Guidelines to run the simulation model.

1. Open the Simulink file: Total_system_final.slx
2. Run the Matlab scripts: msfun_realtime_elapsed and msfun_realtime_pacer
3. Choose the real time simulation time in block: Control →Timer
4. Use the mat file: Pwt_moderate_windtest_6mw_pu.mat in the from file 1 block and windserie_test.mat in block From File3 in the windspeed block
5. Connect either the Wind model to the G/T sets or the From File to the G/T sets. Uncomment the block that are not in use.
6. In the Switches block it is possible to adjust the speed reference point and number of turbines to run, and if the start and stop function is in manual or automatic.
7. In the Loads block, all the loads can be changed.
8. Select simulation time=2700 seconds.
9. Run the simulation
10. Perform control action in the Control block under simulation. The action can be: To start the second gas turbine, disconnect loads or adjust the speed reference set point.

Start seconds gas turbine automatically:

1. Before simulation start: Go to G/T set → Switches: Set block CB_man = 0, Disc_Gen2=1, AutoOnOff=1 and Start_stop__G2=0.
2. Run simulation
3. Press the button “Start/Stop Gen2”
4. To disconnect Gen2: Press first the switch “Disconnect Gen2”.
5. To stop Gen2: Press the button “Start/Stop Gen2”

Start seconds gas turbine manually:

1. Before simulation start: Go to G/T set → Switches: Set block CB_man = 0, Disc_Gen2=1, AutoOnOff=0 and Start_stop__G2=0.
2. Run simulation
3. Press the button “Start/Stop Gen2”
4. To synchronize Gen2 to the system press “CB Gen2”
5. Adjust the “Speed changer Gen1” to share the load between the generators
6. To disconnect Gen2: Press first the switch “CB Gen2”.
7. To stop Gen2: Press the button “Start/Stop Gen2”