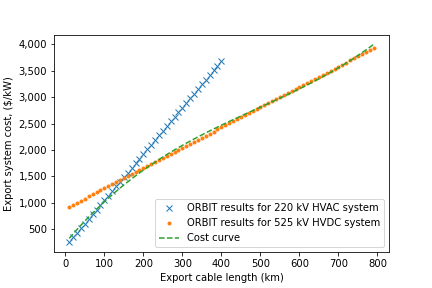
320kV: threshold distance is ~50 km (check in code)

Chart, line chart

Description automatically generated

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525kV: threshold distance is ~130km (check in code)



Make the 525kV combined equation first, using the 130km threshold: