

DOCKETED

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Microgrid IRP comments

Additional submitted attachment is included below.

July 30, 2020

Honorable Janea Scott, Vice Chair
California Energy Commission
1516 9th Street
Sacramento, CA 95814

RE: Docket 20–IEPR–04 Comments on IEPR Commissioner Workshop on Assessing the Future Role for Microgrids in California

Dear Vice Chair Scott,

Energy Pathways appreciates the California Energy Commission for its leadership for identifying the critical role microgrids for the State's critical infrastructure.

With thirty years of energy efficiency experience with last decade focused on robust microgrids, nationally for fortune 500 energy companies, Energy Pathways brings a distinctive perspective to onsite generation for critical infrastructure like hospitals. In response to hurricane Sandy, Northeast hospitals with a Combined Heat and Power (CHP) backed microgrids had the resilience capacity to ride out the storm while providing hospitals with 100% of their electricity and thermal loads including steam, hot and chilled water.

The recent PSPS events *are* California's Hurricane Sandy. We have a unique opportunity to support the healthcare industry if properly addressed by State policy makers. During this costly time of Covid19 and wildfire threat our hospitals have been seriously impacted. The American Hospital Association (AHA) estimates a total financial impact of \$202.6 billion in losses resulting from COVID-19 expenses and lost revenue for hospitals and health systems over the four-month period from March 1, 2020 to June 30, 2020 – or an average of over \$50 billion in losses a month.

One practical solution is cost effective, highly efficient, robust, resilient, long duration microgrids which address both electrical and thermal loads through CHP backed systems. In addition, third party ownership can add to the economic feasibility of enhancing a hospital's energy system while improving utility resilience.

Energy Efficiency

Hospitals are the second largest energy consumers in the State of California. They consume 2.5 times the amount of energy of an average commercial building. Prior to Covid19, a typical hospital spent at least 15% of its profit on energy costs. Because of stringent patient-care needs, hospitals in the past traditionally insisted on two energy sources: primary power from the local utility and emergency backup generation. Microgrids with cogeneration/CHP onsite can supplement utility power by providing round-the-clock electricity and thermal generation and

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complement OSHPD Joint Commission backup generation by providing an additional source of energy.

CHP combines electricity and thermal energy generation into a single process which can increase energy efficiency more than any other technology. On average, 75% of a hospital's load is thermal related, (steam, heating, and cooling) making hospitals a perfect energy efficiency fit for CHP backed microgrids. CHP's efficiency is highest when sized to meet the thermal load. CHP systems can reach efficiencies as high as 90%. Electric-only fuel cells or thermal-only systems are only about half as efficient as CHP when these tasks are performed separately.

Resiliency

During Hurricane Sandy, a CHP backed microgrid supplied a New Jersey hospital with 100% of its electricity and thermal loads. Coupled with solar, thermal energy storage and electric vehicle charging this microgrid has the flexibility to support the hospital around the clock 24/7/365 days during both blue sky and grey sky conditions. In addition, this microgrid strengthens the local grid by providing grid services in the form of frequency reserve and voltage support. Because of storms like Hurricane Sandy, the East Coast values the resiliency and efficiency of CHP based microgrids.

2020 started out with the driest February since the 1850s in California. Coupled with warming temperatures and recent winds, this year's grass crop is quickly drying out. We are already above average for fire ignitions for this time of year," said Cal Fire Unit Chief Scott Lindgren. "Be prepared for wildfire. Please take time to make a wildfire action plan." Since Jan. 1 firefighters across the state have responded to more than 2,338 wildfires compared to 1,340 wildfires this time last year. Our hospitals in High Fire Threat Districts and disadvantaged communities should be incentivized to implement more resilient, cost effective energy systems like CHP backed microgrids.

California Hospitals and Seismic Mandates

Alquist Seismic Safety Act establishes a seismic safety building standards program under OSHPD's jurisdiction for hospitals built on or after March 7, 1973. The Act was initiated because of the loss of life incurred due to the collapse of hospitals during the Sylmar earthquake of 1971. The structural performance of all hospital buildings was established and separated into five categories, Structural Performance Category 1 through 5 (SPC1 – SPC5). See chart below.

SPC1 concluded in January, 2020. Regrettably, less than 10% of the hospital constructed or reconstructed in the past decade deployed economic and resilient CHP backed microgrids. Instead business-as-usual utility infrastructure was installed. The State missed out on an enormous opportunity to capitalize on energy efficiency from our second largest energy

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consuming industry. One of the deterrents to deploying CHP in California has been the Departing Load and Standby charges.

Hospital buildings falling into categories SPC-2 through SPC-5 are required to be constructed or reconstructed over the next ten years. A flurry of hospital construction is due take place this decade and the State has another opportunity to make great efficiency strides in this sector if policy makers address key barriers such departing load and standby charges.

OSHPD & Hospital Seismic Retrofit Categories and Compliance dates

SPC 1	SPC 2	SPC 3	SPC 4	SPC 5
2008-2018 Extensions Jan 1, 2020, Beyond which the building can no longer provide general acute care services Significant risk of collapse in a major earthquake public danger	2030 Low Risk of Collapse in a major earthquake Buildings are "life safe" but may not be repairable following earthquake. Must comply by Jan 1, 2030	2030+ May experience structural damage that does not significantly jeopardize life, but may not be repairable following an earthquake.	2030+ Buildings may experience structural damage that may inhibit provision of services to the public following an earthquake must	2030+ Building reasonably capable of providing services to the public following an earthquake.

SPC 3 to SPC 5 Buildings out of compliance must be constructed or reconstructed by 2030

Conclusion

By incentivizing a mixed portfolio of technologies which address both thermal and electric loads like Combined Heat and Power (CHP) with renewables, and storage, we can support one of our most critical industries, with flexible energy which can ramp up or down dependent on load thus providing the State's hospitals with the reliable, resilience and long duration energy to meet the demands of California's clean energy economy and PSPS events.

Thank you for taking the time to address such an important issue for one of our most critical sectors.

Sincerely,

Carol Denning

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Energy Pathways

President & Energy Strategist
Energy Pathways, LLC