

CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES
QUARTERLY STAFF REPORT
MAY – AUGUST 2017

EXECUTIVE SUMMARY: THE PAST QUARTER AT A GLANCE (pages 1–2):

Western Grid Integration (full report on page 3)

CEERT’s recent grid-integration work has particularly focused on ensuring that a regional grid leads to *emission reductions in urban and disadvantaged communities*.

We are exploring the feasibility of California *exporting surplus midday solar energy* in exchange for *Pacific Northwest hydropower* that can help meet the state’s evening ramp requirements.

Grid Modernization and Reform (full report on pages 3 – 4)

CEERT projects on *reducing gas-fired generation* include work on alternatives to the Puente plant, meeting Local Capacity Requirements with clean resources, and identifying the most-polluting gas facilities.

Following grid market and operations analysis, CEERT has submitted policy recommendations to the California Independent System Operator’s (CAISO’s) *Flexible Resource Adequacy Criteria and Must-Offer Obligation (FRACMOO) stakeholder process* and the California Public Utilities Commission’s (CPUC’s) *Resource Adequacy proceeding*.

Inverter problems have been leading some solar photovoltaic facilities to trip off line, compromising grid reliability.

Transmission Planning (full report on page 4)

CEERT is advocating that the *CAISO’s 2017-2018 Transmission Plan* study transmission to comply with a 50% Renewable Portfolio Standard, as well as 2030 greenhouse-gas (GHG) targets, which the CPUC has refused to include in its assumptions.

Our longstanding efforts to help *resolve the dispute between CAISO and the Imperial Irrigation District (IID)* have finally borne fruit, with CAISO CEO Steve Berberich agreeing to push for *more geothermal development* in the Salton Sea area and IID pledging to drop its antitrust litigation against CAISO and *stop opposing regional grid expansion*.

Large-Scale Energy Storage (full report on page 4)

V. John White has held numerous discussions with developers and labor representatives to help build public and stakeholder backing for large-scale energy storage, including *pumped hydro projects*. CEERT also met with the California Water Foundation on the idea of collaborating with the California Department of Water Resources (DWR), State Water Contractors, and others to study ways to use the State Water Project to *expand clean energy and better integrate DWR’s system with a low-carbon grid*.

Discussions with the Governor’s Office (full report on page 4)

CEERT met with Saúl Gómez and Alice Reynolds to discuss *shortcomings at the CPUC*, alternatives to the *Puente plant*, *regional grid discussions*, and *gas emissions in disadvantaged communities*.

Advocacy at the California Air Resources Board (CARB) (full report on page 5)

CEERT talked with CARB staff about *better emissions monitoring*, problems with the CPUC’s approach to the *Integrated Resource Plan (IRP) proceeding* and *GHG targets*, and *challenges to CARB’s authority* from US-EPA and the auto industry.

Southern California Activities (*full report on page 5*)

Jim Caldwell has been appointed to the Community/Stakeholder Advisory Committee to advise the Los Angeles Department of Water and Power (LADWP) on its new *100% Clean Energy Study*. V. John White and Jim Caldwell met with senior Southern California Edison (SCE) officials on alternatives to the Puente power plant, and with retired LADWP General Manager Marcie Edwards on LADWP's *delay in repowering in-basin gas plants* and on prospects for *greater cooperation and planning* between LADWP and CAISO.

Advocacy at the California Public Utilities Commission (CPUC) (*full report on pages 5 – 19*)

In a final decision in the Renewable Portfolio Standard proceeding, CEERT obtained clarifications ensuring that the rules that govern the *treatment of Renewable Energy Credits* applied to both Category 2 and Category 3 resources.

CEERT strongly advocated for *procurement* to be an explicit outcome of initial *Integrated Resource Plans* (IRPs) due in 2018, and submitted comments and responses in the IRP proceeding on key topics such as *GHG emission targets*, *high-benefit grid infrastructure and resources*, *ratepayer savings from use of the Production Tax Credit and Investment Tax Credit*, and the relationship between Load-Serving Entities' IRPs and *bundled procurement plans*.

CEERT's testimony, earlier Study, and cross-examination of PG&E witnesses argue for a CPUC commitment to replace the *Diablo Canyon power plant's* output with *GHG-free resources*, and to CPUC approval of Tranches #1 and #2 as replacement procurement in the current Diablo Canyon proceeding both to meet bundled customer need and provide a contingency plan for Diablo's possible early retirement.

In the *Resource Adequacy* proceeding, CEERT filed critical comments on CAISO's Draft Local Capacity Requirements and Flexible Capacity Requirements studies. We demonstrated that the record does not support adoption of "durable" rules for multiyear procurement, and that the CPUC must ensure more transparency, timeliness, and clarity of prices and comparisons of actual results to forecasted needs.

We believe that options for meeting the *Moorpark area's Local Capacity Requirements* with preferred resources have been undermined by poor CPUC decisions, poor timing, and poor regulatory management.

CEERT remains convinced that unless we make significant progress on *demand response (DR)*, we will continue to have difficulty *stopping new gas development* and *retiring existing gas facilities*.

Clean Transportation Advocacy (*full report on pages 19 – 21*)

CEERT is coordinating with state and national nongovernmental organizations (NGOs) to defend the 2022-2025 *vehicle emissions standards* against current federal efforts to roll them back.

CEERT continues to track the CPUC's *Alternative-Fueled Vehicles rulemaking* (R13-11-007) and the investor-owned utilities' transportation electrification plans, as several CEERT affiliates are active in these proceedings.

CEERT helped lead NGO advocacy on VW's *cheating on emission certification tests* and how VW should be required to mitigate damages and accelerate development of a *market for zero-emission vehicles (ZEVs)* in California. In response to our criticisms, Volkswagen/Electrify America's revised \$200 million Cycle 1 ZEV Investment Plan now highlights many opportunities to *promote deployment of electric vehicles in the Central Valley*.

Short-Lived Climate Pollutants (SCLPs) (*full report on pages 21 – 22*)

CEERT considers CARB's adoption of the *Short-Lived Climate Pollutant Reduction Strategy* as the culmination of our more than decade-long advocacy leadership on the need for SLCP reductions. We will work closely with our colleagues at Californians Against Waste to help ensure that the state can achieve or exceed its goal of a 75% reduction by 2025 in *diverting organic waste from landfills*. We are also part of the Dairy/Livestock Working Group on *reducing methane from dairies and livestock*, we are working with NGO colleagues and state agencies on further scaling back *hydrofluorocarbon refrigerants*, and we are continuing our efforts to reduce *black carbon emissions*.

Western Grid Integration

Discussions continue on changing the selection process of the California Independent System Operator (CAISO) Board of Governors in order to enable utilities from other states to join, and thus create a more efficient Western Interconnection. CEERT Executive Director V. John White and Grid Policy Director Liz Anthony continue to work with the Fix the Grid campaign to develop a path for regional grid integration as an essential part of the strategy for a low-carbon grid. We are especially focused on ensuring that a regional grid leads to emission reductions in urban and disadvantaged communities.

CEERT is currently working with stakeholders from California and other parts of the West on additional steps to increase regional coordination and cooperation, even as full grid integration discussions continue. Liz Anthony and CEERT Senior Technical Consultant Jim Caldwell have been talking with colleagues in the Pacific Northwest to develop strategies and encourage discussions on the feasibility of California exporting surplus solar energy at midday in exchange for Pacific Northwest hydropower providing flexible capacity that can help meet the state's evening ramp requirements.

Grid Modernization and Reform

The first half of 2017 has seen an acceleration of the “duck curve,” with high levels of solar generation leading to low net-loads at midday, followed by a steep evening ramp, and some of the highest load days in the past decade. This past quarter, CEERT has taken the opportunity to analyze market and operations data and identify inefficiencies in current policies and practices. Liz Anthony has organized a working group with colleagues from California and other Western states focused on evaluating data and developing policy recommendations to improve the transition to a low-carbon grid. CEERT has led comment submissions from this group to the CAISO's Flexible Resource Adequacy Criteria and Must Offer Obligation (FRACMOO) stakeholder process, as well as the California Public Utilities Commission's (CPUC's) Resource Adequacy proceeding.

CEERT is also undertaking efforts aimed directly at decreasing the gas burn, especially in urban and disadvantaged communities. Jim Caldwell has been working with the City of Oxnard to advocate for clean energy procurement as an alternative to the gas-fired Puente power plant to meet Local Capacity Requirement (LCR) in the Moorpark subregion. LCR has been the primary driver of new gas-fired power plants in California. Jim will lead a study systematically identifying means to meet LCR need throughout the CAISO footprint with clean energy resources. In conjunction with this study, Liz Anthony is developing a database and analyzing the California gas fleet's generation and emissions to determine trends and identify the most-polluting and least-needed gas plants during the transition to a low-carbon grid.

Inverter-Based Issues

Over the past year, there have been several instances when new utility-scale solar PV projects have tripped off line during “normally cleared” transmission faults. This phenomenon compromises grid reliability, and the problem must be solved. Interconnection standards that are in place should prevent this from occurring. Although most of the unanticipated outages have occurred on the Southern California Edison system, there have also been trips on the PG&E system and on the APS system in Arizona. The North American Electric Reliability Corporation (NERC) has sponsored a national task force to understand and rectify this problem.

Liz Anthony and Jim Caldwell have participated in workshops on the issue and are actively monitoring the situation. In the meantime, CAISO is carrying significantly more spinning reserves to guard against the consequences of these trips. This means higher market prices and reduced capacity for summer high-load hot days. Unless the problem is resolved before fall and spring light-load sunny days, we can also expect increased overgeneration and renewable curtailments.

Given current political controversies on the accelerated retirement of baseload generation such as coal and nuclear, the desire to blame “intermittent” wind and solar for compromising grid reliability, and the potential of preferred resources to take over supply of essential reliability services from fossil generation in the future, prompt resolution of the issue should be a priority for CEERT members. At this point, the problem appears to be mainly human—caused by inconsistent codes and standards and poor communication among planners, protection engineers, equipment manufacturers, and project developers and operators.

Transmission Planning

CEERT has continued to engage with the California Independent System Operator’s (CAISO’s) Transmission Planning process, laying the groundwork for a significant effort on the 2017-2018 Transmission Plan. A particular concern is the need to overcome the narrow set of future generation assumptions that the California Public Utilities Commission (CPUC) requires CAISO to use. At a minimum, we need CAISO to study the transmission needs for complying with a 50% Renewable Portfolio Standard, as well as 2030 GHG targets, which the CPUC has refused to include in its assumptions.

In addition, CEERT’s longstanding efforts to help resolve the dispute between CAISO and the Imperial Irrigation District have finally borne fruit. CAISO and IID have reached an agreement on a number of issues, including allocation of deliverability of imports from IID to CAISO. Even more significant, CAISO CEO Steve Berberich has become convinced of the need and value of additional geothermal development in the Salton Sea region to help balance California’s renewable portfolio and reduce our dependence on natural gas for reliability. He has agreed to meet with CPUC Commissioners and the Governor’s office to convey this message. At the same time, IID has pledged to drop its antitrust litigation against CAISO, and will no longer oppose regional grid expansion.

Large-Scale Energy Storage

CEERT continues to explore avenues for the procurement of large-scale energy storage, including pumped hydro projects. V. John White has had numerous discussions with potential developers, and with representatives of organized labor. Tom Dalzell of International Brotherhood of Electrical Workers 1245 (PG&E and Northern Nevada), who is highly influential in the California labor community, is very supportive of new pumped hydro. John has begun working with a new group of large-scale storage advocates, including the sponsors of the Eagle Crest project in Riverside County, to help build public and stakeholder backing for large-scale storage.

CEERT has also met with the California Water Foundation on the idea of collaborating with the California Department of Water Resources (DWR), State Water Contractors, and environmental non-governmental organizations to study the DWR system and its infrastructure, and identify barriers to the greater utilization of the State Water Project to expand clean energy and better integrate its system with California’s future low-carbon grid.

Discussions with the Governor’s Office

V. John White and Liz Anthony met several times with Saúl Gómez and Alice Reynolds to discuss our concerns about the actions (and inaction) of the CPUC, notably its reluctance to include new renewable procurement in the Diablo Canyon proceeding, the “black hole” of the Integrated Resource Plan, the lack of transparency in its overall approach and methodology, the assumptions and time line that will result in new procurement delayed beyond the expiration of federal tax credits, and procurement continuing to be primarily solar and gas, with little or no regional wind and no new geothermal.

We briefed Saúl and Alice on Jim Caldwell’s analysis of the availability and cost-effectiveness of preferred resource alternatives to the Puente gas-fired power plant in Oxnard, and the need for the California Energy Commission to deny or suspend NRG’s Puente application while the CPUC directs Southern

California Edison to undertake a new solicitation for preferred resources in the Moorpark sub-region. And we shared intelligence on the status of regional grid expansion discussions, the additional issues beyond governance, and the analysis Liz has been developing on the emissions from gas plants in disadvantaged communities.

Advocacy at the California Air Resources Board (CARB)

V. John White met with CARB Executive Officer Richard Corey to discuss the need for better emissions monitoring and reporting for both criteria pollutants and greenhouse gas emissions, and our concerns with the CPUC's approach to Integrated Resource Planning and greenhouse-gas (GHG) targets. John White and John Shears also met with senior CARB staff to discuss strategies for defending CARB's authority from challenges by US-EPA and the auto industry, and the newly announced mid-term review of federal fuel economy and vehicle emissions standards.

Southern California Activities

Jim Caldwell has been appointed to the Community/Stakeholder Advisory Committee to advise the Los Angeles Department of Water and Power on the 100% Clean Energy Study that the Department has initiated. LADWP has contracted with the National Renewable Energy Laboratory team that CEERT worked with on the 2030 Low Carbon Grid Study.

V. John White and Jim Caldwell met with Colin Cushnee and other senior officials of Southern California Edison to present options and alternatives to the Puente power plant that Jim developed on behalf of the City of Oxnard. We also met with Marcie Edwards, recently retired General Manager of LADWP, to discuss LADWP's decision to delay repowering in-basin gas plants, ways to encourage greater cooperation and planning between LADWP and the California Independent System Operator (CAISO), and key issues like cost allocation that need to be addressed.

Advocacy at the California Public Utilities Commission (CPUC)

Renewable Portfolio Standard (RPS) Program (R.15-02-020)

In February, Commissioner Rechtschaffen became the Assigned Commissioner to R.15-02-020, replacing Commissioner Peterman. Since then, a Proposed Decision on revised compliance requirements was issued, the investor-owned utilities' (IOUs') long overdue update to the Joint IOU Proposal for Use of Effective Load Carrying Capability (ELCC) for RPS Procurement was filed, and the IOUs and load-serving entities (LSEs) submitted their annual RPS Plans.

The Proposed Decision (PD) on revised compliance requirements was issued on May 26. On June 15, CEERT filed Comments seeking revisions that would ensure that the calculation of excess procurement for Categories 2 and 3 was in compliance with SB 350. The final decision (D.17-06-026) was issued on June 29; see: <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M191/K530/191530416.PDF>. The decision made the clarifications that CEERT sought to ensure the rules governing the treatment of RECs applied to both Category 2 and Category 3 resources.

The Joint Updated IOU ELCC Proposal was filed on May 31. See: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M192/K869/192869027.PDF>.

On May 26, an Assigned Commissioner/ALJ Ruling was issued that set out the schedule for submission of the IOUs'/LSEs' RPS Plans, and made a Renewable Auction Mechanism (RAM) proposal that would provide an opportunity to target procurement by geographic location. See: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M187/K576/187576811.PDF>. Comments on the RAM proposal were filed in June. The IOUs' RPS Plans were submitted on June 30, with Comments filed on August 18.

The IOUs continue to maintain that they have enough renewable resource procurement to date to comply with the RPS, and that solicitations this year are unnecessary. However, in Comments filed on August 18 by Independent Energy Producers and American Wind Energy Association California Caucus, the IOUs' assessment of future need was challenged, and both groups urged the Commission to order procurements by the IOUs, especially in recognition of the cost-savings to ratepayers that could be achieved by taking advantage of expiring tax credits. The Large-Scale Solar Association further asserted that, even if the need assessments by the IOUs were correct, the same circumstances did not exist for CCAs and ESPs, and the Commission must take action to ensure procurement by these LSEs to meet their RPS obligations.

While CEERT did not file Comments on either the RAM proposal or the RPS Plans, we continue to track this proceeding and will support positions that ensure adequate, timely procurement of renewables, especially to achieve compliance with SB 350, in response to the PD expected in the fourth quarter of 2017.

Integrated Resource Planning (IRP) / Long-Term Procurement Planning (LTPP) (R.16-02-007)

R.16-02-007 is now predominantly focused on compliance with SB 350's Integrated Resource Planning (IRP) provisions, but continues to move at a glacial pace to implement those provisions. A Proposed Decision on guidance to the LSEs for their IRPs, once expected to be issued in April, is now not due until the end of 2017, with the LSEs' IRP filings not due until the second quarter of 2018. A Reference System Plan is expected to be issued on September 12, but a recent email from CPUC Staff indicated that parties may be able to suggest alternative modeling scenarios even after that Reference Plan is issued.

The Staff Proposal on Guidance on 2017 IRP process, originally due in March, was issued for comment as an Attachment to an ALJ's Ruling issued on May 16, and can be found at: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M186/K437/186437743.PDF>. The ALJ's Ruling sought responses to questions posed on the following multiple topics: (1) Guiding Principles, (2) Disadvantaged Communities Objectives, (3) Overall IRP Process, (4) 2017-2018 IRP Process, (5) Electric Sector 2030 GHG Emissions Targets, (6) LSE-Specific GHG Emissions Targets, (7) Modeling in 2017-2018, (8) GHG Emissions Scenarios to be Modeled, (9) Modeling Assumptions, (10) Modeling Outputs and Metrics, (11) Sensitivities, (12) Futures, (13) Costs, (14) Risks, (15) Disadvantaged Communities Definition, (16) Demand-Side Resources, (17) Supply-Side Resources, (18) Short-Term Investments, Actions, or Procurement, (19) Transportation Electrification, (20) Reference System Plan Development, (21) LSE Filing Process, (22) General LSE Filing Requirements, (23) Technical LSE Filing Requirements, (24) LSE IRP Filing Template, (25) Standard and Alternative IRPs, (26) Individual LSEs, (27) Individual LSE Load Determination, (28) Individual LSEs, (29) Marginal GHG Abatement Cost/Planning Price, (30) Relationship Between IRPs and Procurement, (31) Relationship Between IRPs and Bundled Procurement Plans, (32) Disadvantaged Communities Impacts in Procurement, (33) Cost Allocation and Cost Recovery, (34) Alignment of IRP Process with Other Commission Resource Proceedings, (35) Preferred System Plan, (36) Alignment with CEC's Integrated Energy Policy Report (IEPR) and CAISO's Transmission Planning Process (TPP), and (37) Regional Planning.

Responses and Opening Comments on the IRP Staff Proposal were initially due on June 14 and Reply Comments on June 26. However, on June 13, ALJ Fitch issued a Ruling that postponed the due date for Responses and Opening Comments to June 28 and Reply Comments to July 12.

Along with 53 other parties, CEERT filed Responses to May 16 ALJ Ruling and Opening Comments on the IRP Staff Proposal on June 28. Our Responses to Questions and Comments are summarized below:

- Guiding Principle: A Guiding Principle should be added to clarify the IRP process's role in providing guidance on IRPs that will result in authorization of procurement.

- Overall IRP Process: CEERT recommends a paring down of the Reference Plan development to focus on system-wide modeling efforts on identifying high-capital-cost, long-lead-time, high-benefit grid infrastructure and resources. There should be greater clarity on how the plans will be carried out.
- 2017-2018 IRP Process: Developing a single optimal portfolio is not the intent of the statute. Multiple effective portfolios likely have similar characteristics that should be identified and passed to LSEs for LSE plans. This would allow flexibility for LSEs to determine resource portfolios that meet the needs of their load.
- Electric Sector 2030 GHG Emissions Targets: CEERT supports using the CARB Scoping Plan.
- GHG Emissions Scenarios to be Modeled: It is inappropriate for the smallest reduction to be the default target. The planning target range should be 42-52 million metric tons to align the IRP modeling efforts with the CARB Scoping Plan assumptions.
- Short-Term Investments, Actions or Procurement: Short-term procurement should be authorized for identified high-capital-cost, long-lead-time and high-benefit resources, to maximize ratepayer savings through realizing the full Production Tax Credits (PTCs) and Investment Tax Credits (ITCs), and to ensure there is no GHG increase due to Diablo Canyon closing should procurement not be identified in A.16-08-006 (Diablo Canyon).
- Reference System Plan Development: Emphasis should be placed on finding common characteristics between well-performing portfolios.
- LSE Filing Process: Any filing requirement should not stand in the way of consideration and approval of utility applications, such as A.16-08-006 (Diablo Canyon).
- Relationship between IRPs and Procurement: There is no clear directive for procurement until after the 2020 cycle. In order to realize the full ratepayer cost savings of the wind PTC and solar and storage ITCs, and to prevent increase in GHG emissions due to the planned closure of Diablo Canyon, procurement must result from the 2017-2018 cycle, especially if no GHG-free energy procurement is authorized in A.16-08-006. Procurement should be an explicit outcome of the IRP process, the 2017-2018 cycle should initiate a zero-carbon procurement process, and the Commission should initiate procurement directly out of the IRP and utilize IRPs during procurement approval.
- Relationship between IRPs and Bundled Procurement Plans: Bundled procurement plans should be directly informed by IRPs, and bundled procurement should not be delayed.
- Alignment of IRP Process with other Commission Resource Proceedings: The IRP should more explicitly consider all RA requirements to ensure there are no “missed” GHGs. Should resource adequacy (RA) requirements be a barrier to GHG reductions, the IRP should give guidance to the RA proceeding to determine appropriate changes to remove the barriers. The RA proceeding should also explicitly consider options to reduce the requirement to acquire and operate fossil resources for local and flexible RA.

On July 12 CEERT filed Reply Comments, which noted that many parties have joined us in urging that procurement be an explicit outcome of the LSEs’ IRPs. We also supported parties that argued that the Commission must undertake an immediate examination and resolution of cost allocation relative to IRPs.

On July 15, the CPUC held a workshop on the Preliminary RESOLVE Modeling Results for the IRP process, with CPUC Staff answering questions and receiving preliminary public feedback. A second workshop was held on August 15, on the California Energy Systems for the 21st Century (CES-21) Grid Integration Flexibility Metrics Project Final Report Presentation. The project uses the Strategic Energy Risk Valuation Model to assess the reliability and operational flexibility of California’s electric system. This was presented to the IRP proceeding’s Modeling Advisory Group as a possible analytical tool for evaluating the reliability of system portfolios under consideration in the IRP proceeding.

With the delays in the proceeding, continued concerns about cost allocation between IOUs and other LSEs (including Community Choice Aggregators (CCAs)), and ongoing uncertainty on what precisely

will be the required content of the initial LSE IRPs due in 2018, it is not clear as of this writing whether those initial IRPs will provide any opportunity for the procurement of GHG-free energy, including renewables. CEERT and other parties have strongly advocated for procurement to be an outcome of those early IRPs, both to begin the process of meeting the state's GHG emission reduction goals and to take advantage of expiring tax credits.

The prospect for near-term procurement of GHG-free energy was actually the strongest basis of the original Joint Proposal made in A.16-08-006 (Diablo Canyon). However, PG&E and the Joint Parties to that proposal have decided to withdraw Tranches 2 and 3 of GHG-free energy procurement from that proposal and have all procurement decisions made in the IRP proceeding, but with a "policy commitment" to having any need associated with Diablo Canyon's retirement met by GHG-free resources.

CEERT remains concerned that such a "policy commitment" in a separate application might not be recognized as binding in the IRP proceeding (especially since parties and scope are different), whether or not the CPUC adopts it in A.16-08-006. We have continued to advocate strongly for some GHG-free energy procurement to replace Diablo Canyon output being authorized in A.16-08-006, especially to permit an RFO process to proceed for deliveries to meet Diablo Canyon's expected retirement in 2024/2025, or as a contingency against the likelihood of earlier retirement of this aging facility. We do not believe the IRP proceeding provides any near-term guarantees of procurement that would start in the next year or two, even with delivery delayed to a future date, given the ongoing delays and uncertainties in the process.

On August 31, Sara Myers and John White met with CPUC Commissioner Randolph on IRP issues.

A.16-08-006 (PG&E Diablo Canyon Closure & Proposed Procurement Plan)

On August 11, 2016 PG&E filed A.16-08-006, seeking approval of its plan to retire its Diablo Canyon Power Plant (DCPP) and related proposals, including a Joint Proposal by PG&E and several organizations to replace a portion of Diablo Canyon's output with "greenhouse-gas-free renewable energy, efficiency and energy storage resources." This jointly proposed procurement plan involved three "tranches" of procurement: Tranche #1 (2,000 GWh of energy efficiency installed by the end of 2024); Tranche #2 (an all-source solicitation of 2,000 GWh of GHG-free energy for delivery in 2025-2030); and Tranche #3 (a voluntary commitment to a 55% RPS to start in 2031).

CEERT has been actively involved in the retirement of Diablo Canyon and its replacement with carbon-free resources since before the filing of this application, including providing initial analysis to Friends of the Earth in Q2 2016 on "A Cost Effective and Reliable Zero Carbon Replacement Strategy for Diablo Canyon Power Plant." CEERT's January 27 Opening Prepared Testimony supported the closure of Diablo Canyon, and urged that the Commission adopt as CPUC policy the Joint Parties' recommendation to replace the entire amount of Diablo Canyon's energy with carbon-free resources, and require that any system capacity shortfall resulting from Diablo Canyon's retirement be carbon-free as well.

While PG&E has sought to withdraw two of the three proposed tranches of GHG-free energy procurement, those tranches remain within the scope of A.16-08-006, and having CEERT's testimony, our Study, and our cross-examination of PG&E's witnesses as part of the evidentiary record argues for a CPUC decision to move forward with such procurement to start progress toward meeting SB 350 goals, or, at the least, to commit to the replacement of Diablo Canyon's output with GHG-free energy resources.

During evidentiary hearings, CEERT cross-examined PG&E witnesses about PG&E's positions on the IRP, its current proposals in A.16-08-006, and replacement of DCPP's output by GHG-free resources.

CEERT's May 26 Opening Brief in this proceeding made the following arguments:

- PG&E has demonstrated that retirement of Diablo Canyon is reasonable and prudent, but given the plant's age, cost and known structural shortcomings, a contingency plan for the event of its early retirement prior to 2024 or 2025 is prudent and should be adopted in this Application.
- Tranche #2 remains a viable, conservative and important SB 350-compliant "early action" to timely replace Diablo Canyon output with GHG-free energy that, along with Tranche #1, must be authorized in this Application, and such a modest procurement would be well within PG&E's forecasted bundled customer need in 2024/2025 and would, therefore, not require any changed or new ratemaking mechanisms, including those related to cost allocation with CCAs.
- Adoption of Tranche #1 and Tranche #2 procurement should be coupled with a requirement for public and transparent development of competitive solicitations for both and, given the CPUC's lack of success in formulating and implementing successful preferred-resource procurements, the process for developing such requests for offers (RFOs) should start immediately. Further, to take advantage of expiring tax credits, those RFOs should be issued in the near term for later energy deliveries, as necessary.

CEERT's June 16 Reply Brief addressed the following issues:

- Retirement of Diablo Canyon has a strong record and party support.
- Parties in addition to CEERT have demonstrated that adoption of a contingency plan in the event of Diablo Canyon's early retirement is reasonable and necessary, and CEERT's recommendation for approval of Tranches #1 and #2 in this Application remains the most conservative, viable and expeditious such contingency plan.
- Several parties have addressed the impact of delays in the IRP proceeding on replacement of Diablo Canyon output with GHG-free energy.
- The Joint Parties' support for further delay in the IRP proceeding or agreement to defer Diablo Canyon procurement to the IRP in the face of ongoing delay undermines their commitment to timely replace Diablo Canyon output with GHG-free energy.
- The Commission's authorization of Tranche #2 in this Application is a viable, conservative, and important SB 350-complaint "early action" to timely replace Diablo Canyon output with GHG-free energy, is well within PG&E's forecasted bundled customer need in 2024/2025, can be accomplished using existing ratemaking mechanisms, and can lead to a successful RFO process for that purpose, including procurement now for later energy deliveries to take advantage of expiring tax credits.

A Proposed Decision is expected in the fall of 2017. In our briefs, CEERT and the San Luis Obispo Mothers for Peace requested Oral Argument. Given the current state of the CPUC's ex parte rules, oral argument may be the only opportunity for CEERT and other parties to address the Commission directly on this Application and any Proposed Decision. While additional "public participation hearings" have now been scheduled for September, there has not yet been a ruling on whether oral argument will be held.

For both substantive and procedural reasons, CEERT's ongoing advocacy in this proceeding remains critical, especially to continue to put pressure on the CPUC to meet its obligations under SB 350 and to ensure timely, meaningful procurement of GHG-free energy.

Resource Adequacy (RA) (R.14-10-010)

CEERT has actively participated in the current phase of R.14-10-010, to ensure appropriate review of such concepts as "flexibility" and ensure fair consideration of the attributes and value that Loading Order preferred resources (e.g., renewable generation) provide to meet RA obligations. In our view, this RA proceeding remains exceedingly resistant to change in light of the need to replace natural gas with zero-carbon alternatives as the principal means of supplying Essential Reliability Services.

On April 28, CEERT filed Comments on the California Independent System Operator's (CAISO's) Draft LCR (local capacity requirements) and FCR (flexible capacity requirements) Studies. We reviewed how both studies and current CAISO methodologies reflected an ongoing overstatement of the capacity value of solar resources, understatement of the capacity value of wind resources, and overstatement of the capacity value of gas resources due to the failure to include forced outage rates in the calculation of the Net Qualifying Capacity of gas facilities.

We also demonstrated that the current record does not support adoption of "durable" rules for multiyear procurement, and that the CPUC must make clear that its policy going forward is to ensure significantly more transparency, timeliness, and clarity of prices and comparisons of actual results to forecasted needs. We believe the two draft CAISO Studies clearly demonstrate the adverse impact of the current complexity and lack of transparency in assessing LCR and FCR requirements, and the need to reverse that trend.

On May 25, the CPUC issued its annual RA Proposed Decision (PD) for the 2018 RA Program Year. As in many of the RA decisions in the last several years, the Commission again elected to defer decisions on many of the most needed changes to the RA process, especially to bring it (and CAISO) into alignment with the state's GHG emission reduction goals. However, the PD gave significant attention to, and support for, CEERT's critique of the failings of the CAISO's studies, especially delays and lack of transparency, starting at page 13:

"The Center for Energy Efficiency and Renewable Technologies (CEERT) similarly argues that: '[T]he current complexity and lack of transparency continue to adversely impact any assessment of the LCR and FCR requirements...' (CEERT May 5, 2017 Comments at 3.)

"Specifically, CEERT states:

"In CEERT's Opening Comments on the Draft 2018 LCR and Draft 2018 FCR Studies, CEERT expressed concern that the "CAISO calculates the Local Capacity Requirements (LCR) need by a complex, but completely transparent process whose mere outline requires some twenty-five pages to describe" and that, while "the FCR need" calculation methodology is transparent, "the underlying metric and the resources deemed qualified to satisfy that need are anything but clear," including "what the incremental cost of FCR actually is or what resources are actually supplying flexibility in real time." [fn. omitted] The Final 2018 LCR Study and Final 2018 FCR Study, for which links were served by CAISO to the service list in this proceeding on May 1, 2015, do not provide any greater clarity for either study.

"Thus, not only has a very limited amount of time (4 days) been allowed to review these final studies, but neither includes redlined revisions, so it is nearly impossible to quickly determine what changes, if any, have been made and whether those changes are meaningful or responsive to comments by parties. (Id. at 2-3.)"

The PD shared these views, noting CAISO's "inability or refusal to meet the Commission's deadline" and the adverse consequences of such action on the opportunity for adequate review by either the CPUC or parties. (Proposed Decision, at p. 14.) The PD, hard pressed to do otherwise, adopted the CAISO's studies, but did so with the caveat that such a "rubber stamp" of the studies was not to be expected and that the CPUC may further examine the inputs, processes, and results of those studies in this or a successor proceeding. These findings were maintained in the final decision (D.17-06-027 (at pages 13-14)).

Notwithstanding this recognition, CEERT, in our June 14 Comments on the PD, urged that the final decision should provide more detail on the Commission's examination of the CAISO's studies, should pro-

vide direction on a process for re-evaluating and redefining flexible RA, and should adopt the ELCC (effective load carrying capability) methodology only for one year as a transition to a full ELCC.

Prior to the issuance of the final decision, CEERT's Jim Caldwell, Megan Myers, and Sara Myers also met with the Commissioners' offices (advisors) to detail our recommendations for how the CPUC should move forward on RA, consistent with current state clean energy policies. As part of these meetings, we provided a summary of needed RA reforms to be addressed in the final decision or, at the least, included in the next RA rulemaking. That summary, focusing on needed transparency and system, local, and flexible RA reforms, was filed as an attachment to CEERT's Notices of Ex Parte Communications, including: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M192/K274/192274562.PDF> .

On June 29, the CPUC issued a final decision, D.17-06-027; see: <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M192/K027/192027253.PDF> . While the final order made few changes from the Proposed Decision, it continued to include all the above language on CEERT's comments and the Commission's ability to further examine the CAISO Studies. The final order, consistent with CEERT's comments, also advised that the ELCC would be subject to refinement in the future, and that, "In future RA proceedings the Commission may re-examine whether a durable FCR program should continue to be a prerequisite to adoption of a multi-year RA requirement." (D.17-06-027, at p. 18.)

Somewhat unexpectedly, Commissioners Guzman-Aceves and Peterman announced they would file a concurrence to this decision to emphasize the importance of preferred resources. This Concurrence begins: "In concurrence with our decision today we emphasize that we expect load serving entities to use preferred resources to the greatest extent possible when meeting resource adequacy obligations," and ends, "we expect the utilities' resource adequacy procurement to maximize contracting with preferred resources first."

The Joint Concurrence does not address how that should be accomplished and certainly does not acknowledge the role the Commission continues to play in approving gas over preferred resources. Nevertheless, CEERT hopes that this kind of thinking, along with our own list of reforms, ends up serving as a basis for directions given in the next RA Rulemaking (since D.17-06-027 closes the current proceeding). The new Rulemaking is likely to be issued in the fall of 2017, and CEERT will continue to be actively involved.

In the meantime, the companion CAISO process known as Flexible Resource Adequacy Criteria and Must Offer Obligation 2 continues to plod along, vacillating between band-aids to the current system and wholesale restructuring of the current Flexible RA paradigm with no clear resolution in sight. Although there is clear consensus among most parties that the current Flexible RA framework is a complete failure and that many resources, especially imports and preferred resources, cannot effectively participate in the current system, there is no consensus on a near-term way forward. Hopefully, the fall Rulemaking will provide some momentum to break the logjam.

Local Capacity Requirement (LCR) and Preferred Resources Procurements

As described in prior Quarterly Reports, the CPUC's 2012 LTPP rulemaking ended with disappointing decisions authorizing local capacity requirement (LCR) procurement for SCE and SDG&E that almost exclusively favored gas-fired generation over preferred resources.

The only issue that remains pending is the resolution of the second phase of A.14-11-016 (SCE LCR Request for Offers (RFO) for Moorpark), which is SCE's application for approval of the 54 MW Ellwood Refurbishment contract and its related 0.5 MW energy storage contract. SCE, NRG and CAISO have advocated for CPUC approval of the contracts, citing the unique reliability need in the Santa Barbara/Goleta region, while this option has been opposed by Sierra Club and Office of Ratepayer Advocates (ORA).

On April 7, the CPUC issued a Proposed Decision (PD) that rejected the Ellwood contract and the linked energy storage contract in order to “give the Commission additional time to explore whether any approved need in the Santa Barbara/Goleta area can be met in a manner more consistent with the Commission’s goals of reduced reliance on fossil fuel.”

While this might seem like a decision consistent with CEERT’s goals to reduce reliance on gas, it actually would have been preferable, from a clean-energy and environmental-justice perspective, for the Puente Project in the same LCR area to be denied, and this project, which is much smaller and shorter in duration, to remain, with additional need met by preferred resources. Unfortunately, the timing of the CEC’s CEQA Review of Puente (which has not been completed), along with the CPUC’s initial flawed decision to approve the contract and not defer to the CEC, has meant that the best decision to meet Moorpark’s LCR has been undermined by poor timing and poor management of the overall regulatory processes.

Comments on the PD were filed in late April and early May. While the PD could have first been considered on May 11, the Commission has repeatedly held it, including the most recent “hold” by Commissioner Rechtschaffen until September 14. The current version of the PD can be found at: <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M194/K534/194534196.PDF>

Preferred Resources Pilot Requests for Offers (PRP RFOs)

In 2012, as a result of the SONGS and OTC retirements, SCE began to develop and launch “preferred resources pilot requests for offers” to meet certain needs in identified geographic areas.

SCE PRP RFO 1: The CPUC approved two power purchase agreements SCE entered into with SunEdison for a combined 2.2 MW of solar photovoltaic projects from this RFO in D.16-09-006, but these projects have not gone forward. An ORA application for rehearing of D.16-09-006 is still pending, and on January 19, SCE wrote to the CPUC’s Legal Division that it had terminated both the SunEdison contracts.

SCE PRP RFO 2: Despite this lack of success, SCE launched a second PRP RFO on September 24, 2015, and on November 4, 2016, it filed A.16-11-002, seeking approval of 19 contracts for 125 MW of preferred resources that interconnect to the substations and circuits electrically in-line with either the Johanna A-Bank substation or the Santiago A-Bank substation. These preferred resources include 60 MW of in-front-of-the-meter energy storage (ES), 55 MW of demand response supported by ES and load reduction, and 10 MW of behind-the-meter solar PV paired with ES.

ORA protested this application, primarily on the grounds that SCE’s PRP is an “internal program for which SCE has not sought Commission approval” and one that is either at odds with or could be subsumed in existing programs. A Scoping Ruling was issued in A.16-11-002 on April 21, with a schedule for testimony and evidentiary hearings to take place in August. SCE and ORA have communicated to the ALJ jointly that data requests would be submitted in lieu of cross examination, but the ALJ has indicated that the evidentiary hearing dates will remain unless SCE and ORA have submitted stipulated facts and accept the introduction of various CAISO studies into the record, in which case briefs would follow, with an eventual Proposed Decision to be issued later this year.

SDG&E PRP RFO: On April 19, San Diego Gas and Electric filed an Application for approval of contracts signed from its Preferred Resources LCR RFO. The Application (A.17-04-017) asks for approval of 88 MW of new preferred resource contracts; however, like all of SDG&E’s recent procurements, it is extremely light on demand response and RPS-eligible resources, and consists of several battery storage installations and one AAEE contract. ORA filed a protest to the Application on May 30, identifying issues such as whether or not these procurements actually comply with the preferred-resources directions the CPUC has given to SDG&E. CEERT plans to continue to track this application.

Demand Response (DR)

CEERT has become increasingly convinced that DR is the key to dethroning gas-fired resources from their virtually exclusive position of supplying Local Capacity Requirements and other Resource Adequacy products. Unless we make significant progress on DR, we will continue to have difficulty stopping new gas development and carrying out an orderly retirement schedule for existing gas facilities. Therefore, CEERT continues to advocate vigorously before the CPUC and other agencies to strengthen existing DR programs while pressing for changes in DR procurement, and to urge the CAISO Board of Governors and senior management to reduce barriers to expanded use of this critical resource.

On May 4, the CPUC issued D.17-04-045, which addressed the Petition for Modification (PFM) filed by OhmConnect requesting to modify D.16-09-056 and the PFM filed by the Joint DR Parties (JDRP) requesting to modify D.16-06-029, both of which involved the continuation of the DR Auction Mechanism (DRAM) Pilot. D.17-04-045 denies OhmConnect's request to expedite evaluation of the DRAM Pilot because the proposed timeline is unreasonable. The decision also denies the JDRP request to increase the budget for the DRAM Pilot because the record does not support doubling the budget for the second year of delivery. However, D.17-04-045 grants the JDRP's request to modify D.16-06-029 to be consistent with Resolution E-4817, which allows for two years of delivery.

On May 11, Assigned Commissioner Guzman-Aceves issued an Amended Scoping Memo in this proceeding. The Ruling notes that the CPUC requires additional time to complete outstanding issues from Phases Two and Three, including addressing the proposal to implement the cost causation competitive neutrality principle and whether to authorize an auction in 2018 for the DRAM Pilot, with 2019 deliveries. Phase Four will include two new issues: pursuing the steps necessary to resolve any barriers to new models of DR, and considering the design of new models. The Ruling extends the deadline of the proceeding to November 11, 2018, and anticipates that a Proposed Decision addressing the competitive neutrality principle and DRAM will be issued in August or September. The Amended Scoping Memo can be found at: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M185/K575/185575809.PDF>

On May 22, Assigned ALJ Hymes issued a Ruling that asked for responses to questions about the remaining barriers to integrating DR into the CAISO market, questions about the pathway to implementing new models of DR, and questions about the implementation of the cost causation competitive neutrality principle. See: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M187/K328/187328217.PDF>

DR Applications

Parties served Direct Testimony on May 10 and Rebuttal Testimony on June 2 on the IOUs' Applications for Approval of their 2018 – 2022 DR Programs. Evidentiary Hearings took place in June.

An issue that has arisen in these proceedings and the EE Business Plan Applications (A.17-01-013, et al.) is the integration of DR-enabling technologies and relevant EE programs. On June 26, the CPUC's Energy Division held a workshop on this issue. On June 30, ALJ Hymes and ALJ Atamturk issued a Ruling that directed parties to respond to questions about the June 26 workshop and about targeting DR in specific geographic locations. The Ruling also provided guidance to the parties on the submission of briefs and established procedural deadlines. Briefs on responses to the DR-EE integration questions were due July 24 and Reply Briefs were due August 4. A PD is expected in October. While CEERT is not a party to these proceedings, we have been closely monitoring them because of their impacts on DR.

Other CPUC Rulemakings and Governance Actions:

CEERT has had a limited budget to actively participate in other CPUC issues. Nevertheless, we are currently a party to or are tracking the following proceedings in order to advance key resources.

Distribution Resource Plans (DRPs) (R.14-08-013)

CEERT has party status in this rulemaking, which has three concurrent tracks: Track 1 on methodological issues (quasi-legislative), Track 2 on demonstration and pilot projects (rate-setting), and Track 3 on policy issues (quasi-legislative). Track 1 will develop an integration capacity analysis (ICA) and locational net benefits analysis (LNBA). Track 2 will look at certain Demonstration Projects. Track 3 includes definition of the distribution services that can be provided by distributed energy resources (DERs).

The proceeding has created ICA and LNBA working groups, and five Demonstration Projects: Dynamic ICA, Optimal LNBA, DER Locational Benefits, Distribution Operations and High Penetrations of DERs, and Micro-Grids Where DERs Serve a Significant Portion of Customer Load and Reliability Services.

On May 16, Assigned Commissioner Picker issued a Ruling requesting answers to questions in the Energy Division Staff White Paper on Grid Modernization, which was prepared to help the Commission and the parties evaluate grid modernization investments. A June 5 grid modernization workshop discussed the concepts and options presented in the White Paper and stakeholder responses to questions the White Paper raised. Comments on the Ruling were filed June 19 and Reply Comments on June 28.

A June 7 Ruling set the scope and schedule for continued long-term ICA and LNBA refinement discussions in Track One, following which the CPUC will consider recommended refinements to ICA and LNBA methodologies in a subsequent decision. On June 19, the CPUC issued D.17-06-012, which approved Revised (and previously denied) Track 2 Demonstration Projects that now have new locations, and were proposed by PG&E, SCE and SDG&E. And on June 22, ALJ Mason issued a Ruling Requiring IOUs to File Assumptions and Framework Addendum, and for Parties to File Comments; this Ruling asked questions on 2017 growth scenarios and future growth scenario updates.

On June 30, ALJ Mason issued a Ruling Requesting Answers to Stakeholder Questions Set Forth in the Energy Division Staff Proposal on a Distribution Investment Deferral Framework, which is a primary component of a proposed annual Distribution Resource Planning process. Comments on the Ruling and Staff Proposal were filed August 7 and Reply Comments were filed August 18.

On August 9, Assigned Commissioner Picker issued a Ruling on the Adoption of Distributed Energy Resources (DERs) Growth Scenarios. This ACR provides the IOUs with direction on application of the DER growth scenarios for their 2017-2018 planning cycle, and defines the issues and process for establishing system-level and locational disaggregation methodologies to be decided in the Track 3 decision.

For the 2017-2018 cycle, the IOUs are directed to use the adopted 2016 IEPR demand forecast update with limited adjustments to PV and EV forecasts, and their individual IOU-proposed methods to locationally disaggregate the data. For the 2018 and beyond planning cycles, the Track 3 decision will need to resolve issues on System-Level Forecast, High and Low Case DER Growth Scenarios, and Locational Disaggregation Methods. The ACR directs the Energy Division to work with the CEC to submit a straw proposal for CPUC consideration, and allows it to convene the Growth Scenario Working Group as needed to discuss these issues in preparation for comments. If the IOUs plan to make adjustments to the 2016 PV or EV forecasts, they should submit them by Tier 1 advice letter within 60 days of this ACR.

Integration of Distributed Energy Resources (IDER) (R.14-10-003)

There has recently been increased activity in this proceeding. On June 16, ALJ Hymes issued a Ruling that denied the IOUs' Motion for Evidentiary Hearings as not being necessary, but found a need for additional transparency on the Energy Division Proposal to adopt a Societal Cost Test (SCT), and noticed a workshop on the SCT for August 8. The workshop provided a general overview and response to the Staff SCT Proposal, but did not resolve whether an SCT would be adopted in an upcoming Proposed Decision or after continued evaluation by Working Groups.

On June 30, the CPUC issued D.17-06-031, which denied rehearing of D.16-12-036 because no legal error was shown. Sierra Club had filed the Application for Rehearing, alleging that D.16-12-036 violated PU Code Section 769 by allowing fossil-fueled DERs to participate in the Incentive Mechanism Pilot.

On July 10, the CPUC held a workshop to discuss advice letters the IOUs filed requesting approval to procure DER solutions for projects selected for the Competitive Solicitation Framework and Utility Regulatory Incentive Pilot.

On July 14, ALJ Hymes issued a Proposed Decision that adopts a series of values based upon the CARB Cap-and-Trade Allowance Price Containment Reserve Price as an interim GHG adder value for use in the avoided cost calculator when analyzing the cost-effectiveness of DERs. Development of a permanent GHG adder will be considered in the future, in coordination with the IRP proceeding, and if and when adopted, will replace the interim GHG adder adopted here. To limit the risk of overvaluing resources, the Proposed Decision adopts a sunset date of May 1, 2018 for the interim adder with the option to extend for one year. Comments on the Proposed Decision were filed August 3 and Reply Comments filed August 8.

On August 11, the CPUC issued D.17-08-002, which modifies Ordering Paragraph 2 of D.16-06-007, allowing for a one-year waiver of Energy Division's requirement to update the Avoided Cost Calculator.

DER Action Plan

The Final DER Action Plan was issued on May 3, but it is still unclear how this plan will be used going forward. The CPUC made non-substantive changes to the Action Plan to improve clarity, consolidating the "Continuing Elements" and "Action Elements" into one set of Action Elements for each Track. See: [http://cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Commissioners/Michael_J_Picker/DER%20Action%20Plan%20\(5-3-17\)%20CLEAN.pdf](http://cpuc.ca.gov/uploadedFiles/CPUC_Public_Website/Content/About_Us/Organization/Commissioners/Michael_J_Picker/DER%20Action%20Plan%20(5-3-17)%20CLEAN.pdf).

DER Improvements to Rule 21 (R.17-07-007)

On July 21, the CPUC issued an OIR to Consider Streamlining Interconnection of Distributed Energy Resources (DERs) and Improvements to Rule 21. The Assigned Commissioner is Commissioner Picker and the ALJ is ALJ Hymes. The preliminary categorization of this proceeding is quasi-legislative.

The OIR was opened to consider a variety of refinements to the interconnection of DERs under Electric Tariff Rule 21 of PG&E, SCE, and SDG&E, and the equivalent tariff rules of small and multijurisdictional electric utilities. In this proceeding, the CPUC will consider whether to revise Rule 21 to streamline interconnection of DERs by incorporating the results of the Integration Capacity Analysis under development in R.14-08-013 (DRP). This proceeding may explore other refinements to Rule 21 to address interconnection of storage devices, further development of standards and operational issues for smart inverters, transmission cluster study thresholds, design changes to projects already under review, timelines for estimating and constructing grid upgrades, and cost allocation for grid upgrades. This rulemaking may also serve as the procedural forum for other topics related to distribution-level interconnection.

The OIR initially groups the issues to be addressed in this proceeding into four tracks:

Track 1

1. Modification of Fast Track Screen Q to minimize the number of DER projects subjected to transmission cluster studies;
2. Clarification of the definition of "complex metering solutions" for storage facilities;
3. Clarification of what constitutes a "material modification" to a project and procedures for processing modifications;
4. Required replacement of old inverters with "smart" inverters at end of life;
5. Activation via upgrade of Phase 1 capabilities in existing inverters with advanced functionality;
6. Rules and procedures for adjusting advanced inverter functions via communication controls;

7. Technical underpinnings of associated tariff and compensation issues for advanced inverters;

Track 2

8. Incorporation of Integration Capacity Analysis (ICA) results into Rule 21 to inform interconnection siting decisions and further streamline the Fast Track process for projects that are proposed below the integration capacity at a particular point on the system;
9. Development of curtailment provisions in interconnection applications to allow DER projects to perform within existing hosting capacity constraints and avoid triggering upgrades;

Track 3

10. Implementation of decisions made in R.15-03-011 on measurement and metering of storage facilities to enable Multiple-Use Applications and track station power consumption;
11. Improved interconnection efficiency through coordination between the ICA and each utility's Rule 21 interconnection, Rule 15 main extensions, and Rule 16 service connection study processes;
12. Improved certainty on timelines for distribution upgrade planning, cost estimation, and construction;
13. Development of a process for distribution upgrade cost sharing among developers, and cost allocation issues that arise in connection with new upgrade practices in DRP;
14. Assessment of regulatory options to coordinate CPUC-jurisdictional and FERC-jurisdictional interconnection rules for behind-the-meter DERs, including clarification of the rules for projects that wish to transfer between the Rule 21 and Wholesale Distribution Access Tariff queues, and a streamlining of the transfer process;
15. Telemetry requirements;
16. Itemized billing requirements for distribution upgrades to enable customer comparison between estimates and billed costs and verification of the accuracy of billed costs;
17. Standardization of anti-islanding screen parameters when using smart inverters to avoid unnecessary mitigations;
18. Interconnection and distribution upgrade issues associated with state Zero Net Energy (ZNE) build codes and policies;
19. Issues related to the interconnection of electric vehicles;
20. Other revisions to Rule 21 as necessary;
21. Consideration of other issues and related rules necessary to streamline interconnection of DERs; and

Track 4

22. Revisions to Rule 21 and equivalent tariffs administered by small and multi-jurisdictional utilities to maintain consistent statewide standards for distribution-level interconnection.

A PHC has not yet been scheduled but is anticipated to be set for September.

Power Charge Indifference Adjustment (PCIA) (R.17-06-026)

On July 10, the CPUC issued an OIR to Review, Revise, and Consider Alternatives to the Power Charge Indifference Adjustment (PCIA). This Rulemaking was opened to review the current PCIA and will follow up and expand upon the recent consideration of the PCIA. The OIR will consider:

- Improving the transparency of the existing PCIA process,
- Revising the current PCIA methodology to increase stability and certainty,
- Reviewing specific issues related to inputs and calculations for the current PCIA methodology, and
- Reviewing alternatives to the PCIA.

The OIR will consider recent legislation on the treatment of bundled retail customers of IOUs and customers departing IOU service set forth in SB 350. The preliminary categorization of the proceeding is quasi-legislative. Peterman is the assigned Commissioner and Simon and Roscow are the assigned ALJs.

The OIR identifies examples of issues that may be included in this proceeding:

1. Implementation of SB 350 language discussing bundled customer indifference and protection of departing customers from allocation of costs not incurred on their behalf.
2. Transparency, data access, and review and possible modification of current PCIA methodology.
3. Alternatives to the PCIA framework.
4. Exemptions from the PCIA for CARE and Medical Baseline customers.
5. Additional considerations and statutory changes relevant to review, revision, and consideration of alternatives to the PCIA.

On August 11, the ALJs issued a Ruling Setting a Prehearing Conference (PHC) for August 31. This Ruling requested that PHC Statements be submitted to address: (1) scope of issues, (2) need for evidentiary hearings, (3) identification of topics that could usefully be the subject of a workshop, (4) proposed procedural schedule, (5) appropriate category for this proceeding, (6) discovery issues, and (7) list and description of other matters the parties wish to address at the PHC.

Energy Efficiency (EE) (R.13-11-005)

There has not been much activity in the EE proceeding since the last report. A Ruling issued on June 15 invited comments on the Draft Potential and Goals Study, requesting that parties reply to questions on the CPUC Staff proposed scenarios that attempt to capture a reasonable range of EE potential for 2018-2030, and on cumulative goals. Comments were filed on July 7 and Reply Comments were filed on July 14.

A June 23 Ruling invited post-workshop comments on whether and how to proceed with To-Code pilots ordered in D.14-10-046 for testing the efficacy of an “existing conditions” baseline and authorizing incentives for measures that meet but do not exceed building code in EE programs the CPUC oversees.

EE Business Plans (A.17-01-013, et al.)

On January 17, the electric IOUs, Southern California Gas, and Marin Clean Energy filed Applications for approval of their EE rolling portfolio business plans. On January 30, these Applications were consolidated into A.17-01-013, et al.

On May 10, ALJ Fitch issued a Ruling seeking comment on sector-level and program-level metrics proposed in the EE Business Plans filed by existing and prospective program administrators (PAs). PA responses were filed and served on May 22. The Ruling required PAs to file and serve a revised set of comprehensive metrics, with suggested targets for each, by June 26.

On June 9, ALJ Fitch issued a Ruling Modifying the Schedule:

- Supplemental Information and Overall Proceeding Issues: Late April to June 29.
- Sector Level Metrics Issues: May 10 to July 31.
- Limited EE and DR Integration Issues: June 16 to July 31.
- Third Party Solicitation Process Issues: June 16 to September 1.

The rest of the schedule will be determined depending on whether evidentiary hearings will be conducted.

As discussed above, on June 26 there was a workshop on DR-EE Integration. On June 30, ALJ Fitch and ALJ Kao issued a Ruling requesting comments on the CPUC’s Energy Division Staff Proposal to integrate, on a limited bases, certain EE and DR programs. While these issues were to be briefed for the DR Applications proceedings, this Ruling requested Opening Comments on July 24 and Reply Comments on July 31. The Ruling requested responses to questions about Staff-Recommended Integration Elements on residential TOU-enabling thermostats; non-residential lighting, HVAC and other energy uses; combined EE and DR potential research; and other more general questions.

On July 25, the ALJs issued a Ruling that denied Motions for Evidentiary Hearings and Testimony because no specific disputed facts were identified in these Motions, and provided that Opening Briefs were due September 25 and Reply Briefs October 6. On August 4, the ALJs issued a Ruling clarifying that the final documents requested in this proceeding will be final Comments and Reply Comments, not briefs and reply briefs, and that Reply Comments are now due October 13.

Energy Storage (R.15-03-011)

On May 8, the CPUC issued D.17-04-039, which resolved all remaining issues for Track 2 of the Energy Storage Rulemaking except Multiple Use Applications (MUAs). This Decision does not expand utility storage targets, but sets forth a process for implementing AB 2868, which requires utilities to procure an additional 500 MW of specific storage resources. It affirms the 1% Energy Service Provider / Community Choice Aggregator storage procurement target, but establishes a limit on that obligation to ensure parity with utility storage procurement obligations. It declines to modify prior decisions on the eligibility of certain resource types to count toward utility storage procurement targets, and adopts rules on the treatment of station power used to charge storage devices. R.15-03-011 remains open to address MUA issues.

On May 18, ALJ Cooke issued a Ruling seeking comments on a Joint Staff Proposal for a Framework on Multiple-Use Applications for Energy Storage in R.15-03-011 and the CAISO Energy Storage and Distributed Energy Resources 2 Stakeholder Initiative. The Joint Staff Proposal includes 16 proposed rules for treatment of MUAs for electric storage devices, and this Ruling provides the final opportunity for parties to weigh in on those rules. Comments were filed on June 16 and Reply Comments on June 30.

A recent Order extended the deadline in this proceeding to October 9. At the August 10 CPUC Business Meeting, Commissioner Peterman noted this extension was to finalize the development of principles governing MUAs by reviewing comments and issuing a Proposed Decision for consideration.

Water-Energy Nexus (R.13-12-011)

As previously reported, on November 16, the Commission issued D.16-11-021, which approved pilots for SCE and SDG&E to test the concept of “matinee rates” (special midday price discounts) as a means to reduce both energy and water use during high-impact times. And on December 20, the CPUC issued D.16-12-047, which ordered PG&E, SCE, SDG&E and SoCal Gas to work with Energy Division to create a plan of action to update the water-energy nexus cost calculator.

On June 16, the CPUC issued D.17-06-007, which granted SCE’s Petition for Modification of D.16-11-021 and agreed to SCE’s request to eliminate the requirement that SCE implement its approved Energy Matinee Pricing Pilot, as the pilot costs are not warranted and are not needed given that its results will come too late to inform upcoming rate design.

On July 24, ALJ Cooke issued a Ruling Seeking Comment on Staff Recommendation. D.16-12-047 ordered the IOUs and others to: (1) convene a workshop on a template to report communications service outages that impact energy service, facilities, or grid management; (2) convene a workshop on using communications technology to improve watersheds, mitigate fire danger, and protect their customers, workers, and infrastructure; and (3) serve a report on workshop results. Staff suggested that these workshops are unjustified and of questionable benefit, and recommended that the CPUC modify the orders for workshops and rescind the workshop requirements. The only parties to file Comments were the IOUs, which supported the Staff Recommendation.

On August 4, SDG&E filed a Petition for Modification of D.16-11-021 requesting that the CPUC relieve it from implementing its required Matinee Pricing Pilot. The CPUC has not yet ruled on this Petition, but appears likely to grant it, as the Commission has relieved both PG&E and SCE of similar obligations. The CPUC recently extended the statutory deadline in this proceeding to October 23.

Public Records Access (R.14-11-001)

CEERT is tracking this proceeding because of its potential significance for document access at the CPUC. On April 28, Assigned Commissioner Picker issued an Amended Scoping Memo that clarifies the proceeding will address the following questions:

1. What revisions are necessary to CPUC decisions and General Orders (GOs), including GO 66-C?
2. What should be the process for submission of information to the CPUC and associated claims for confidentiality?
3. What should be the process for submission of California Public Records Act (CPRA) requests?
4. What should be the process for release of information by the Commission, including in response to a CPRA request, and in other contexts?

The Scoping Memo requests comments on the April 2017 Proposed GO 66-D. Opening Comments were filed on May 10 and Reply Comments on May 17.

On May 26, the CPUC issued D.17-05-035, which modified D.16-08-024 but denied rehearing of the Decision. Applications for rehearing had been filed by several telecommunication companies alleging that D.16-08-024 violated public utilities' due process rights, failed to proceed in a lawful manner by exceeding the scope of the proceeding, and erroneously delegated authority to review allegations of protected status to the Legal Division and extend the scope of the proceeding. D.17-05-035 found there was no good cause for rehearing, but modified D.16-08-024 to clarify the CPUC's discussion on Legal Division's responsibility for reviewing documents to determine whether or not they should be confidential.

Clean Transportation Advocacy

Advanced Clean Cars Program

Shortly before the California Air Resources Board's (CARB's) March 24 hearing, at which it unanimously approved the continuation of the Advanced Clean Cars regulations that set vehicle emissions standards and ZEV sales targets through model years (MY) 2022-2025, US-EPA Administrator Scott Pruitt and Transportation Secretary Elaine Chao announced the EPA's intention to reconsider its final determination of January 12, in coordination with the National Highway Traffic Safety Administration (NHTSA), as part of a renewed Mid-Term Evaluation process. This move was in response to a letter to Administrator Pruitt from the Alliance of Automobile Manufacturers requesting such an action.

On July 26 NHTSA issued its Notice of Intent to prepare an Environmental Impact Statement (EIS) for Model Year 2022–2025 Corporate Average Fuel Economy (CAFÉ) Standards, and asked stakeholders to submit data and comments by August 25 on the scope of the EIS. The process of reconsidering the EPA's GHG emissions standards was launched on August 21, and the agencies asked stakeholders to provide data and comments on the need for reconsideration by October 5. In an unprecedented move, the agencies have rolled back the period of consideration to include the MY 2021 standards as appropriate. NHTSA's EIS and EPA's reconsideration of the GHG emissions standards must both be finalized by April 1, 2018, following which the agencies could begin to make changes to the mileage and/or GHG standards through a new rulemaking that would likely be finalized during 2019.

In a separate but parallel rulemaking, in 2016 NHTSA was to raise the penalties for auto industry violations of the CAFÉ mileage standards. (CAFÉ penalties have only slightly increased while aggregate inflation has been in excess of 100%.) In response to petitioning from the auto industry, NHTSA agreed to reconsider the CAFÉ penalties and repeatedly delayed its final determination, finally announcing on July 12 that it was again requesting stakeholder feedback (by October 10) and was reconsidering the civil penalties issue, having already agreed to delay the revised penalty levels from MY 2015 to MY 2019.

Taken together, these developments suggest that the Trump administration may be working to roll back one of the country's, and California's, most successful programs for fighting air pollution and climate change, and possibly freezing them at 2021 fleet average emissions levels as being the maximally feasible target, despite detailed analysis from CARB, the Obama administration EPA, and the International Council on Clean Transportation all strongly indicating that continuing with the original program to MY 2022-2025 is entirely feasible.

CEERT is coordinating with state and national NGOs to defend the 2022-2025 vehicle emissions standards and will be submitting written comments on the US-EPA reconsideration of the vehicle GHG emissions standards, the scope of NHTSA's CAFÉ EIS, and the civil penalties that NHTSA should charge car companies for failing to meet the annual mileage targets.

Electrifying Transportation

CEERT continues to monitor the CPUC's Alternative-Fueled Vehicles rulemaking (R13-11-007) and the IOU transportation electrification plans (pursuant to SB 350) submitted as applications on January 20: A.17-01-020 (SDG&E), A.17-01-021 (SCE), and A.17-01-022 (PG&E). Several CEERT affiliates are active parties in these proceedings.

On April 13, the CPUC issued a scoping memo that consolidated the three applications into a single proceeding: A.17-01-020. The Commission ruled that all PRPs (priority review projects—ones costing less than \$4 million and lasting less than a year) would undergo expedited review based on their potential to accelerate transportation electrification, per SB 1275's Charge Ahead Initiative, while serving as test-beds for minimizing costs and maximizing benefits (e.g., contributing to renewables' grid integration, reducing criteria and GHG emissions, providing benefits to disadvantaged and low-income communities, avoiding unfair competition with non-utility enterprises) of SRPs (standard review projects—ones costing more than \$4 million and lasting 2-5 years) and other transportation electrification projects.

In lieu of evidentiary hearings, the Commission held a May 17 workshop on the review of PRPs. Parties submitted concurrent opening briefs on the PRPs on June 16 and concurrent reply briefs on July 10. Based on the briefs, the Commission will issue one or more proposed decisions on the PRPs in September, and after receiving stakeholder input, will issue a final decision (or decisions) by October 26.

On July 11 the CPUC held a stakeholder workshop on the review of SRPs. Given the breadth of issues to be resolved, the Commission will be holding evidentiary hearings on stakeholder testimony. On July 25, August 1 and August 7, stakeholders filed opening testimony on fast-charging infrastructure and rates; medium/heavy-duty and fleet charging infrastructure and commercial EV rates; and residential charging infrastructure and rates. Concurrent rebuttal testimony is due September 5, and evidentiary hearings will be September 25 – October 13. The CPUC will seek briefs and reply briefs on the three utility SRP applications toward year-end, and plans to issue a proposed decision on the SRPs during the first quarter of 2018. The Commission has determined that the consolidated application proceedings are ratesetting.

Low-Carbon Fuel Standard (LCFS)

CEERT continues to participate in advocacy efforts to improve and extend the LCFS. CARB is holding public workshops to update aspects of the LCFS program, including enhancements and program amendments to strengthen the carbon intensity reduction targets consistent with realizing the goals of SB 32. Systematic improvements under consideration include changes to the pathway carbon intensity application and evaluation process, improvements to reporting and credit generation processes, integration of mandatory third-party verification requirements, inclusion of new fuel types, and updates to lifecycle assessment modeling tools and the fuel pathway certification process.

Pursuant to SB 1383 and the reduction of methane emissions, CARB has also started work on a pilot financial mechanism for dairy-related projects producing low-carbon fuels, and CARB staff plan to present a revised regulatory package to the Board in late 2018 or early 2019.

Alternative and Renewable Fuel and Vehicle Technology Program

CEC staff is developing an initial draft of the 2018 – 2019 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program, which will be released in October or November for review by the Advisory Committee (on which CEERT serves) and the public.

Volkswagen Diesel Settlement

Research conducted in 2013-2014 uncovered the fact that certain Volkswagen (VW) and Audi diesel vehicles were employing sophisticated computer code to cheat state and federal emission certification tests, resulting in real-world on-road nitrogen oxide emissions as much as 40 times higher than what was legally allowed for their approximately 85,000 vehicles in California (600,000 vehicles nationwide).

After a more thorough investigation by CARB staff, and in the face of incontrovertible evidence, VW officials finally admitted to the widespread use of the cheat devices in many of the company's diesel cars. As part of a settlement and related Consent Decree, VW is to pay penalties to mitigate damages to public health, and to invest at least \$800 million during four investment cycles over 10 years to accelerate development of a market for zero-emission vehicles (ZEVs) in California.

CEERT helped lead NGO advocacy on VW's transgressions and what VW should be required to do with its prescribed investments. This advocacy began with a coordinated response to a letter that Elon Musk and 44 other individuals in the clean-tech and investor communities had sent to CARB.

CEERT hosted two meetings of California NGOs with Volkswagen/Electrify America (VW/EA), at which we offered constructive criticism of their \$200 million Cycle 1 ZEV Investment Plan (C1ZIP), the first draft of which was released March 14. We helped mobilize advocates on the C1ZIP's failure to address fuel-cell electric vehicles or hydrogen fueling infrastructure, and its inadequate treatment of disadvantaged communities, especially in the Central Valley. CEERT and Valley LEAP then submitted comments to CARB expressing our concerns about the lack of a long-term vision in the C1ZIP and how it treated disadvantaged communities, among other issues. CEERT and Valley LEAP worked with mayors from the Central Valley and with the Fresno Council of Governments on a letter highlighting Valley communities' misgivings about the C1ZIP. CEERT also took part in drafting joint comments to CARB from a large group of California NGOs, many of which are part of Charge Ahead California.

On May 24, in response to our comments, CARB requested that VW/EA revise its C1ZIP to address the identified shortcomings. VW/EA's revised C1ZIP, which was released on June 29, highlighted the many opportunities that VW/EA now sees for accelerating the deployment of electric vehicles in the Central Valley. Hydrogen is still overlooked, but VW/EA has assured the stakeholder community that they will explore that subject more extensively in the three subsequent investment cycles. With the support of many NGOs, CARB approved VW/EA's revised C1ZIP during its July 27 Board Hearing.

Short-Lived Climate Pollutants (SLCPs)

While CARB's March 23 adoption of the *Short-Lived Climate Pollutant (SLCP) Reduction Strategy* can be viewed as just the beginning of the beginning in the state's efforts to reduce these super-pollutants, CEERT considers the adoption of the *Reduction Strategy* as the culmination of our more than decade-long leadership in advocating for the state to adopt and implement such a strategy. CEERT advised Senator Ricardo Lara on SB 605, which directed CARB, other agencies, and regional air districts to develop the *Reduction Strategy*, and the subsequent SB 1383, which codified the 2030 SLCP emissions reductions targets and required state agencies to implement the *Reduction Strategy*.

Methane Emissions

California has begun moving forward with implementing the strategy to address methane emissions. The state's target is a 40% reduction of methane from 2013 levels by 2030. Dairies account for 45% of the state's methane emissions, followed by landfills at 20% and other livestock emissions at 10%.

CalRecycle (formerly the California Integrated Waste Management Board) is holding a series of consultative workshops throughout the state before issuing draft regulations in the fall on how the solid-waste industry could reduce landfill methane by a 50% reduction in statewide disposal of organic waste from 2014 levels by 2020, and a 75% reduction by 2025. CalRecycle will then hold a further series of workshops to refine the draft regulations before a formal phase of rulemaking in late 2017 or early 2018, with adoption of the regulations in late 2018 or early 2019. CEERT will continue to work closely with our colleagues at Californians Against Waste to help ensure that the state can achieve or exceed its 2025 goal.

CARB, the CPUC, the California Department of Food and Agriculture, and the California Energy Commission have established a Dairy/Livestock Working Group (DLWG) of diverse stakeholders that will help the agencies address technical, market, regulatory, and other challenges and barriers to methane reduction projects involving dairies and livestock. CEERT is participating in the DLWG through its subgroups that focus on Fostering Markets for Digester Projects; Fostering Markets for Non-Digester Projects; and Identifying Research Needs. DLWG will produce draft reports on each of these areas by late 2017, with final reports due in 2018.

Hydrofluorocarbon (HFC) Emissions

While CARB is to achieve a 40% reduction in the use of HFC refrigerants (the fastest growing source of GHGs) by 2030, it will need to conduct more research to identify the most commercially and economically feasible approaches to reducing their use. CARB plans to release an initial assessment report on HFCs for public, scientific, and stakeholder review later in 2017.

CEERT will work with our NGO colleagues and the agencies on further reducing HFC emissions in a manner similar to the automotive sector, which will eliminate the use of high-GWP (global warming potential) HFCs in all new passenger vehicles in the U.S. and replace them with low-GWP refrigerants by 2021. (The EU will replace HFCs in cars by the end of this year, and Japan by 2024.) We also plan to highlight the potential of natural refrigerants, and will note that all consideration of refrigerants must take into account the full lifecycle climate impacts of their production and use.

Black Carbon Emissions

California has had tremendous success in reducing the emissions of black carbon (BC) from anthropogenic (non-forest) sources, and CEERT's advocacy continues to push state policies and regulations that enable these reductions. However, the most challenging source of BC emissions is from non-anthropogenic sources such as wildfires. At the same time, the state is losing power plants that can generate renewable electricity from biomass: in the early 1990s California had 66 biomass power plants, but today only 34 such plants are operating.

CEERT will continue our work with state agencies and other stakeholders on the continued reduction of BC emissions from anthropogenic sources (e.g., our leading advocacy on particulate emissions trends from the use of Gasoline Direct Injection engines)¹, and redouble our efforts on reducing BC emissions from agricultural and forest biomass while at the same time increasing the value added that could come from using biomass resources to produce power or other bio-based products.

¹ CEERT serves as Technical Lead for California and national NGOs in negotiations with automobile manufacturers and regulators like CARB on establishing standards for the criteria emissions performance of light-duty vehicles.