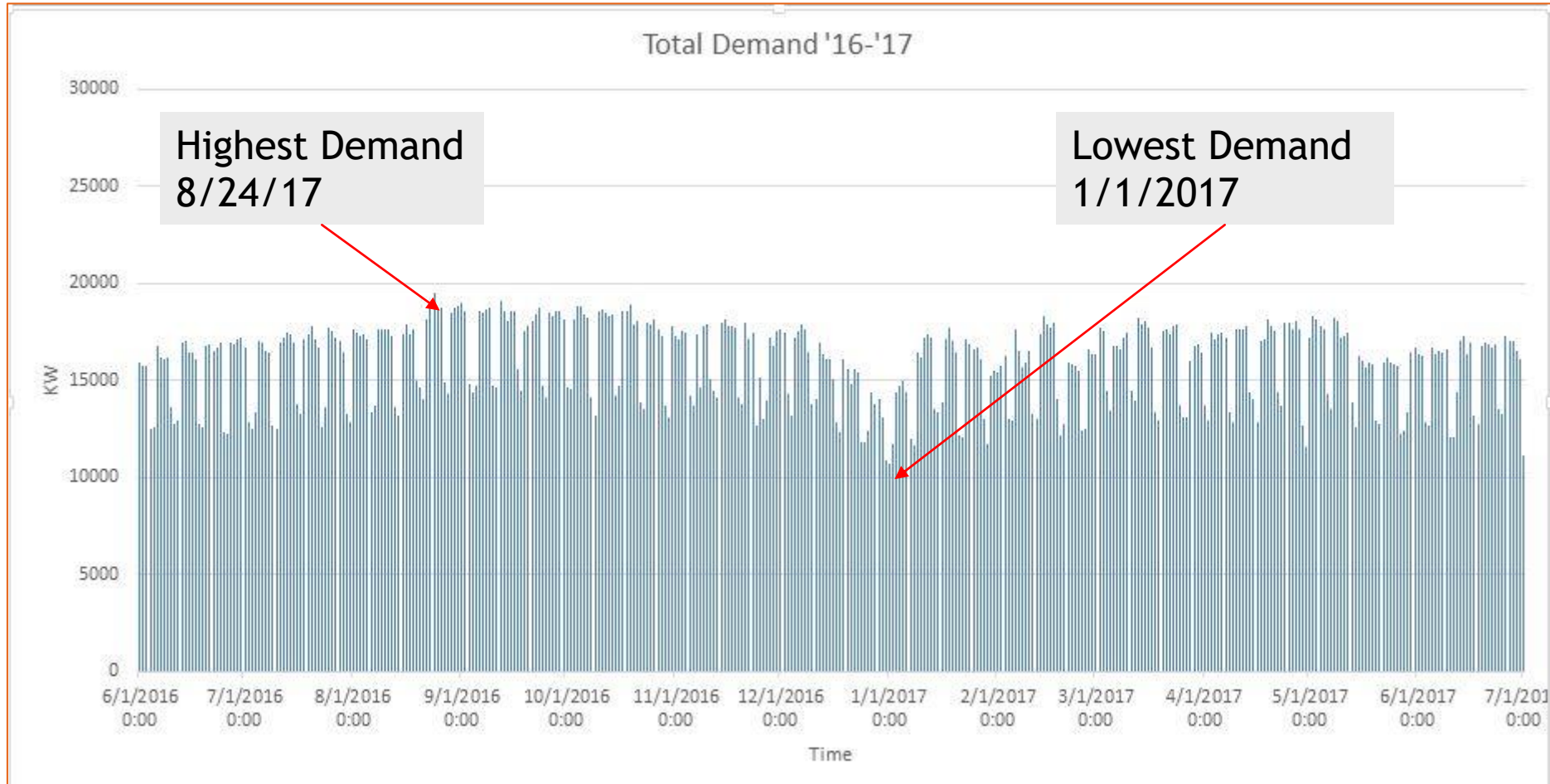


UH Manoa Energy & Demand



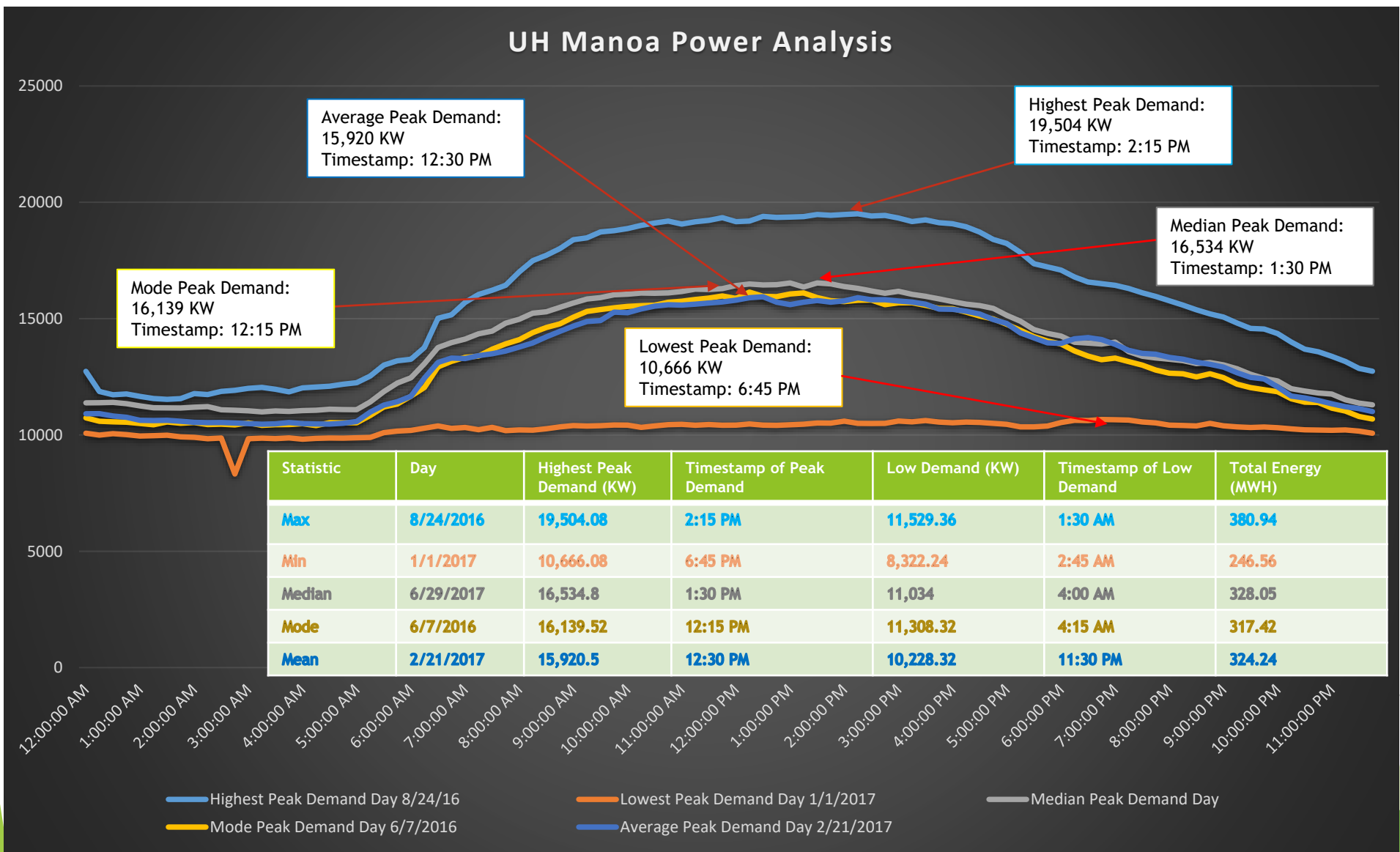
Miles Topping
Jonathan Kutsunai

UH Manoa Total Demand



Max: 19504.08 KW (8/24/2016)
Min: 8322.24 KW (1/1/2017)
Mean: 15,920.5 KW (6/29/2017)
Median: 16,534.8 KW (6/7/2016)
Mode: 16,139.52 KW (2/21/2017)

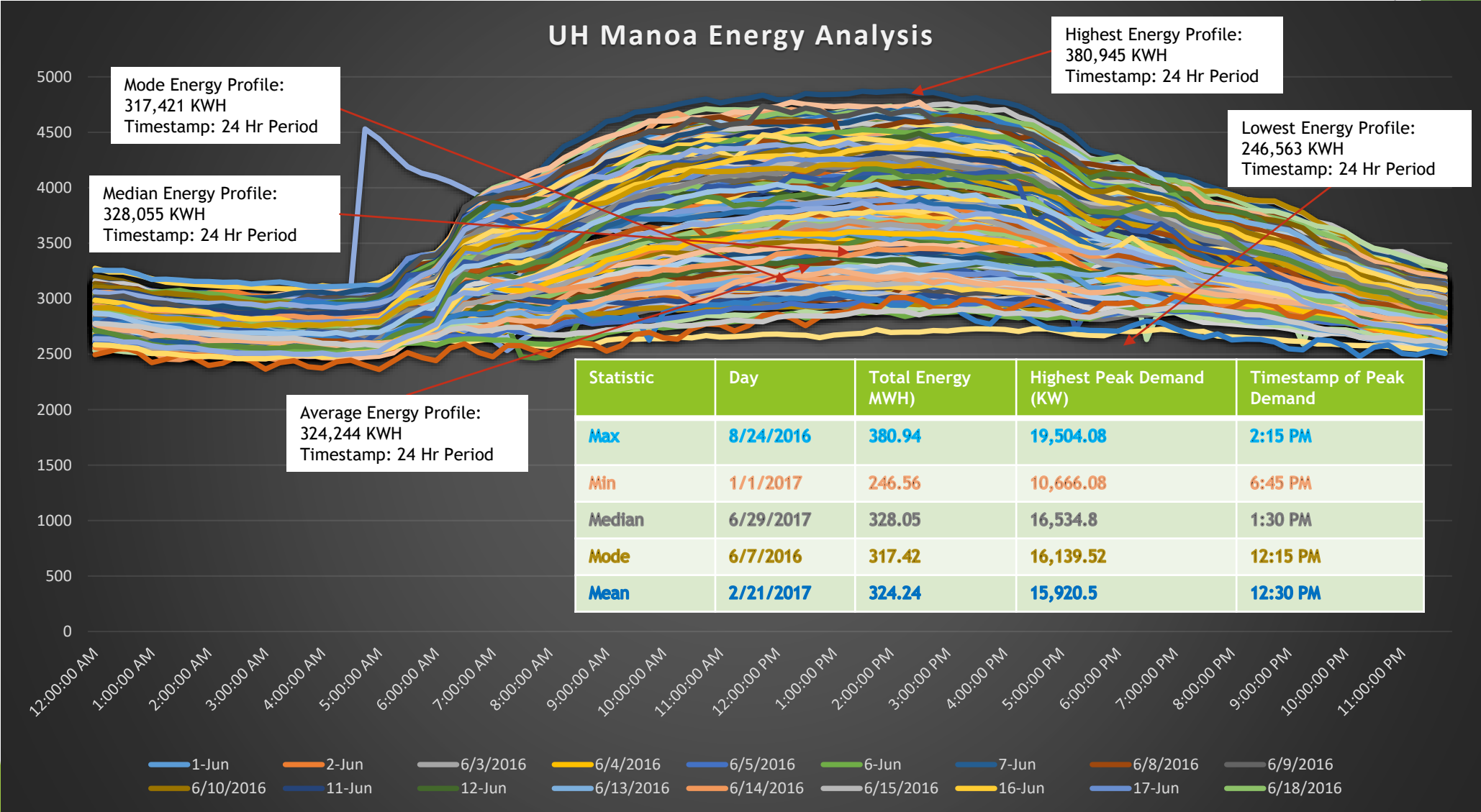
UH Manoa Demand Statistics



Demand Statistics

- ▶ Highest Peak Demand Value was found to be 19,504 KW and the profile of that day was plotted
- ▶ Lowest Peak Demand Value was found to be 10,66.08 KW and the profile of that day was plotted
- ▶ Average Demand Value was found to be 15,920.5 KW for all demand, and the profile of 2/21/2017 was plotted since it included this value
- ▶ Median Demand Value was found to be 16,534.8 KW for all demand, and the profile of 6/29/2017 was plotted since it included this value
- ▶ Mode Demand Value was found to be 16,139.52 KW for all demand, and the profile of 6/7/2016 was plotted since it included this value

UH Manoa Energy Statistics

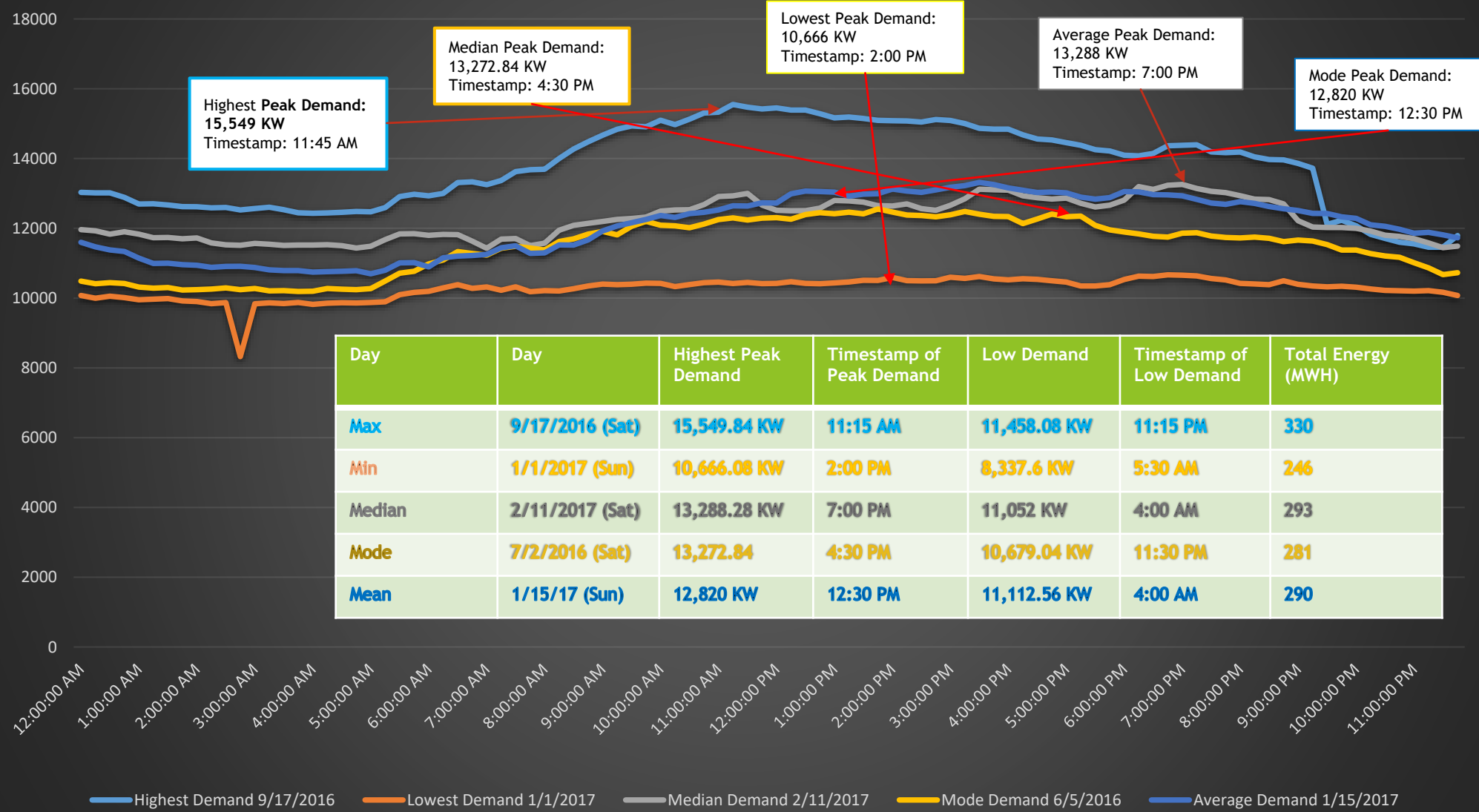


Energy Statistics

- ▶ Highest Amount of Energy was found to be 380,945.3 KWH and the profile of that day was plotted
- ▶ Lowest Amount of Energy was found to be 246,563.2 KWH and the profile of that day was plotted
- ▶ Average Energy was found to be 324,244.4 KWH and the profile of 2/21/2017
- ▶ Median Energy was found to be 328,055 KWH and the profile of 6/29/2017
- ▶ Mode Energy was found to be 317,421 KWH and the profile of 6/7/2016

UH Manoa Weekend Demand Statistics

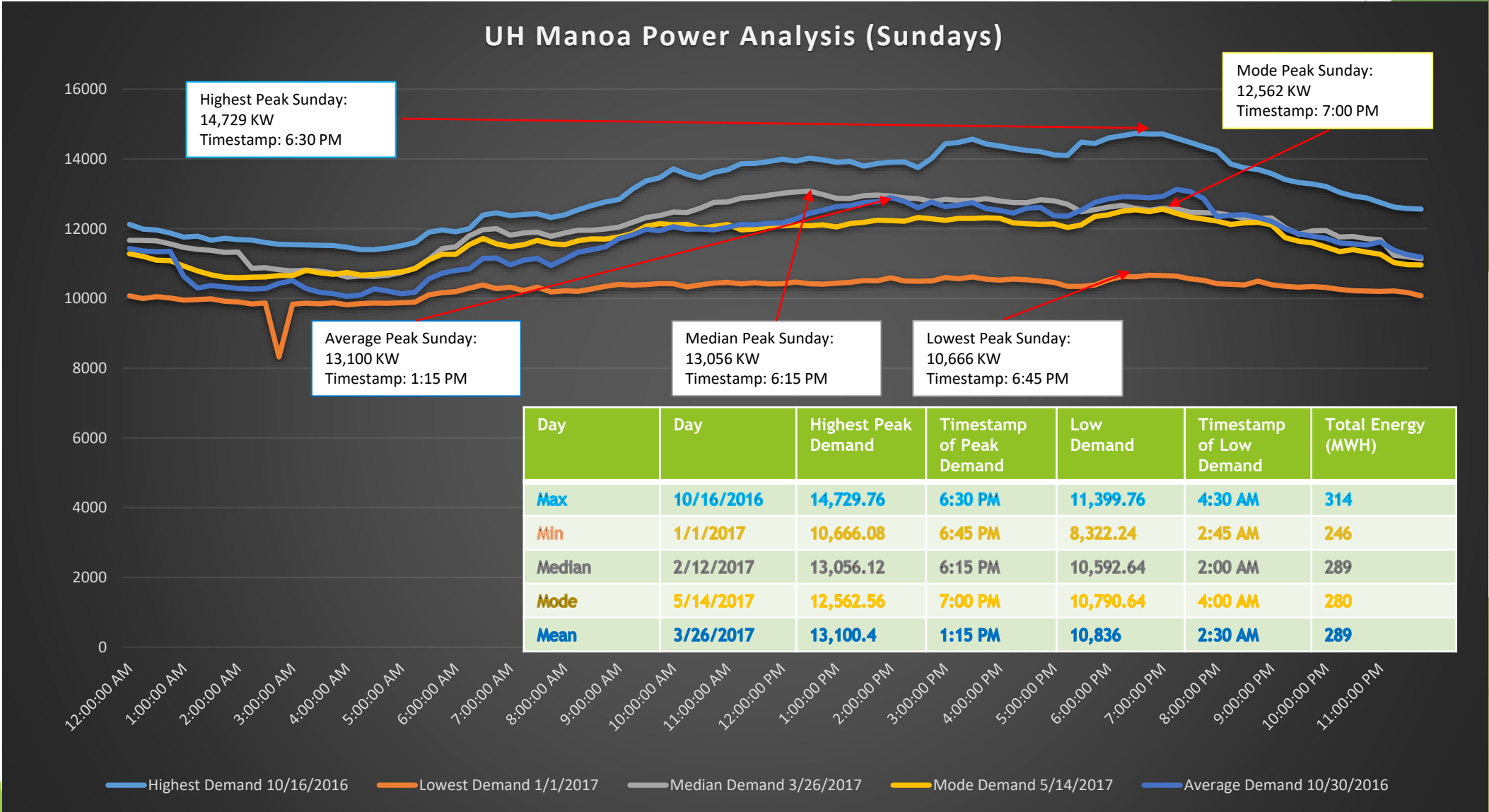
UH Manoa Power Analysis (Weekends)



Weekend Demand Statistics

- ▶ Highest Peak Demand Value was found to be 15,549 KW and the profile of that day was plotted
- ▶ Lowest Peak Demand Value was found to be 10,666.08 KW and the profile of that day was plotted
- ▶ Average Demand Value was found to be 13,288.28 KW for all demand, and the profile of 1/15/2016 was plotted since it included this value
- ▶ Median Demand Value was found to be 13,272.84 KW for all demand, and the profile of 2/11/2017 was plotted since it included this value
- ▶ Mode Demand Value was found to be 12,820 KW for all demand, and the profile of 7/2/2016 was plotted since it included this value

UH Manoa Sunday Demand Statistics



Sunday Demand Statistics

- ▶ Highest Peak Demand Value was found to be 14,729.76 KW and the profile of that day was plotted
- ▶ Lowest Peak Demand Value was found to be 10,666.08 KW and the profile of that day was plotted
- ▶ Average Demand Value was found to be 13,100.4 KW for all demand, and the profile of 10/30/2016 was plotted since it was closest to 13,288.24
- ▶ Median Demand Value was found to be 13,056.12 KW for all demand, and the profile of 3/26/2017 was plotted since it was closest to 13,080.24
- ▶ Mode Demand Value was found to be 12,500 KW, and the profile of 5/14/2017 was modeled since it included this value

Conclusions

- Peak Demand and the total amount of energy used in a day are directly correlated
- Weekends use significantly less energy than the weekdays (difference of 3,000-4,000 KW peaks)
- Sundays tend to peak in the early evening, rather than in the afternoon

Comments

Possible causes of fluctuation:

- A/C Usage (Greater number of cooling days)
- Amount of people on campus utilizing resources
- Lab Usage
- Student Housing Remodeling/Conference Housing
- Sundays: Peak in the evening due to everyone coming back to campus
- 12/31/16 and 1/1/17 did not have mid day rises, and according to historical weather data those days had almost all cloud cover/rain the entire day.
- 231 Days had a peak demand between the highest peak and the average value which explains why the average, median, and mode are higher then expected.