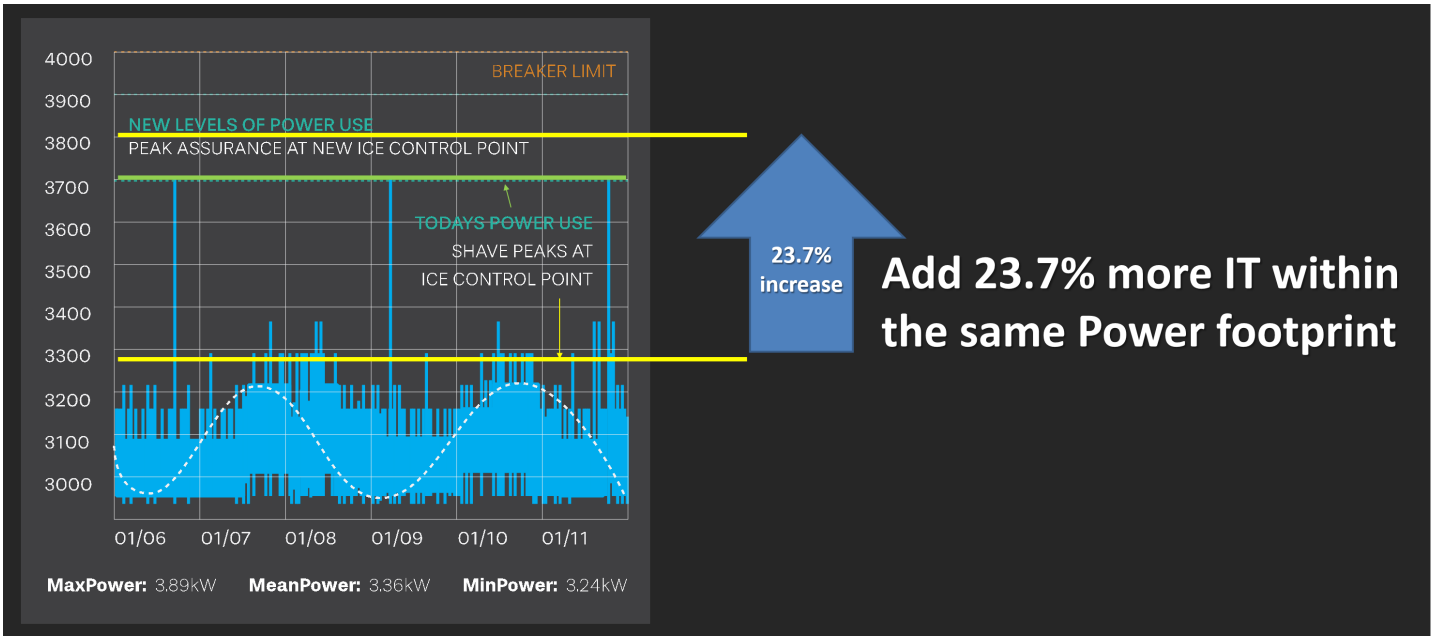
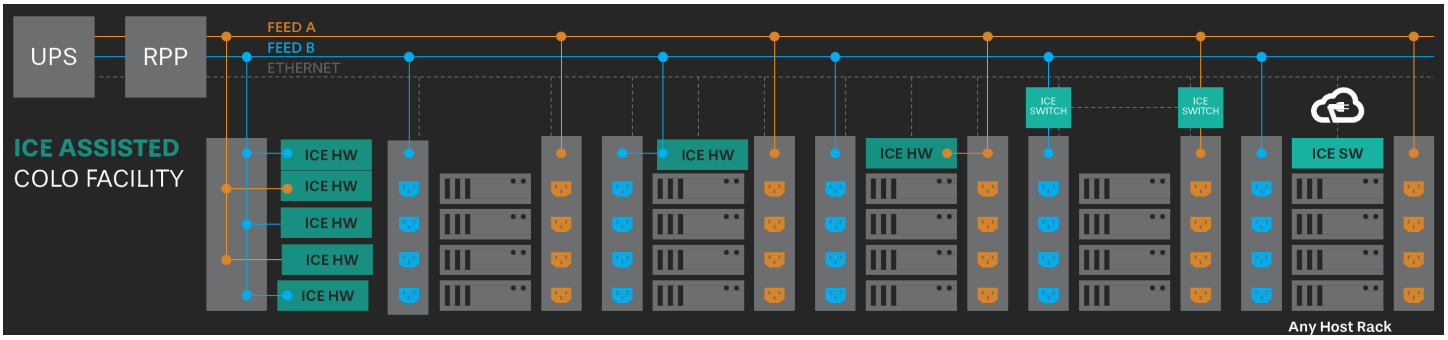
An Executive Brief on Peak Assurance

The variability between average and peak power draws, in a rack or container or Data Center, cause peaks as shown in the image below. Operators leave further buffer above these peaks for further assurance. Since the infrastructure is deployed for the peaks, it leads to the locked and unusable capacity left due to the peaks and the buffers above the peaks. ICE Rackshare application works on the simple but elegant logic of using stored energy, in the form Li Ion battery, to eliminate the peak draws from the infrastructure and hence unlock the capacity for IT use. The operations of ICE block are analogous to the functions of a Hybrid car, in that the hybrid charges the batteries when there is excess power in the car, and discharges this power when needed.



In the illustration above (taken from a large Colo provider), the average rack power (on one of the PDUs of a dual corded rack) is 3.1kW, with peaks upto 3.7kW. ICE initially caps and flattens the Grid power draw to a control limit of 3.3 kW. This allows deployment of more IT servers in the rack and increased baseload of 23.7%. The same concept is extrapolated to a Row or entire Data Center.



ICE Rackshare is one of the ICE suite of applications, residing on commodity servers in any host rack. This is shown on the top shelf of the last rack in the figure above. ICE Rackshare controls ICE HW, with Li Ion batteries, to achieve its objective. The ICE HW can be distributed in racks, but acting as one aggregated unit through the ICE software. The ICE HW could also be placed on a dedicated rack in the end of Row, as shown in the first rack in the image above. The profile of the power draw dictates the sizing and optimal placement of the ICE HW.