

18-875/19-739 Homework 2
Engineering and Economics of Electric Power Systems
Due on 02/03/2020 midnight (Canvas submission only)

- 1) The included data file “energy_market_offers.csv” is a bidding snapshot taken from PJM web site. The second included file, “Data Miner 2.pdf”, is a page printout from the same web site describing the data fields in the data file. Using the fields necessary:
- a. (25 points) Write Matlab function to produce the supply function array for all constant marginal price bids.
 - b. (25 points) Write Matlab function to produce the supply function array for all piecewise linear marginal price bids.
 - c. (25 points) Write Matlab function to produce the supply function array for all bids.
 - d. (25 points) Write Matlab function which takes total current demand and supply function array from part c) and determines clearing price.

Since the resulting arrays must represent piecewise linear functions, you might consider the same format output array for all three supply functions but with slope of zero for part a). Submit plots of all the 3 supply function graphs and a few examples of clearing market price using the function from part d). Submit all 4 functions as Matlab files and a driver function using them and producing the required arrays, that is make your work reproducible and possible to grade.