Texas 7k Dataset

**Questions/Assumptions:**

* All units
  + Specifically, fuel price (assumed to be $/BTU)
* How do the breakpoints define the shape of the curve?
  + Assumed that it is piecewise linear until the last point, at which it plateaus until Pmax. Also assumes the line starts at the first point and does not go through the origin.
* Do the prices represent marginal cost of a megawatt hour or total cost?
  + Almost certainly marginal cost.
* What exactly does the incremental heat rate mean in RTS?
  + Could be step function, piecewise linear, etc.
* Are the following items continuous across asset type:
  + Start heats -> Appears consistent except coal
    - Wind, Solar, Hydro: 0,0,0
    - Oil ST: 68, 44, 38
    - Oil CT: 5,5,5
    - Nuclear: 78978, 0, 9999
    - Gas CT: 1457.4, 1122.5, 452.8
    - Gas CC: 7215.1, 4536.1, 3196.6
    - Coal: 69.5 \* PMax
  + Unit Groups -> Varies a bit but follows pattern
    - For renewable is just type of asset
    - For Thermals: “U”+ PMax
  + Output\_pct -> Does appear to be continuous within asset type
    - Coal (rounded a few), NG CT, Oil CT: 0.4, 0.6, 0.8, 1
    - Nuclear: 0.99, 0.993, 0.996, 1
    - Oil ST: 0.416, 0.611, 0.806
    - Hydro: 1, 0, 0, 0
    - Solar, Wind: 0,0,0,0
    - Gas CC: 0.478, 0.652,0.827, 1
* Why is HR\_avg\_0 > all incremental heat rates in RTS?

**Our Interpretation:**

We are interpolating BTU/KWh function from PowerWorld at different levels of ouput\_pct times pMax to get incremental heat rate.

**Notable Missing Analogs:**

* Petroleum Coke = Oil ST only 2
* Only one Wood/Wood Waste Biomass -> Ommitted
* Gas ICE = Gas CC
* Gas FCT = Gac CT
* Batteries and other are total guesses based on intuition

**Notable Assumptions:**

* Assumed units of fuel price are $/MMBTU
* Assumed that the function is piecewise linear but plateus from yaxis to first point and from last point to PMax