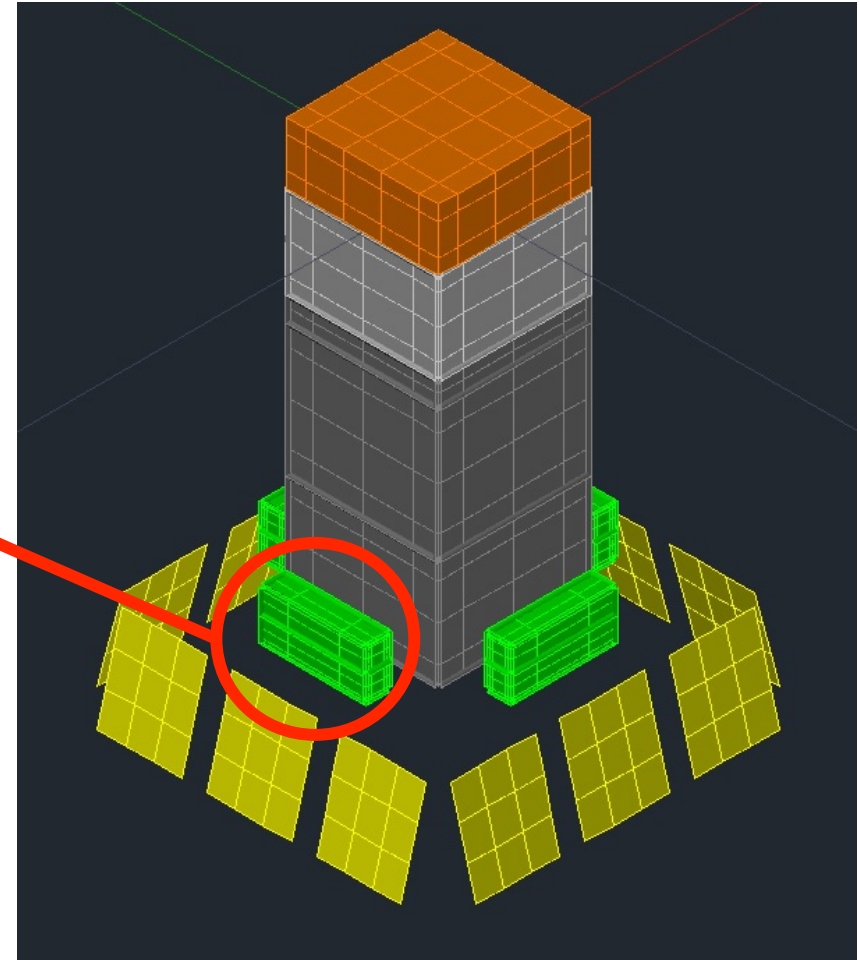
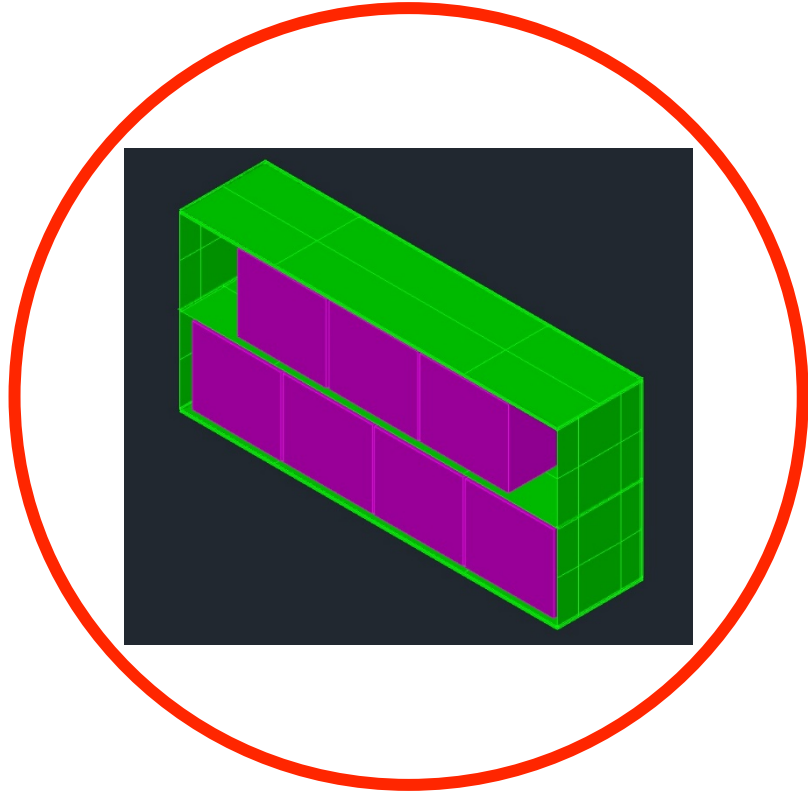


Thermal Model Advances

04 / 18 / 2016

Geometrical Model



**Double deck aluminium boxes and
8" thick styrofoam insulation**

Test Cases

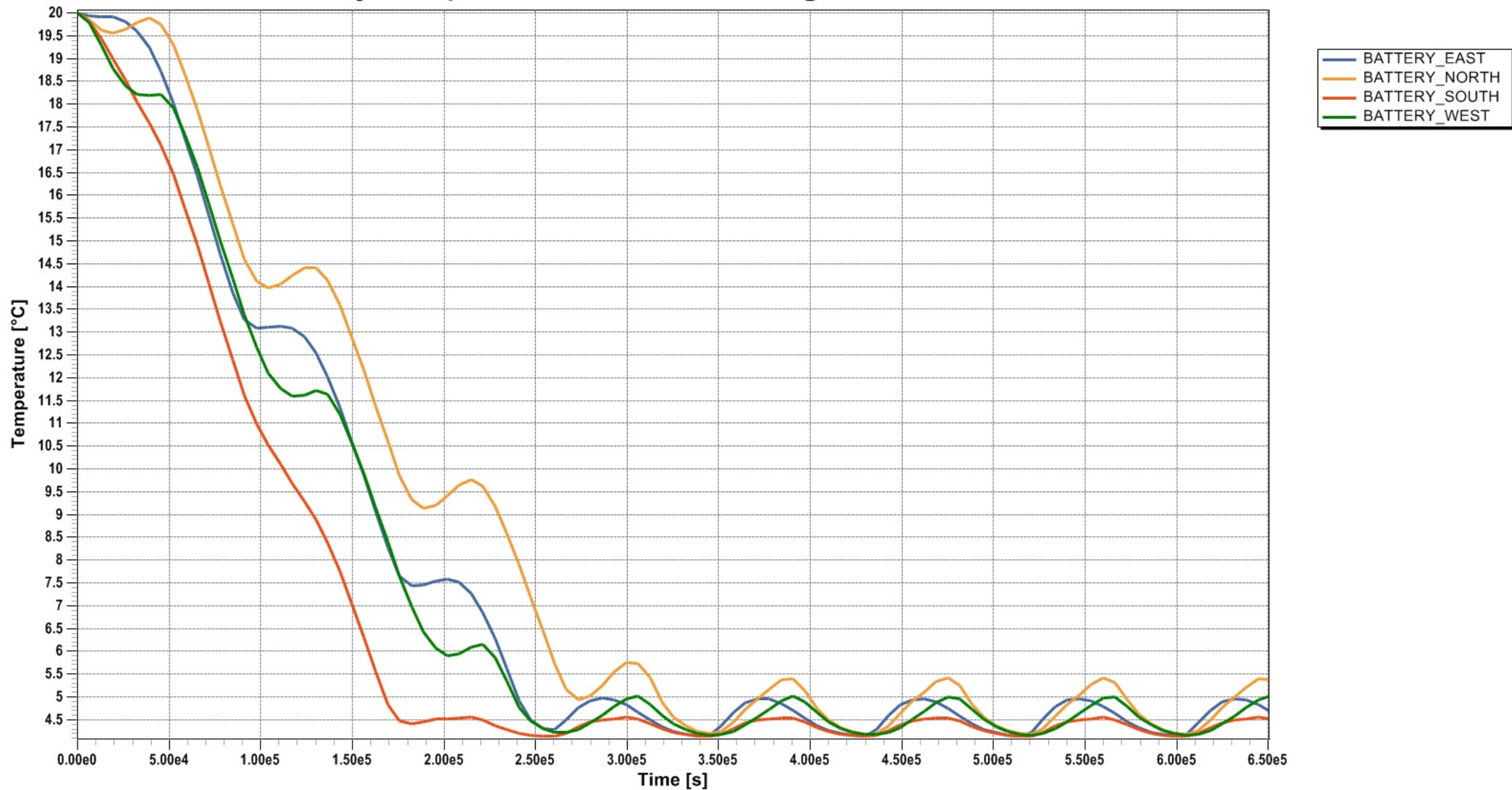
For both hot and cold cases, simulations using white and black coatings on the outer surfaces of the insulation foam were run.

The use of heaters was considered in order to keep batteries' temperatures above 0 °C.

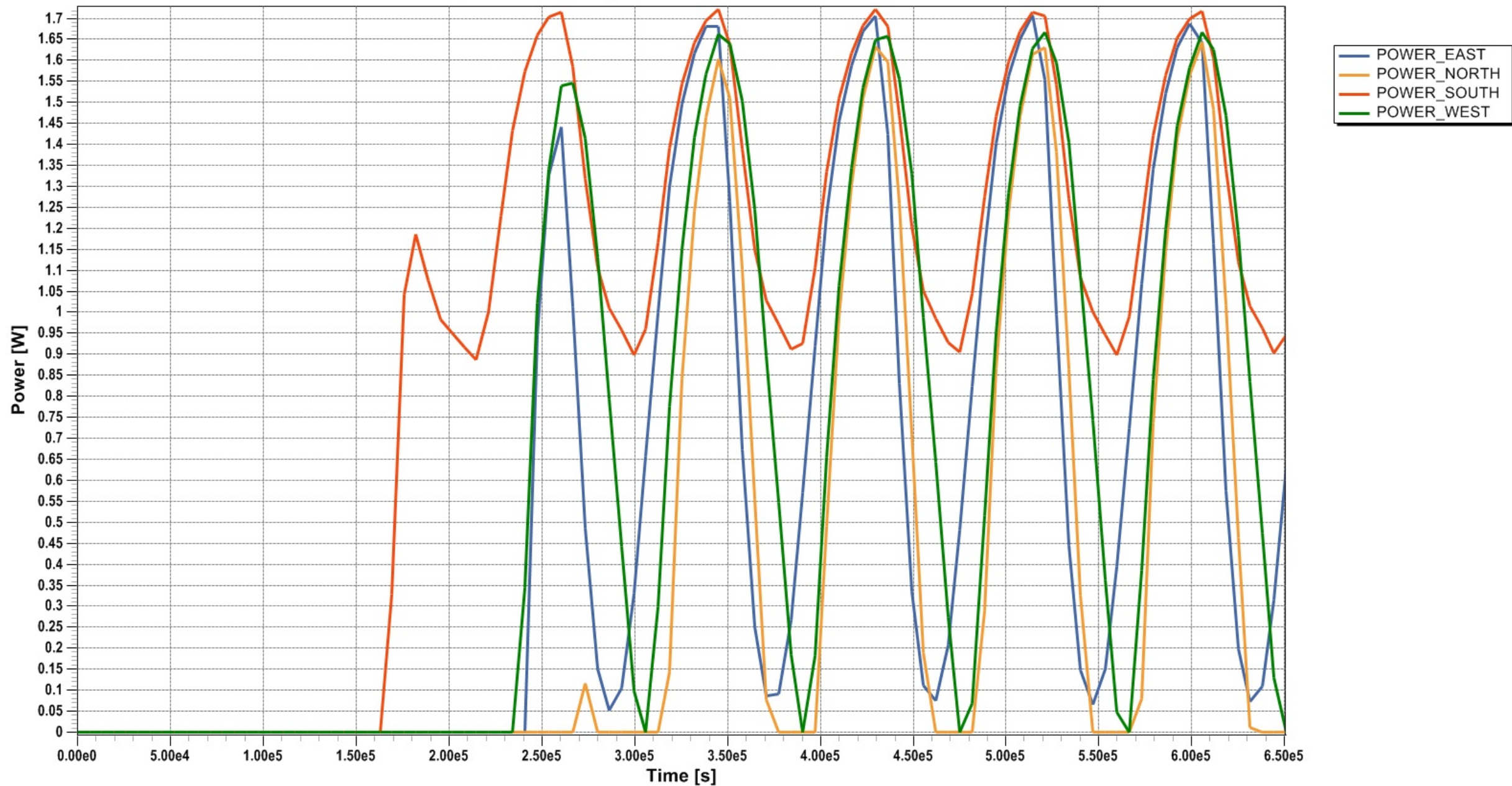
Temperature and power profiles for battery packs in each side of the gondola are shown.

White Coating

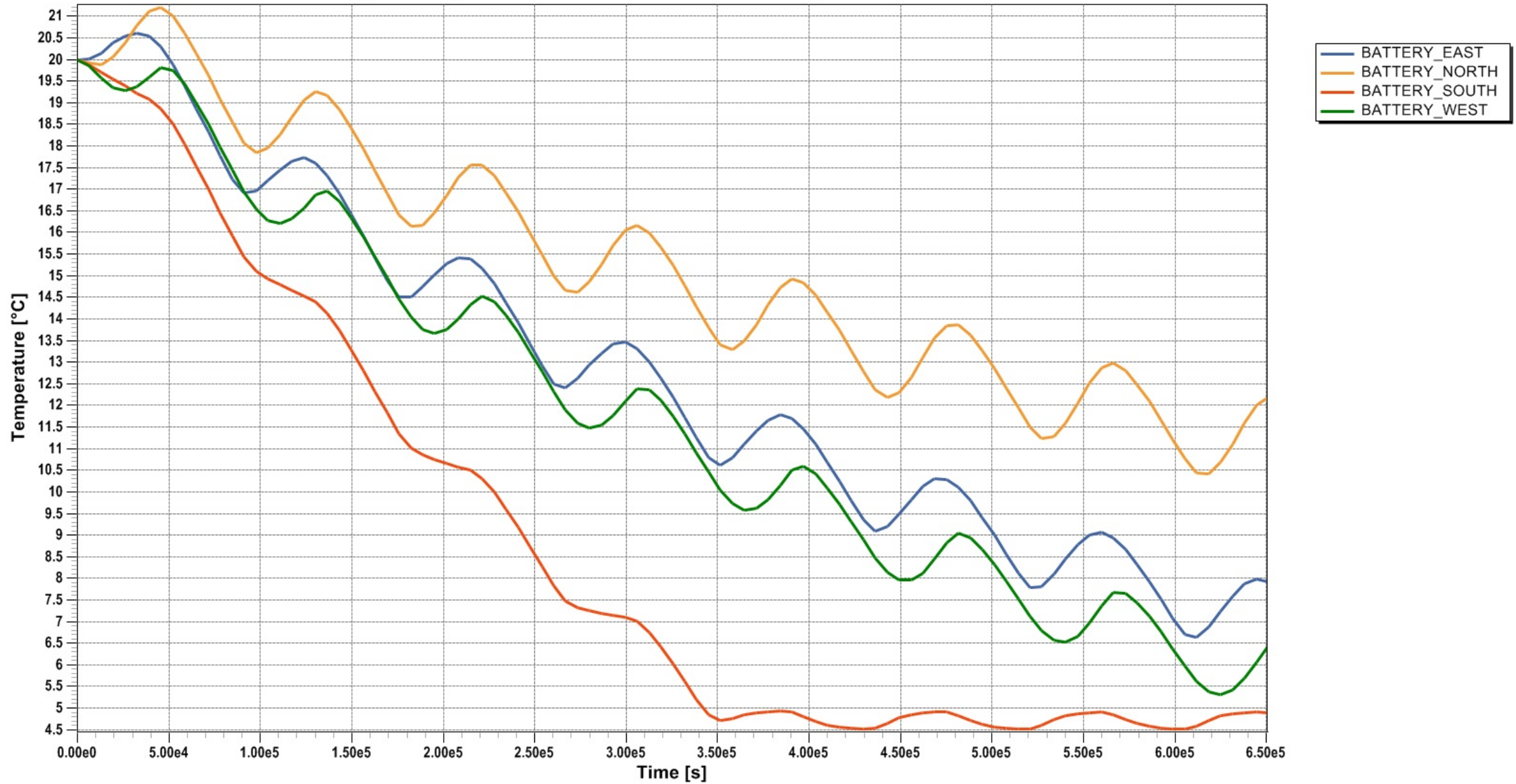
Battery Temperatures, White Coating, Cold Case



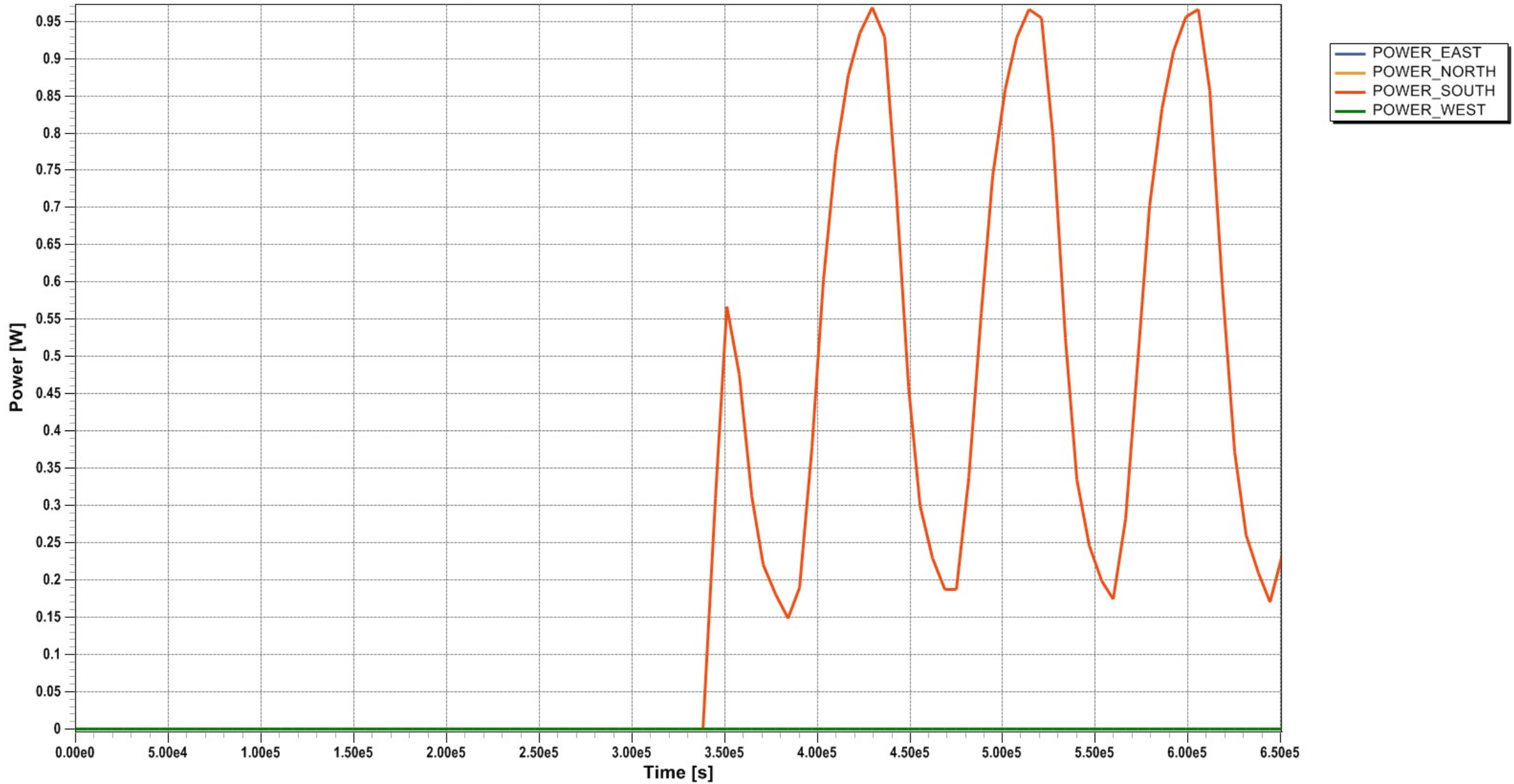
Heater Power per Battery, White Coating, Cold Case



Battery Temperatures, White Coating, Hot Case

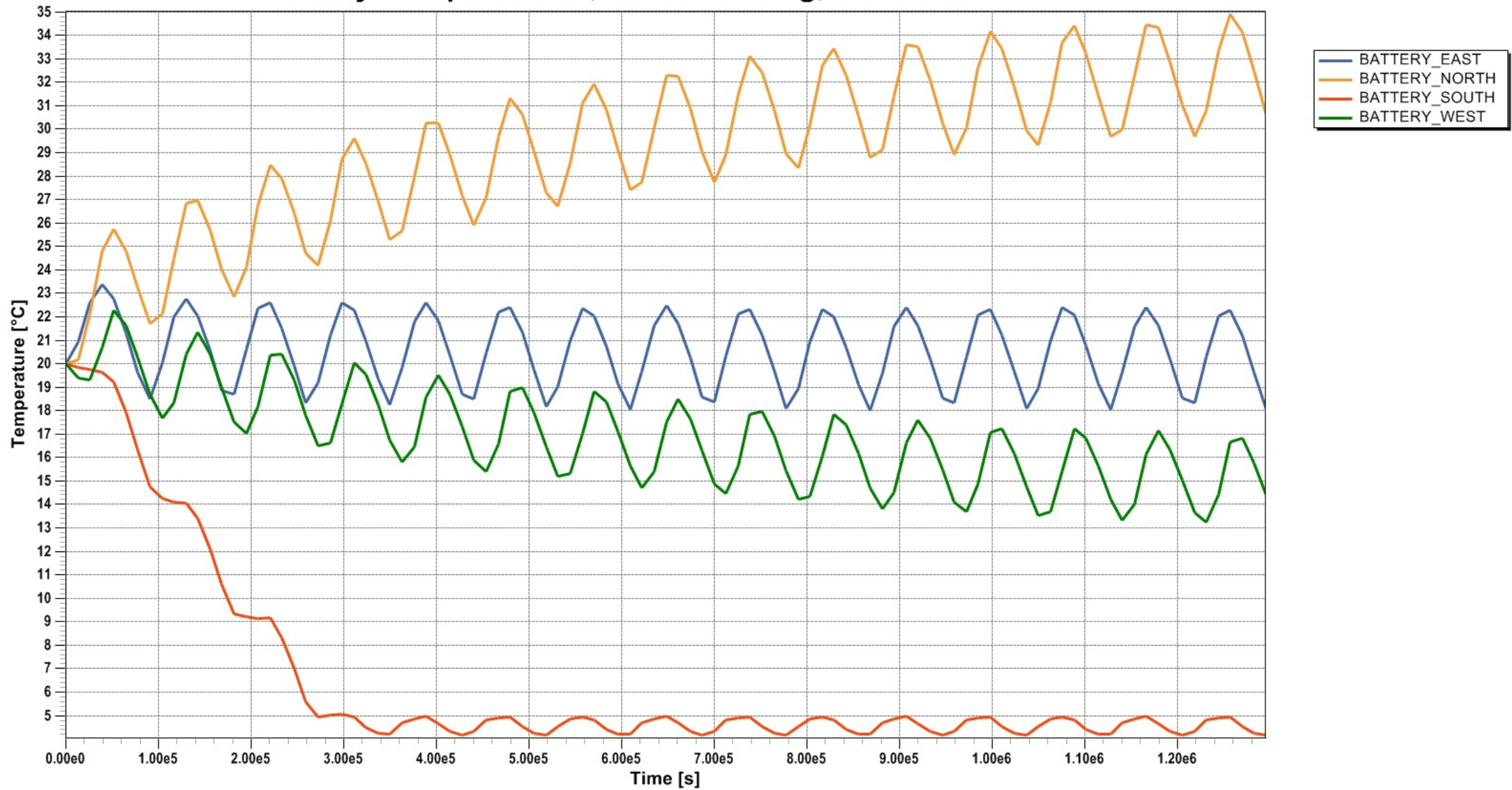


Heater Power per Battery, White Coating, Hot Case

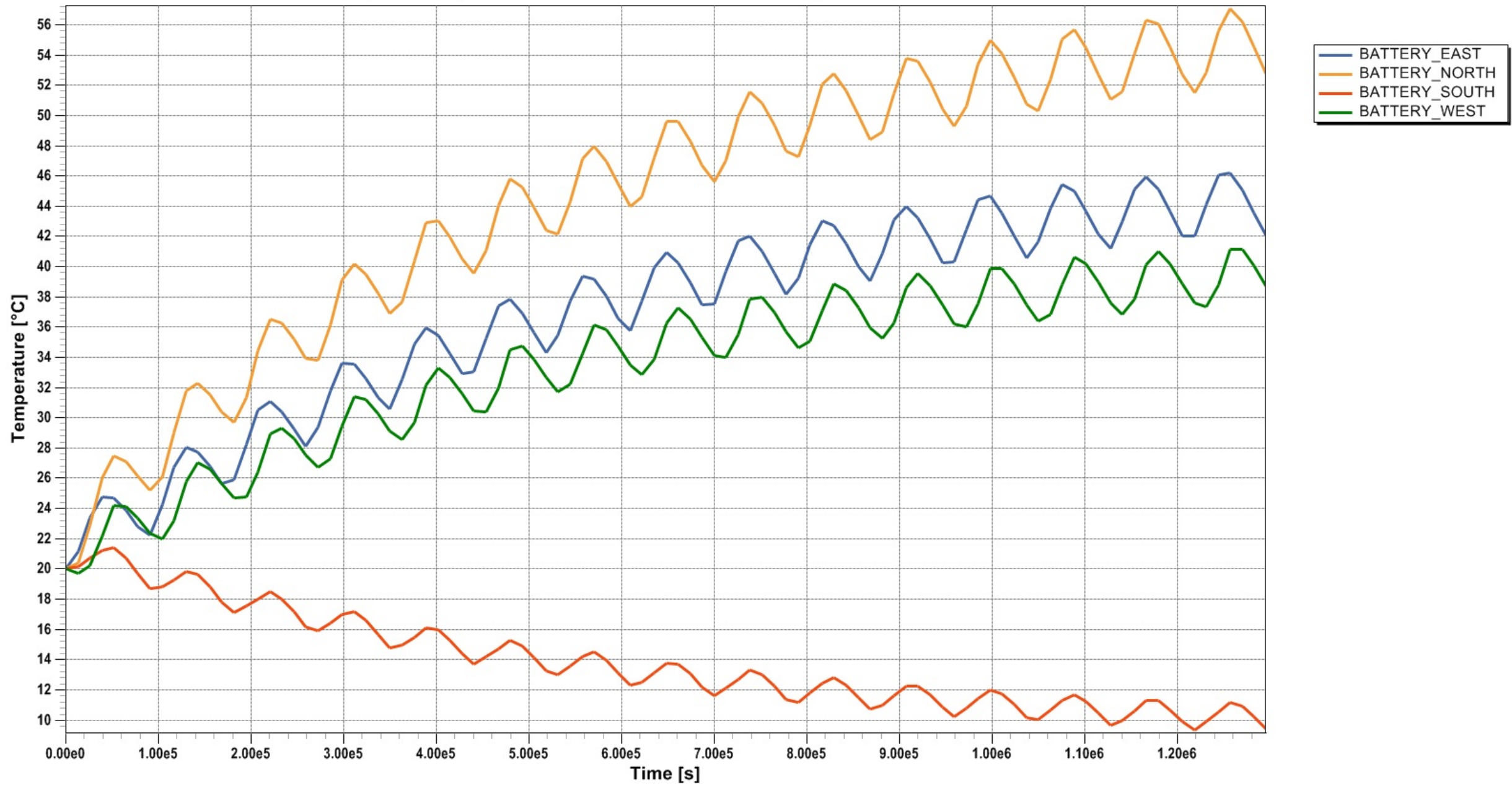


Black Coating

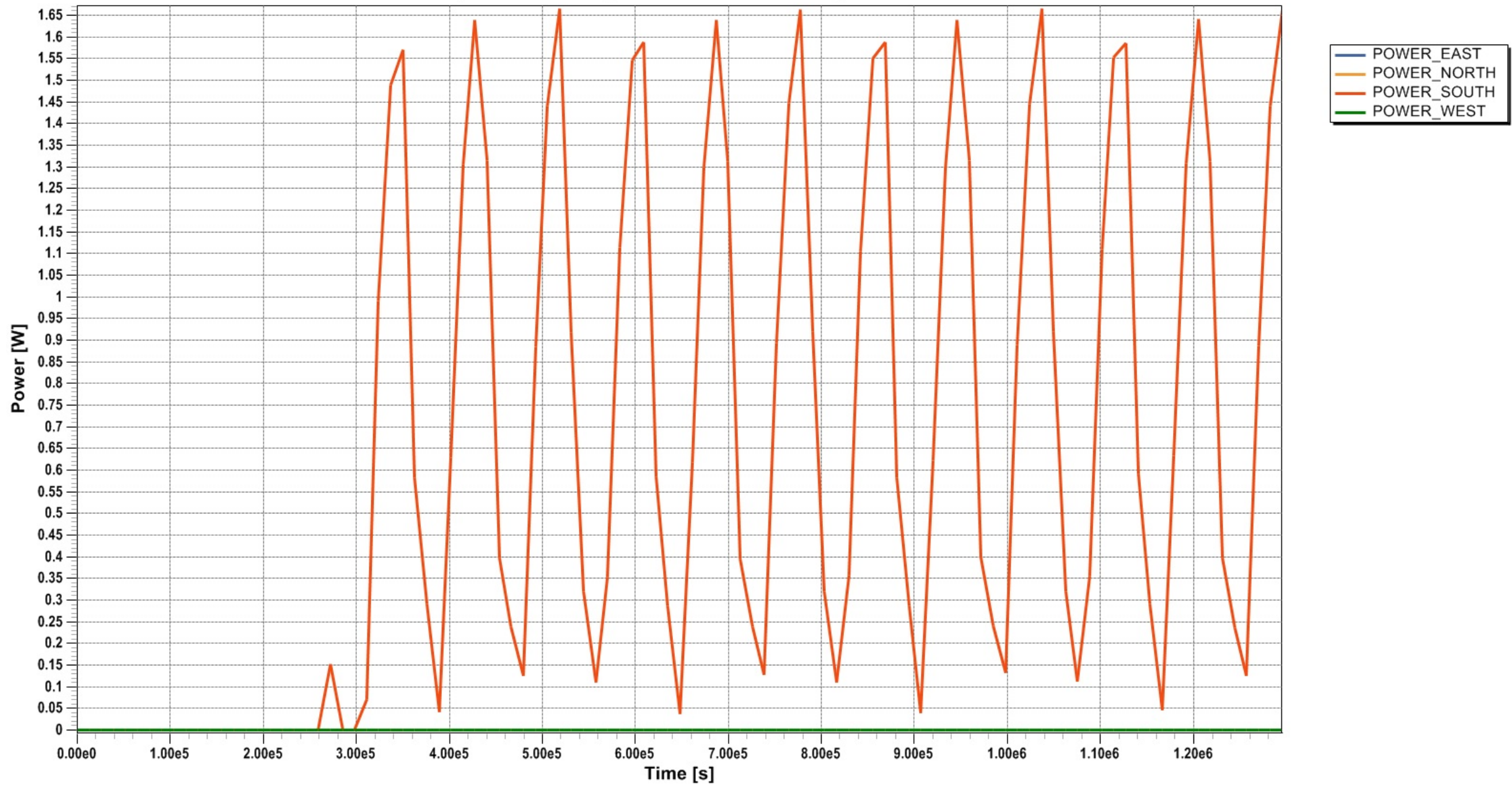
Battery Temperatures, Black Coating, Cold Case



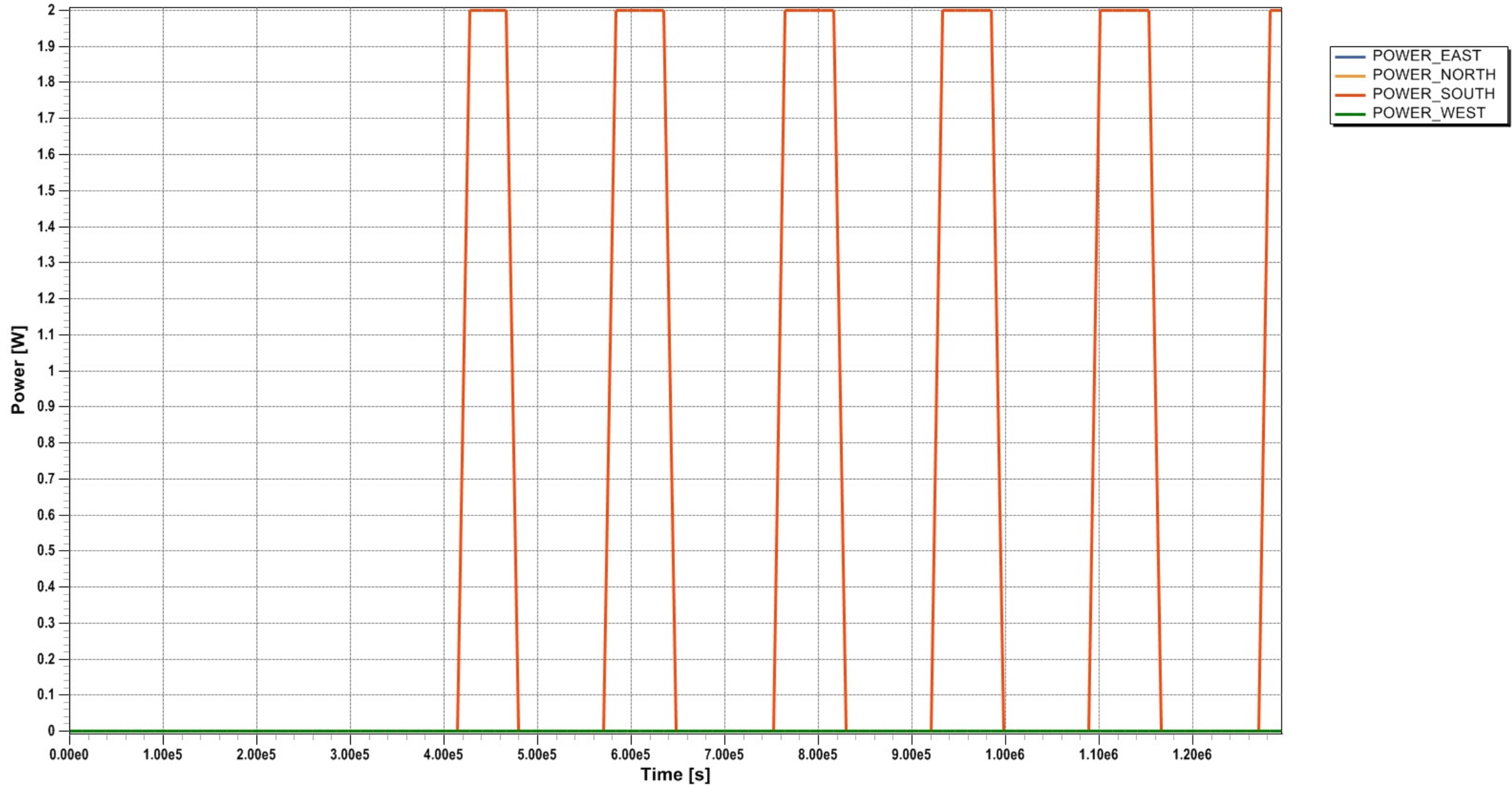
Battery Temperatures, Black Coating, Hot Case



Heater Power per Battery, Black Coating, Cold Case



On-Off Heater Power per Battery, Black Coating, Cold Case



On-Off Battery Temperatures, Black Coating, Cold Case

