Stanford Online. (2018, December 13). The next big opportunities in energy storage. Retrieved March 28, 2021, from <https://www.youtube.com/watch?v=_LAuDTNW5dw&t=348s>

This concise, state of the art, YouTube video, shows us easy to understand reasoning through statistical charts which helps us understand aspects of energy storage. The effort of this video is to outline circumstances surrounding energy storage and give us new ways to determine the exact storage we truly need. The video covers charts which help us see grid power generation customer supply /demand vs overall demand cycles. In our grid generation shut down and ramp up 10k megawatts during a 24-hour period. Our Grid has a Three-hour peak demand. We have so much electricity generation during mid-day from renewables that enough baseload sources cannot possibly be turned off to balance generation. Can we align demand with supply by shifting our resources and the way we manage generation? Discussion of peak shaving as a focus to guide storage needs. Importance of storage, aligning generation to demand storage:

Seasonal peak shaving, minute to minute. Natural gas peaker plants are very effective and cost efficient. By 2030 lithium ion will surpass gas plants. There is no silver bullet. We need a wide range of energy storage technology to meet the needs we have. The overwhelming battery source today is pump hydro. All others are small. Enormous capital expenditure is required to develop chemical battery storage. Counting upon the lithium-ion battery to ramp up for dependability of storage is dependent on the cost effectiveness of the battery. We know material cost will continue to dominate as a constraint. So, can we design new battery technology which is better cost effective? Levelized cost effectiveness involving battery lifetime, cycle, and materials is the key factor to new grid battery storage technology.

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