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Willdan's Microgrid Roadmap Comments

Additional submitted attachment is included below.

November 14, 2017

Willdan Group commends the staff of the California Energy Commission (Energy Commission), California Public Utilities Commission (CPUC) and California ISO for their commitment to developing the “Roadmap for the Commercialization of Microgrids in California.” Willdan is committed to helping the CEC reach its goals through forward-thinking policy, cutting-edge research, and the promotion of energy innovations that help the State of California continue to be a global leader in combating climate change and driving national and international policy changes. Willdan is pleased to provide its comments to the Draft Microgrid Roadmap. We appreciate this opportunity to offer feedback and suggestions from our team of smart grid experts, who have identified the following opportunities to meet the stated themes as well as the overall EPIC goals.



Mehdi Ganji
Vice President, Smart Cities

Willdan Energy Solutions
Comprehensive. Innovative. Trusted.

2401 E. Katella, Suite 300
Anaheim, CA 92806
T. 714.940.6300
M. 415.722.0132

Advanced Microgrid Workforce Training:

Microgrid technologies are advancing at a fast pace. Although it is widely recognized that the development, market adoption and level of technical and financial maturity of microgrid distribution energy resources (DERs), controllers, sensors, and communications are significant concerns, the level of microgrid developers' and facilities operators' knowledge plays a strong role in microgrid deployment success that has not been sufficiently recognized. As an example, developing and bringing the technologies mentioned above to market will facilitate the design, construction and operation of microgrids; however, without considering facilities planning and operation limits, the successful implementation of a microgrid is impossible. At the same time, limited knowledge on the part of these facilities decision-makers about microgrid system deployment and operation may hinder their ability to move forward. Therefore, we recommend that microgrid workforce training be targeted as an element of this roadmap.

Programmatic Siting and Sizing of the Microgrid (PSSM)

Many developers target a facility's ability to deploy a microgrid system based on different intra-facility drivers including the facility decision-makers' interest, previous engagements or relationships with developers, and financial and technical concerns (high electric demand charges, need for high reliability, and resiliency requirements). This approach supports microgrids that are specifically designed to meet the facility's needs.

We recommend a programmatic method be developed and implemented to size and site microgrids optimally, which will help the State, utilities, CAISO, and local governments to achieve their goals and increase the number of microgrids in California. This approach would target facilities in areas with poor electricity services compared to the utilities' average service quality, areas requiring high distribution infrastructure investment, and areas with high LMP. We also strongly recommend the application of data analytics to identify these areas. For example, GFO 17-302-supported regions known as environmentally disadvantaged can be targeted using CalEnviroScreen. PSSM would build an environment in which the benefits and values accruing to the State of California will be understood, while allowing developers to strategically target the critical facilities with higher impact on reliability, resiliency, and cost-effectiveness to host the microgrid.

Microgrid Broader Vision for the State of California

Willdan's Smart Cities team envisions a future where hundreds of microgrids are deployed within the utility footprint, resulting in more operational challenges for the investor-owned utilities (IOUs). To reduce these challenges, we recommend deploying microgrids that can be strategically and efficiently expanded to surrounding communities; and deploying microgrids that can be replicated at multiple locations but managed by the same jurisdiction. Providing regulated utilities with this level of flexibility, efficiency, visibility and control would address the concerns above and enable the IOUs to spend the ratepayers' money more wisely.

Microgrid Non-Energy Related Benefits

Microgrids benefit the utilities, ISOs, and facility owners and operators. To develop a commercially viable microgrid, developers must build a system with adequate infrastructure, enabling the microgrid owner/operator to offer more services. These services will not only provide the owner with more savings and revenue generation opportunities, but also present local government with future planning and economic development opportunities. These non-energy-related benefits will be provided by each of the technologies deployed in a microgrid's footprint, or the type of service offered by the microgrid. For example, the system master controller (technology) can be used to manage local municipal resources—"Smart Cities" solutions (water and wastewater management) and microgrid cyber secure communications (service) can be used to support community disaster alerts.