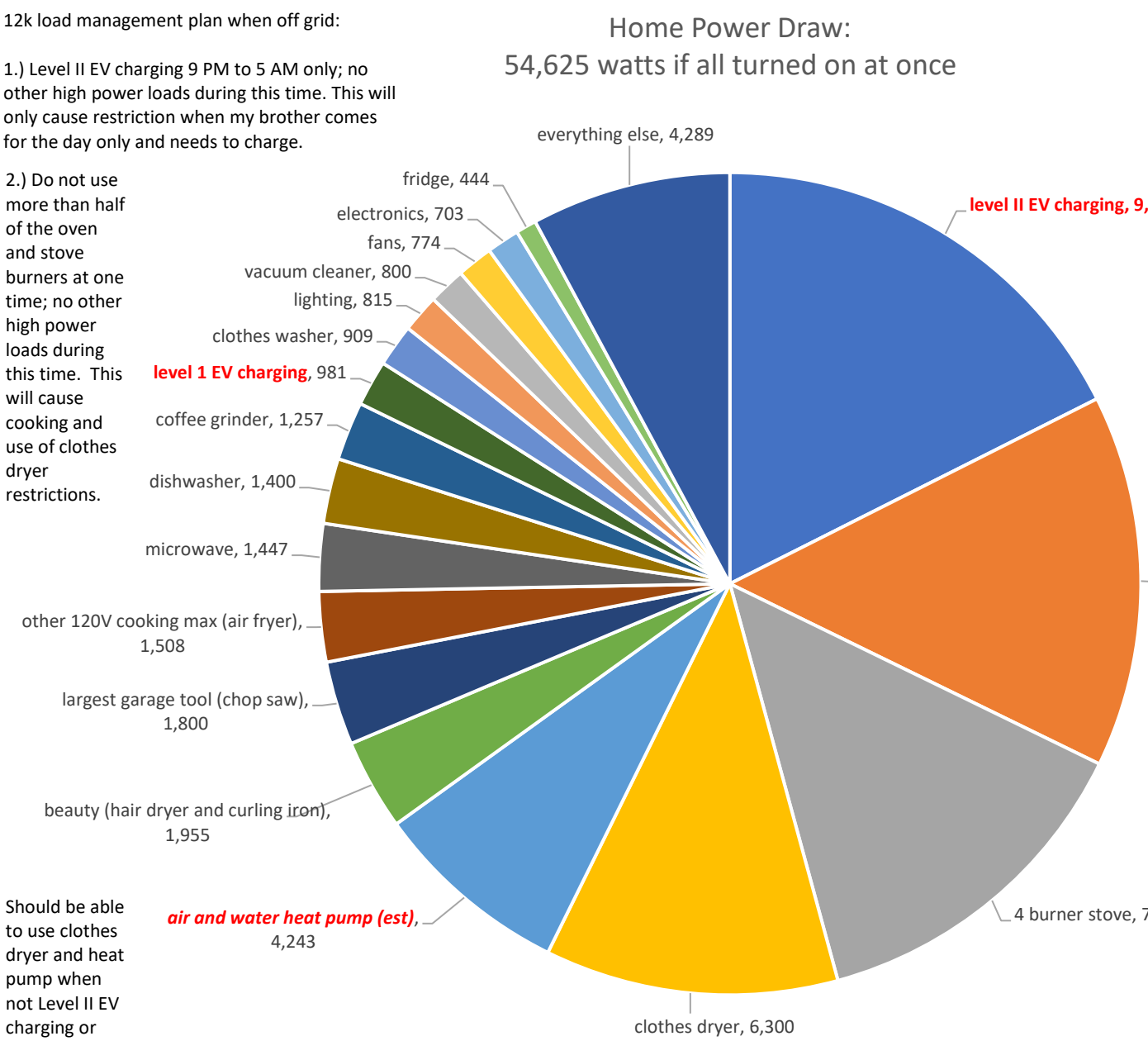
12k load management plan when off grid:

1.) Level II EV charging 9 PM to 5 AM only; no other high power loads during this time. This will only cause restriction when my brother comes for the day only and needs to charge.

2.) Do not use more than half of the oven and stove burners at one time; no other high power loads during this time. This will cause cooking and use of clothes dryer restrictions.

Should be able to use clothes dryer and heat pump when not Level II EV charging or cooking.



We currently have 240 volt, 90 amp, 21.6 kW service, with natural gas air and water heating. Before adding EVs and a heat pump it supported 39.8 kW if everything was on at once, 84% above rating.

Adding EVs and a heat pump, shown in ***red***, *totals 54.6 kW, 153% above rating.* Increasing service to 125 amps would achieve a similar 82% above rating for the new all-electric configuration.

But even if we manage our loads to within 90 amp service, a grid tied system where both the grid and the inverter can power the service panel would only allow for 18 amps or 4.3 kW of solar to be added due to the "120% rule" where the rating of the breaker plus solar can not exceed 120% of the breaker rating so the bus bars do not overheat. Accomodating a 63 amp, 15 kW peak inverter would total 153 amps which corresponds to 127.5 amps rating, so a 150 amp panel would be required.