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Additional submitted attachment is included below.

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10 January 2020

FROM: Timothy Hade
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TO: California Energy Commission
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SUBJECT: Docket 19-ERDD-01 Request for Comments
DER Strategies for MDHD BEV Charging Infrastructure.

Scale Microgrid Solutions, LLC respectfully submits the following responses to the CEC staff in connection with Docket 19-ERDD-01 and topic "DER Strategies for MDHD BEV Charging Infrastructure" specific to the questions identified in the Request for Comments on Grant Opportunity Concept:

1. Of the candidate use-cases and vehicle types listed above, which ones should we prioritize in this solicitation and why?

a. Will distribution capacity constraints be a major barrier to the deployment of the charging infrastructure needed for that use-case in the short- to medium-term?

This will depend on the specific use case, location, and servicing utility. However, absent DER deployments in concert with MDHD BEV Charging Infrastructure, it is highly probable that many sites will require distribution system upgrades.

b. Will vehicles and charging equipment be readily commercially available in the short- to medium-term?

Yes. Economically viable vehicles/charging infrastructure are currently available on the market, and we do not anticipate that procurement will be a barrier in the short-medium term.

d. Are there use-cases that would particularly benefit from the reliability and resiliency value of the DER strategy?

Yes. Given wildfire mitigation and Public Safety Power Shutoff (PSPS) concerns in many areas of California, we believe that integrating DERs into MDHD charging infrastructure is a necessity in many instances. Without the ability to island charging infrastructure in the event of long duration PSPS events, it is likely that MDHD BEV's will not be able to meet core operational requirements. DER integration is particularly important for MDHD BEV's that support critical community services during PSPS events such as transit/school buses and municipal vehicles.

f. What incentive or funding mechanisms already exist to support MDHD fleet operators looking to electrify?

With respect to DERs, fleet operators may be eligible for benefits under the state's existing Self Generation Incentive Program (SGIP). However, the SGIP is currently undergoing significant revisions and eligibility would need to be determined on a case by case basis. Additionally, dependent on system design, many DERs are eligible for Federal Investment Tax Credits and may be eligible to earn revenue via participation in various ancillary service programs.

h. Which use-cases have the most potential to replicate the DER package and achieve a meaningful scale?

In our view, developing DER packages to support municipal BEV transit fleets represents an excellent opportunity to achieve meaningful scale. It is very clear that there is significant interest throughout California with respect to converting legacy transit fleets to BEVs. Moreover, transitioning to BEV-heavy fleets will likely be a key component of achieving various climate action goals.

However, reliance on traditional utility electric infrastructure has the potential to deter stakeholders from pursuing BEV fleet conversions due to concerns surrounding reliability, resiliency, and cost.

Properly designed/deployed, modular behind-the-meter microgrid technology represents the potential to alleviate these concerns at scale.

2. What is the best way to characterize the grid impacts and other costs associated with deploying MDHD BEV charging infrastructure without a managed charging/DER strategy?

a. What metrics should be used to evaluate the cost and performance of the baseline incumbent technology? Metrics currently under consideration include:

i. Itemized balance of system costs considering both site host costs and utility costs,
ii. Carbon intensity,
iii. Cost of delays associated with upgrading upstream distribution systems/substations, and
iv. Risks associated with long-term investments in permanent upgrades.

In addition to the items listed above, we believe that it would be prudent to include a complete Lifecycle Cost Analysis. Performing a more detailed LC Analysis would likely be useful in understanding the broader economic implications of the project. Specifically, we recommend that the LC Analysis include a mechanism for assessing the cost of grid outages.

3. How does the target technology need to improve?

a. What are the current balance of system costs associated with deploying DERs as a non-wires solution for integrating MDHD BEV charging equipment?

Balance of System Costs are going to vary wildly dependent on site specific factors and system requirements.

Within the next 2-3 years, we believe that it will possible to deploy behind-the-meter microgrid technology to support MDHD BEV charging infrastructure at an effective average blended rate of $0.15-$0.20/kWh.

4. What level of investment would be needed from EPIC to make a meaningful difference on this issue?

b. What portion of the DER equipment costs should be covered by EPIC in order to appropriately incentivize site host participation?

It is likely possible to deploy modular behind-the-meter microgrid systems to support to support MDHD BEV Charging Infrastructure while reducing the end-user's effective electric rate. Design, engineering, and implementation costs will be significantly higher on initial projects. 25% EPIC support can likely make initial projects economically viable.