DOCKETED	
Docket Number:	22-RENEW-01
Project Title:	Reliability Reserve Incentive Programs
TN #:	268931
Document Title:	Channing Street Copper Company Comments - Copper's Comments on Adoption of the Proposed Draft DSGS Program Guidelines, 5th Ed
Description:	N/A
Filer:	System
Organization:	Channing Street Copper Company
Submitter Role:	Public
Submission Date:	3/4/2026 1:15:53 PM
Docketed Date:	3/4/2026

Comment Received From: Channing Street Copper Company
Submitted On: 3/4/2026
Docket Number: 22-RENEW-01

Copper's Comments on Adoption of the Proposed Draft DSGS Program Guidelines, 5th Ed

Additional submitted attachment is included below.

COPPER

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California Energy Commission
Docket Unit, MS-4
Docket No. 22-RENEW-01
715 P Street
Sacramento, CA 95814

March 4, 2026

Re: Docket 22-RENEW-01, Reliability Reserve Incentive Programs, Proposed Revised Draft Demand Side Grid Support (DSGS) Program Guidelines, Fifth Edition — Baseline Methodology for Load-Connected Storage Assets

Dear Commissioners and Staff:

Channing Street Copper Company (hereafter, "Copper") respectfully submits this public comment in response to the California Energy Commission's (CEC) proposed Revised Draft DSGS Program Guidelines, Fifth Edition, specifically regarding the baseline methodology for Participation Option 3: Market-Aware Storage Virtual Power Plant Pilot. We appreciate the opportunity to contribute comments and commend the CEC for its continued leadership in developing programs that strengthen grid reliability while promoting clean energy innovation.

I. Support for the Proposed 10-in-10 Baseline Methodology

The CEC has proposed updates to DSGS Option 3 that would introduce a 10-in-10 baseline for calculating program performance. We support this approach as a sound method for ensuring that the program incentivizes resources that provide incremental curtailment for stationary storage connected to solar projects. We understand the CEC's goal is ensuring curtailment that would not otherwise occur through existing mechanisms such as time-of-use rates or other demand-side programs for these widespread technologies. We understand the CEC wants to ensure a well-calibrated baseline to maintain the integrity and cost-effectiveness of the DSGS program for all California ratepayers.

II. The Zero Baseline for Electric Vehicle Supply Equipment Is Appropriately Justified

The CEC has proposed that the baseline for electric vehicle supply equipment (EVSEs) should be defined as zero. This treatment is appropriate because the storage assets associated with EVSEs—namely, electric vehicle batteries—are directly coupled to a customer device with independent use constraints. An EV battery must retain sufficient charge to meet the vehicle owner's transportation needs, such as commuting to work. Because of this direct coupling to a non-grid primary use, EV batteries are generally considered incremental to the established grid baseline used for daily operations. Their participation in DSGS represents a net addition to grid support capacity rather than a reallocation of stationary storage resources connected with solar that would otherwise engage in daily load shifting. The latter technologies' primary purpose is daily load shifting and energy arbitrage. For those assets, a non-zero baseline appropriately captures their existing operational patterns.

III. Emerging Load-Connected Storage Technologies Merit the Same Treatment as EVSEs

A growing class of emerging technologies shares the same fundamental characteristics that justify a zero baseline for EVSEs. These are products that integrate battery storage directly into household appliances, where the battery is coupled to a specific customer end use rather than serving as a general-purpose grid resource. Two notable examples have recently entered the market: induction stoves and air-source heat pumps.

First, induction stoves with embedded batteries are now being manufactured by several companies, including those based in California. Our technology is a 120-volt induction range with an integrated 5 kWh lithium-iron-phosphate (LFP) battery. This enables the appliance to plug into a standard household outlet, eliminating the need for costly electrical panel upgrades or rewiring, and allows for operation during a blackout. The Impulse Cooktop similarly integrates a 3 kWh LFP battery to deliver induction cooking from a standard 120-volt connection. Both products enable consumers to transition from gas to electric cooking without incurring significant construction costs—a barrier to electrification that is particularly acute in multifamily housing and older building stock.

These products are gaining substantial institutional support and market validation. In November 2025, the New York Power Authority (NYPA), the New York State Energy Research and Development Authority (NYSERDA), and the New York City Housing Authority (NYCHA) announced a $32 million commitment to develop, pilot, and procure 10,000 battery-equipped induction stoves manufactured by Copper for installation in New York City public housing. The program aims to replace aging gas infrastructure in NYCHA buildings, avoiding costly gas riser repairs and electrical upgrades while improving indoor air quality for over 520,000 authorized public housing residents.

Similarly, in California, the CPUC unanimously approved the state's first Market Transformation Initiatives (MTIs) in November 2025, including conditional approval for an Induction Cooking MTI administered by CalMTA. This initiative specifically targets 120-volt induction cooking products—including battery-equipped models—with the goal of making them accessible and affordable for California households, with particular emphasis on deployment in environmental and social justice communities. The initial investment is projected to deliver approximately $1 billion in cumulative benefits through 2045, including avoided electric and gas infrastructure costs.

Second, and more emerging, air-source heat pumps connected with battery storage are being developed to allow this HVAC equipment to operate competitively with traditional gas furnaces or air conditioning units while maintaining comfort and supporting the grid. This is particularly important in California, where there is generally no positive payback for air-source heat pumps. By operating them with a battery, this crucial equipment for decarbonization can become more competitive. Examples of this technology include Carrier's development of an efficient variable speed heat pump paired with battery storage. By working closely with select utilities and the Electric Power Research Institute (EPRI), Carrier is exploring and demonstrating the role of load-connected storage as a critical and flexible grid asset.

IV. The Case for a Zero Baseline for Load-Connected Appliance Storage

Load-connected storage products integrated with appliances share the key characteristics that justify the zero baseline treatment currently proposed for EVSEs. We identify three critical parallels:

> **Customer Use Constraints.** Like an EV battery that must retain charge for transportation, a battery-equipped stove must retain sufficient charge to cook meals. The customer's primary relationship with the device is as a cooking appliance, not as a grid resource. Discharging the battery for grid services is subject to the constraint that the appliance must remain functional for its intended purpose. The same logic applies for air-source heat pumps paired with batteries, as occupant health and comfort must be prioritized, especially during increasingly severe heat events across our state.
>
> **Incremental to Baseline Grid Operations.** These appliances would not exist on the grid absent the customer's need to cook and/or heat and cool their home. The storage capacity they contribute is purely incremental—it enters the system only because the customer purchased a cooking appliance and/or air-source heat pump. This is fundamentally different from a standalone home battery purchased specifically for energy management.
>
> **Primary Purpose Is Not Load Shifting.** The primary purpose for the load-connect batteries is operating the appliance with limited electrical capacity, not electricity rate arbitrage. This means the battery is generally only used for the connected appliance's loads, rather than fed back to the house or grid. This is analogous to an EVSE.

Copper has already demonstrated the grid services potential of induction stoves with batteries. In the summer of 2024, the company piloted a virtual power plant in California using a network of its battery-equipped ranges, providing verified capacity and reducing dependence on gas peaker plants. This pilot confirms that load-connected appliance storage can deliver meaningful demand reduction for programs like DSGS.

V. Equity Considerations Support This Expansion

Many of these emerging battery-equipped appliance technologies are being deployed in low-income and affordable housing communities, where they deliver outsized benefits. Villa Esperanza in Los Angeles, CA and Emerson Arms in Martinez, CA, have benefited from recent installations of 120v induction stoves from Copper. Similarly, the NYCHA deployment of Copper stoves described above will serve residents of public housing across New York City, replacing deteriorating gas infrastructure that causes frequent service outages and exposes residents to harmful indoor air pollutants including nitrogen dioxide, benzene, and methane. In addition, the CPUC's approval of the Induction Cooking MTI explicitly prioritizes deployment in environmental and social justice communities.

Ratepayers in these and similar communities have historically contributed the least to peak demand challenges and have the most to gain from lower electricity costs through programs like DSGS. By establishing a baseline of zero for load-connected appliance storage and encouraging participation, the CEC can help ensure that these communities share in the benefits of demand-side grid support while delivering broad societal value through reduced system costs and improved grid reliability.

VI. Adopting This Modification Will Not Affect Program Costs in the Short-Term

We understand clearly that the CEC has a tight budget with which to operate the DSGS program this coming summer. Adopting guidelines that allow for battery-embedded appliances to enter the market will not significantly increase costs during the 2026 program year. These technologies are still emerging, with under 1 MW of estimated installed capacity in the state today. Instead, the goal could be to create a pathway for these technologies to participate in the program, to further scale up distributed equipment's ability to operate flexibly when the grid is constrained. Adopting a baseline other than zero for these technologies will reduce their ability to participate in the program.

VII. Recommendation

We respectfully recommend that the CEC expand the definition of zero-baselined loads in the DSGS Program Guidelines to include load-connected storage that is integrated with appliances. We propose that the guidelines define this category to encompass battery storage systems whose primary function is to power a customer end-use appliance—such as induction stoves or heat pumps with integrated batteries. In these cases, the battery is subject to customer use constraints analogous to those recognized for EVSEs.

This expansion would be consistent with the CEC's stated objective of incentivizing incremental curtailment resources. It would also align the DSGS program with complementary state efforts, including the CPUC's Market Transformation Initiatives for induction cooking and room heat pumps, both of which emphasize 120-volt plug-in products with integrated batteries as critical tools for equitable electrification.

We appreciate the CEC's consideration of this comment and welcome the opportunity to discuss these issues further.

Respectfully submitted,

Sam Calisch
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