

CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES
QUARTERLY STAFF REPORT
MAY – AUGUST 2016

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

Western Grid Expansion (full report on pages 3 - 4)

CEERT worked with other parties to maintain momentum on *Western grid integration* and ensure that debates over proposals for a *new governance structure* do not jeopardize the California Independent System Operator's (CAISO's) expanding to become a Regional System Operator (RSO).

Governor Brown has announced that work on *changing the CAISO's governance* will continue through the fall, with legislation introduced in January.

CEERT, Union of Concerned Scientists (UCS), and Environmental Defense Fund (EDF) submitted comments on *the CAISO's studies of regional expansion*, asking for a 2030 PacifiCorp-CAISO case, further analysis on the increase in coal dispatch, and sensitivities around hurdle rate assumptions. CEERT, EDF, and UCS also filed comments on the CAISO's governance proposal, emphasizing the importance of a *greenhouse-gas (GHG) tracking system* and the need for a *meaningful stakeholders' voice* at the RSO.

We are continuing to work with renewable energy companies, NGOs, and funders on a "*Fix the Grid*" campaign to conduct analysis, education, and strategic outreach to advocates and stakeholders, and ensure that Western grid expansion enables California and the West to achieve our GHG reduction targets.

Grid Modernization (full report on page 4)

While CEERT itself was not party to the negotiations or the settlement agreement on PG&E withdrawing its application for a renewed license to operate the *Diablo Canyon nuclear plant*, V. John White Associates, Jim Caldwell, and energy economics consultant Bill Marcus provided expertise to Friends of the Earth on *zero-carbon replacement portfolios* for Diablo, using the Low Carbon Grid Study as a basis.

CEERT briefed the CAISO Board of Governors on the results of *Low-Carbon Grid Study follow-on reports about regional wind and geothermal* in order to illustrate the benefits of a diverse portfolio.

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

CEERT's V. John White met with senior Governor's Office staff to discuss *implementation of Senate Bill (SB) 350, integrated resource planning, a balanced renewable portfolio, large-scale storage, the zero-GHG replacement strategy for Diablo Canyon*, and the need for transparent, real-time *GHG accounting*.

Advocacy at the California Air Resources Board (CARB) (full report on page 4)

V. John White discussed with senior CARB staff *electric-sector climate targets* to guide California Public Utilities Commission (CPUC) integrated resource planning; the need for *accounting, tracking, and mitigation of potential increases in GHGs and gas pollution*; renewable hydrogen, storage, and carbon capture with *fuel cells*; and *methane emission reduction strategies* such as incentives for digesters and production and use of renewable bio-methane.

Advocacy at the California Public Utilities Commission (CPUC) (full report on pages 5 – 17)

CEERT strongly recommended that the CPUC undertake a holistic, coordinated implementation of all Renewable Portfolio Standard (RPS) amendments resulting from SB 350, especially those requiring a *reformed Least Cost/Best Fit (LCBF) bid evaluation methodology* that would include *reliability considerations* and a *GHG metric*.

We objected to the continued use of *historical time-of-delivery factors* in LCBF criteria.

CEERT staff met with CPUC Energy Division chief Ed Randolph and members of his RPS team to discuss our concerns with CPUC and CAISO rules governing *RPS delivery compliance* and *resource adequacy* that may be operating to increase imports of fossil fuels while curtailing renewables.

Renewable developers and trade organizations challenged a CPUC ruling on *2016 RPS Procurement Plans* as not reflecting much-changed climate and energy goals stemming from SB 350 or grid impacts that have resulted in renewable curtailment or overgeneration conditions.

CEERT argued that the CPUC's exploration of a *renewable integration cost adder (RICA)* seeks to resolve procurement issues on a "siloed" basis and therefore should not be a priority.

In the CPUC *Resource Adequacy* proceeding, CEERT argued that a rigorous analysis of the flexibility experience in California and elsewhere is necessary before a durable flexibility metric can be adopted.

CEERT undertook an in-depth review of PG&E's agreement with its unions and environmental groups to *close the Diablo Canyon nuclear plant* and replace its power output with zero-carbon energy.

We continue to advocate vigorously before the CPUC and other agencies to strengthen existing *demand response (DR)* programs while pressing for changes in DR procurement, and to urge the CAISO Board of Governors and senior management to reduce barriers to increased use of this key resource.

Phase 2 of the CPUC *Energy Efficiency* proceeding addresses "Rolling Portfolio" review processes, guidance on changes for 2016 portfolios, and updates of various metrics to keep portfolios on course through 2016 and beyond.

Southern California Activities (*full report on page 17*)

CEERT continued to work on removing barriers to *transmission expansion* and *renewable procurement* in the Salton Sea region, and on CAISO's conflicts with the Imperial Irrigation District (IID) over the *allocation of deliverability*.

We met with leaders of the Los Angeles Department of Water and Power to discuss the *Energy Imbalance Market*, large-scale *storage*, and potential *geothermal procurement* in the Imperial Valley.

Short-Lived Climate Pollutants (SCLPs) (*full report on pages 17 – 18*)

CEERT submitted joint comments with other parties supporting CARB's goal of *cutting methane emissions* 40% by 2030 through diverting almost all organic materials from landfills by 2025 and reducing methane pollution from California's dairies, waste water treatment plants, and oil and gas industry.

We supported CARB's adoption of new regulations that aim to *reduce vented, leaked, and fugitive GHG emissions* from the state's oil and gas industry, and CEERT's John Shears participated in a CARB/CPUC/California Energy Commission (CEC) symposium's closing panel on reducing oil and gas industry emissions.

Clean Transportation Advocacy (*full report on pages 18 – 19*)

The latest evaluation of the *Low-Carbon Fuel Standard* indicates the program has succeeded in reducing the average carbon intensity of California's alternative transportation fuel by 21% from 2011 to 2015.

CEERT is tracking CPUC proceedings on alternative-fueled vehicles and PG&E's proposed pilot for *electric vehicle infrastructure*. Several CEERT affiliates remain active parties in these proceedings.

Western Grid Expansion

Discussions have continued on integrating the California Independent System Operator (CAISO) and PacifiCorp transmission systems to form a Regional System Operator (RSO). The passage of Senator De León's Senate Bill (SB) 350 directed the CAISO to carry out various studies and develop a governance proposal for a Western RSO. For such regional integration to occur, the legislature must pass a bill repealing the state's right to appoint the CAISO's Board of Governors.

CEERT has participated in a wide variety of meetings and discussions with agencies, stakeholders, and legislative staff. The studies and governance proposal have been generally perceived as positive and productive, but many parties have been hesitant due to the speed with which developments have unfolded. While there was potential for a push in August to pass legislation changing the CAISO's governance, CEERT has worked with others to ensure a thoughtful process that maintains momentum and does not jeopardize the expansion to an RSO. To this end, the Governor has announced that work on regional grid integration will continue through the fall, with legislation introduced in January.

The SB 350 studies, conducted by the Brattle Group with several other reputable consulting firms, analyzed integration's potential impacts, costs and benefits to California ratepayers, effects on greenhouse gas (GHG) emissions, economic impacts, and effects on disadvantaged communities. Preliminary results were presented at a workshop May 24 and 25. Results showed significant benefits to California ratepayers, decreases in GHG emissions, increased jobs, and increased reliability for the 2030 (essentially) WECC-wide case. The 2020 PacifiCorp-CAISO-only case showed a small increase in economic benefits and a slight increase in GHG emissions, the significance of which has been debated.

CEERT, Union of Concerned Scientists (UCS), and Environmental Defense Fund (EDF) submitted comments asking for a 2030 PacifiCorp-CAISO case, further analysis on the increase in coal dispatch, and sensitivities around the hurdle rate assumptions.

On June 9 the CAISO released the first draft of a Governance Proposal, after which the California Energy Commission (CEC) held workshops on June 16 (in Sacramento) and June 20 (in Denver). Highlights of the draft Proposal included GHG tracking, a transitional committee, a transitional board, and a states' committee with weighted voting and primary authority over resource adequacy and transmission access charges. Following comments, the CAISO released a revised Governance Proposal on July 15 that included the elimination of GHG tracking (as it is not strictly "governance"), a shortening of the transitional period, elimination of a transitional board, and details on the composition of the transitional committee.

On July 28, the CEC hosted a Joint Agency Workshop with the California Public Utilities Commission (CPUC) and California Air Resources Board (CARB) on the regionalization of the CAISO. The CAISO and its consultants presented the results of the SB 350 studies and the revised Governance Proposal. Overall, there seemed to be consensus that the studies were valid, with several stakeholders delivering outspoken comments about regionalization generally and about the rush to complete the studies.

Although stakeholders generally found revisions to the governance proposal to be positive, many parties expressed discomfort at the removal of GHG tracking and the number of issues left to the transitional committee, including the form of the new stakeholder process. CEERT, EDF, and UCS filed comments on the importance of a GHG tracking system as well as the need to ensure a meaningful stakeholders' voice at the RSO.

CEERT has continued to take part in meetings that Sue Kateley of the Assembly Utilities and Commerce Committee has convened with key stakeholders, agencies, staff of the Senate and Assembly leadership, and the Governor's office to discuss key issues and potential resolutions, identify gaps in knowledge and

understanding, narrow differences, and pinpoint potential areas of agreement and compromise. CEERT Executive Director V. John White and Director of Grid Policy Liz Anthony have actively participated.

CEERT has been working with a group of renewable industry representatives, NGO leaders, and key funders on a campaign called “Fix the Grid” that is carrying out analysis, education, outreach, coordination, and political strategy with advocates, allies, and key stakeholders. An independent steering committee led by Roby Roberts is providing governance. The project’s managing director, Don Furman, has extensive Western transmission grid experience and expertise.

The goal of the project is to ensure that Western grid expansion and modernization puts in place the key elements needed to enable California and the West to achieve our 2030 and 2050 GHG reduction targets. Fix the Grid has been engaging with key media and stakeholders throughout the West as a balanced voice on grid expansion. The project is expected to run through 2017, working to ensure that a robust and productive process continues this fall to bring about consensus on the grid of the future.

Grid Modernization

CEERT has continued our work to modernize the grid, leveraging the analysis of the Low Carbon Grid Study (LCGS) and its subsequent follow-on projects.

While CEERT itself was not party to the negotiations or the settlement agreement PG&E announced in withdrawing its application for a renewed license to operate the Diablo Canyon nuclear plant, Friends of the Earth (FOE) asked our Executive Director V. John White to consult on the technical feasibility and economics of replacing Diablo’s output with renewable energy. With technical consultant Jim Caldwell and energy economics consultant Bill Marcus of JBS Energy, V. John White Associates provided expertise to FOE on zero-carbon replacement portfolios for Diablo, using the LCGS as a basis in comparing those scenarios with the plant’s expected operating costs. That work can now be found on the LCGS website, and contributed a high level of confidence to the environmental parties’ stance in the negotiations.

The National Renewable Energy Laboratory LCGS team was asked to present results of the LCGS Phase II study at the CPUC’s June 14 Integrated Resource Planning workshop. Unfortunately, the team was unable to attend that day due to scheduling conflicts.

On June 19, we briefed the CAISO Board of Governors on the results of LCGS follow-on reports about regional wind and geothermal in order to illustrate the benefits of a diverse portfolio. The presentation was well received, although much of the conversation diverted to implications for CAISO regionalization.

Discussions with the Governor’s Office

V. John White met with senior Governor’s Office staff to discuss implementation of SB 350 at the CPUC and CARB, integrated resource planning, a balanced renewable portfolio, large-scale storage, the zero-GHG replacement strategy for Diablo Canyon, and the need for transparent real-time GHG accounting to accompany regional grid expansion as essential elements in any strategy to achieve 2030 climate targets.

Advocacy at the California Air Resources Board (CARB)

V. John White met with senior CARB staff to discuss adoption of electric-sector climate targets to guide CPUC implementation of SB 350’s provisions on integrated resource planning; the need for accounting, tracking, and mitigation of potential increases in GHGs and in-state natural gas pollution in the context of regional grid expansion; renewable hydrogen, storage, and carbon capture with fuel cells; and methane emission reduction strategies such as incentives for digesters and production and utilization of renewable bio-methane.

Advocacy at the California Public Utilities Commission (CPUC)

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

Implementation of SB 350 and LCBF Reform

The CPUC's actions in its RPS Rulemaking continue to "silo" decision-making for renewables procurement separate from the integrated resource planning (IRP) required by SB 350 that is being undertaken in R.16-02-007. The CPUC's first action in response to RPS changes resulting from SB 350 was in an April 15 Administrative Law Judge's (ALJ's) Ruling seeking Comments on "implementation of elements of [SB] 350 relating to procurement" under the RPS Program. However, the "elements" identified in the April Ruling did not include SB 350's requirement that a reformed Least Cost/Best Fit (LCBF) bid evaluation methodology needs to include reliability considerations and a GHG metric, which CEERT has long advocated for, and which D.15-12-025 committed to addressing in 2016.

On May 5, CEERT filed Comments on the April 15 Ruling, which can be found at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M162/K003/162003551.PDF>. In our Comments, we strongly recommended that the CPUC avoid a piecemeal approach, and undertake a holistic, coordinated implementation of all RPS amendments resulting from SB 350, consistent with the provisions of that bill as a whole and applicable principles of statutory construction. We concluded:

*[G]iven the express intent of SB 350 to achieve a "zero or lowest feasible emissions of greenhouse gases, criteria pollutants, and toxic air contaminants onsite," either alone or to the extent it serves to "protect system reliability," and to do so by 2030, it is imperative that the Commission starts *today* to plan and develop new approaches and rules that facilitate the identification and procurement of the resources needed to achieve the expected 2030 GHG emission reductions. (Emphasis original.)*

We noted that LCBF reform also requires coordination between the RPS and IRP rulemakings, given that this methodology has been used for both Long Term Procurement Planning (LTPP) and RPS procurement and is on course to be used for IRP as well. We stated that achieving SB 350's low-carbon goals cost-effectively will require different outcomes than reliance on the Commission's existing modeling assumptions and LCBF methodology. Finally, in response to the specific elements considered in the April Ruling, we urged that any changes to compliance rules or requirements, if needed at all, be developed transparently and adopted promptly in advance of the compliance period beginning January 1, 2017.

On June 22, the CPUC finally issued an ALJ's Ruling seeking Comments on an Energy Division Staff Paper on LCBF reform for RPS procurement. Disappointingly, this Staff Paper offers a Draft Workplan that segregates all changes required to the LCBF criteria and methodology into *three* tracks, with different schedules for review and even separate decisions on each. Left to last were Track 3 issues, which, in fact, are the issues most critical to fundamental change of LCBF renewables procurement evaluation, including criteria on GHG emissions and an integration adder, optimal portfolio, and resource diversity. These Track 3 issues are not set for consideration or decision until 2017.

Given the statutory changes enacted by SB 350 that emphasize the need for reliability and low-carbon resources in LCBF criteria, CEERT believes this delay and partition of issues that the Energy Division has offered appear wholly detrimental and at odds with the goals of SB 350. The only issues of LCBF reform actually offered for consideration in the June 22 Staff Paper, and a first Workshop to be held in "Q3 or 4" 2016, were limited to the "remaining" issues of capacity price, Time of Delivery (TOD) factors, and valuation of deliverability status (energy-only).

While Track 1 also includes consideration of effective load-carrying capability (ELCC) for RPS procurement, this issue has already been the subject of earlier comments and a March 9 Ruling calling for an investor-owned utilities' (IOUs') joint proposal. On June 6, an ALJ's Ruling was issued requiring the IOUs to file their joint proposal on ELCC methodology and assumptions on June 17, and to file the actual ELCC values on December 15. The IOUs' June 17 Joint Proposal on ELCC for RPS procurement,

absent actual values, can be found at:

<http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M165/K370/165370911.PDF>.

In response to the June 22 Ruling and Staff Paper, CEERT filed Comments that detailed our concerns not only with the Draft Workplan, but also the use of historical values to determine TOD factors that may not reflect a resource's value for reliability or grid impacts. In those Comments, we offered strong objections to the Energy Division's three-track Workplan for LCBF reform. We again emphasized the need to avoid "siloed" and piecemeal decision-making, especially on legislative changes resulting from SB 350 that were intended to ensure increased renewable resource procurement going forward that will also account for reliability considerations and GHG metrics.

Most other parties agree that LCBF reform is urgently needed to implement the next phase in decarbonizing California's electric grid over the next 15 years. Therefore, issues such as GHGs, optimal portfolio, and resource diversity should not be segregated out and left to the end of the reform process. CEERT urged that LCBF be comprehensively and consistently implemented across all major CPUC proceedings, including the RPS, IRP, and Resource Adequacy rulemakings, and not be undertaken on a disaggregated, siloed basis. To that end, we urged the CPUC to act now to amend the Draft Workplan and move issues labeled as Track 3 (e.g., GHGs) forward, along with Track 1 issues, for the 2016 Workshop and decision.

In our July 22 Comments we also responded to questions posed by the Track 1 Staff Paper on TOD factors used in LCBF: "Accepting the Track 1 Staff Paper's conclusion that the original purpose of TOD factors was to allow capacity value calculation, CEERT contends that such a purpose made little sense previously and makes no sense today, especially if the Commission intends to use ELCC to calculate capacity value going forward." We noted, "If historical data continues to be used to calculate TOD factors, such an approach dramatically overestimates the energy value of new marginal solar," and the "history of what TOD factors have been in the past and what the IOUs are proposing to use for the next RPS procurement... must be transparently and publicly produced." We asked that the IOUs present this information at the 2016 LCBF Workshop, with comparative spreadsheets of solar PV in different locations as illustrations of the distortions on energy prices and values caused by use of the historical TOD factors.

We cited and included links to our recent papers on "The Value of Regional Wind Energy in California's Carbon Constrained Future" (May 2016) (http://lowcarbongrid2030.org/wp-content/uploads/2016/PDFs/160523_The-Value-Of-Regional-Wind.pdf) and "The Value of Salton Sea Geothermal Development in California's Carbon Constrained Future" (March 2016) (http://lowcarbongrid2030.org/wp-content/uploads/2016/PDFs/160322_Geothermal-Analysis.pdf).

May 9 CEERT Meeting with Energy Division

On May 9, CEERT staff members V. John White, Sara Myers, James Caldwell, Liz Anthony, and Megan Myers met with CPUC Energy Division chief Ed Randolph and members of his RPS team (Paul Douglas, Cynthia Walker, Michelle Kito, and Forest Kaser) to detail and discuss CEERT's concerns with CPUC and CAISO rules governing RPS delivery compliance and resource adequacy that may be operating to increase imports of fossil fuels while curtailing renewables. The Energy Division did follow up with an inquiry to CAISO on the points we raised, and invited CEERT to provide a write-up on the issue and identify specific hours and days when the problem was occurring.

2016 RPS Procurement Plans & Solicitations

On May 17, an Assigned Commissioner's and ALJ's Ruling was issued identifying issues and schedule of review for 2016 RPS Procurement Plans. (See: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M162/K005/162005148.PDF>.) The Ruling does not appear to chart a course for the RPS significantly different from the past and, while referencing SB 350, does not meaningfully reflect the much-changed climate and energy goals and directions resulting from

SB 350 in those RPS Plan requirements or grid impacts that have resulted in renewable curtailment or overgeneration conditions. In fact, the May 17 Ruling very much represents a siloed, business-as-usual treatment of RPS procurement.

Not surprisingly, renewable developers and trade organizations have challenged the May 17 Ruling in two still-pending Motions that focus on the impact of current trends and issues on RPS procurement that are not accounted for in that Ruling. On June 1, California Wind Energy Association (CalWEA), the California Biomass Energy Alliance, the Geothermal Energy Association, Calpine, and Ormat jointly moved to amend the May 17 Ruling to require the IOUs to include in their plans proposals that address the projected direct and indirect costs of energy curtailments in the LCBF bid evaluation process, and to detail how the IOUs propose to use their contractual economic curtailment rights during potential overgeneration conditions. The joint parties assert that achieving a least-total-cost RPS portfolio requires accounting for all curtailment costs in procurement decisions, noting in particular current contract terms that permit IOUs to shift curtailment costs to the seller and bidders, and a lack of access to data that would permit sellers to make even a reasonable estimate of curtailment due to overgeneration over the long term.

A June 7 Motion of the Large-Scale Solar Association (LSA) also sought to amend the May 17 Ruling. This Motion raises concerns similar to those that CEERT voiced in our May 9 meeting with Energy Division. LSA states that the May 17 Ruling does not reflect that achieving a 50% RPS and climate goals requires moving from a “grid designed for and around fossil resources” to “one that effectively and efficiently utilizes renewable resources.” LSA’s Motion notes that the CPUC and CAISO are considering addressing this through multiple measures, including the “expansion of the Energy Imbalance Market, larger regional expansion, [and] targeted electric vehicle charging.” However, “what has been missing to date is information on how renewables are being managed and the barriers scheduling coordinators (generally the utilities) are faced with today in efficiently scheduling both renewables and other resources.”

While noting the May 17 Ruling does call for certain IOU reporting on curtailment, LSA (like the June 1 Joint Parties’ Motion) seeks additional, transparent information from the IOUs on, e.g., how resources are participating in the CAISO energy markets, what impact different curtailment provisions have on how resources are being bid, and what the drivers and barriers are for different kinds of participation.

These Motions were the subject of support by some parties, but also opposition from the IOUs claiming that the Motions are seeking LCBF reform (so, out-of-scope of the May 17 Ruling), do not extend to other LSEs, could adversely affect cost allocation, or will create delay. The sponsoring parties filed replies to make clear that none of those allegations were correct, and that the motions are merely seeking more information, which would not create any meaningful delay.

The CPUC has not taken action on these Motions to date. However, a June 8 ALJ Ruling delayed the filing date of the 2016 RPS Plans to August 8, with Motions to update those plans (following a comment period) extended to September 30. These deadlines suggest that providing the additional information sought by the above motions would not adversely impact this schedule as it stands today.

The Renewable Integration Cost Adder

Studies on the calculation of a permanent Renewable Integration Cost Adder (RICA) for both a 33% and 40% RPS were conducted, with Southern California Edison’s (SCE’s) final Report on a 40% RPS Study filed on April 4. That report indicated SCE had not been able to resolve technical flaws in the 40% RPS Study, and made recommendations that included:

- (1) the CPUC should initiate a new RICA study in R.16-02-007 (LTPP/IRP) with “appropriate modeling tools that incorporate feedback from the parties”;
- (2) future RICA studies should incorporate “four major lessons learned from the RICA Study”: a data base designed for the purpose, a methodology designed within the confines of the model

- in mind, consideration of uncertainty in the modeling approach, and a better understanding of reserve requirements and their relationship with increasing renewable penetrations;
- (3) future RICA studies should consider a more comprehensive approach that includes fixed and other cost components along with variable costs that factor into integrating incremental resources into the system, noting that “calculating the components through a siloed approach has proven difficult with no consistency in methodologies”; and
 - (4) future RICA studies should expand the study’s scope from variable renewable resources to include geothermal and biomass. (SCE states that geothermal and biomass “may also have integration costs when calculating the RICA holistically with both fixed and variable costs.”)

Following an April 13 webinar on SCE’s Report in which CEERT participated, a May 11 Joint ALJs’ Ruling in the IRP and RPS proceedings sought input on SCE’s Report and next steps for developing a RICA. (See: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M161/K867/161867510.PDF>.)

In May, CEERT prepared a memo and worksheet on this Ruling (as well as the May 17 Ruling on the 2016 RPS Procurement Plans), on then prepared Comments in response to the May 11 ALJ’s Ruling. Those Comments were filed and served on June 3 and can be found at: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M164/K102/164102551.PDF>.

CEERT’s June 3 Comments continue to raise our concerns with the CPUC’s ongoing approach that seeks to resolve procurement issues on a siloed basis, divorced from a holistic and comprehensive reading and implementation of SB 350 and an understanding of current reliability and grid issues and impacts, especially those related to achieving a 50% RPS. Our Comments therefore continue to ask the CPUC to “connect the dots” on these important issues and current conditions, to avoid unnecessary delay or analysis, and achieve meaningful, rather than piecemeal, results that advance the state’s goals.

With respect to the necessity of any further work on a “permanent” RICA, CEERT’s Comments state:

[T]he concept that a single fixed technology specific “integration cost adder,” which can be calculated or parsed into fixed and variable cost components and then used to inform procurement decisions, has been rendered moot by the dramatic, sweeping changes in resource mix that the California grid is undergoing. It is not simply that such an “adder” depends on the location of the resource – that is, a rooftop PV installation in the Sunset district with early morning and late afternoon fog and low clouds is dramatically different from a single axis tracked utility scale PV installation with a 1.35 inverter loading ratio located in west Mojave. It is also not simply that such an adder depends on the amount of the particular technology that already exists on the grid – that is, the RICA calculated when solar was a miniscule fraction of the energy production is dramatically different from a future where solar could be 40% or more of the annual average energy production. Finally, it is not simply that some resources have complementary production profiles and, therefore, have synergistic integration cost adders – that is, solar PV and, e.g., New Mexico wind complement each other because wind production is at a minimum at solar noon and increases strongly in late afternoon as the sun is setting, therefore, an integration cost adder for the combination is significantly less than one calculated for either resource individually.

Instead, it is the case, that, while all of the above may be true, their calculation will only lead to cost adders that are accurate for narrow, specific incremental resource additions and/or that can be strongly negative numbers, which simply overwhelm any difference in conventional levelized costs of energy calculations. Stepping back and looking at where the State is headed today in terms of energy procurement and reliability leads to the inevitable conclusion that calculating technology specific RICAs, while potentially marginally useful in certain narrow circumstances, is way down the priority list of things to do to inform the procurement process.

[I]t is necessary to account for the fact that not only is renewable penetration about to double from 25% of annual average energy to 50% of annual average energy, but that the State is also in the midst of: (a) retiring over 17 GW of obsolete gas fired once through ocean cooled facilities, (b) replacing some 6 GW of over-30-year-old legacy must-take combined heat and power facilities with 3 GW of curtailable and partially dispatchable CHP, and (c) having lost half of the State's nuclear production, potentially losing the other half if and when Diablo Canyon is retired. In addition, the definition of the grid itself is rapidly changing from both directions, as distributed resources and active customer participation in supply and demand of energy explode from one direction while regionalization of the bulk grid is being considered from the other direction. Finally, with the emergence of both bulk and distributed storage as viable resource additions, the picture of a complete and total makeover of the grid over the next decade is clear.

Given these current and ongoing circumstances, it is simply not productive, and certainly is not a priority, to spend more time and resources on calculating “renewable integration cost adders” meant to inform marginal additions to a static grid. Instead, what is important is to deal with all of the above issues holistically; recognize that how all of the pieces fit together and work as a whole is much more important than the levelized cost of individual components; and design a range of portfolios that are “least cost/best fit” with feedback from actual procurement experience in an Integrated Resource Planning (IRP) context to guide the process. That work should be conducted and serve as a priority effort in R.16-02-007 (IRP) to apply to all resource procurement and should not be limited to or by considerations restricted to R.15-02-020 (RPS).”

CEERT's June 3 Comments demonstrate that the CPUC's inquiry on the RICA ignores SB 350's amendments to the RPS statute, with a resource's value for GHG reductions and grid reliability now being pre-eminent considerations in determining LCBF. Therefore, we argued against retaining the interim RICA methodology as a placeholder, and strongly recommended that R.16-02-007 (IRP) was the appropriate venue for calculating RICA values—and that these values should serve as outputs of the holistic IRP process (with interagency coordination), not narrow, technology-specific inputs to that planning process.

The CPUC has taken no further action in either R.15-02-020 (RPS) or R.16-02-007 (IRP) on this issue.

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

The CPUC's new statutory charge from SB 350 to develop Integrated Resource Plans (IRPs) has now taken precedence over the Commission's traditional approach and modeling of 10-year LTPPs, and R.16-02-007, although incorporating remaining requirements for the IOUs' long-term plans, is predominantly focused on compliance with SB 350's IRP provisions.

New PU Code Section 454.51 requires the CPUC to identify a “diverse and balanced portfolio of resources needed to ensure a reliable electricity supply that provides optimal integration of renewable energy in a cost-effective manner” using “zero carbon-emitting resources to the maximum extent reasonable,” and to direct the IOUs' LTPPs to include a strategy for procuring “best fit and least cost resources” to meet portfolio needs the CPUC identifies, with cost allocation and community-choice aggregation (CCA) requirements also specified.

New PU Code Section 454.52 requires the CPUC, starting in 2017, to adopt a process for each load serving entity to file an IRP, with scheduled updates, to meet the GHG emission reduction targets that CARB establishes and 50% renewable resource procurement by 2030. The authorized all-source procurement can take into account geographic service area differences, as well as technologies that might not otherwise compete favorably with other resources but do reduce GHG emissions and meet other goals.

To date, R.16-02-007 has moved at a glacial pace to implement these provisions. Comments on the Preliminary Scoping Memo, including CEERT's, were filed on March 21; a Prehearing Conference was held on April 26 (with CEERT participating); a Scoping Ruling was issued on May 26; and a Workshop was held on June 14 to begin consideration of statewide analysis and policy guidance on IRPs and case studies of present-day IRP activity. The Scoping Ruling can be found at: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M162/K358/162358082.PDF>.

While the Scoping Ruling made clear that the 2030 Low Carbon Grid Study was to be presented and considered at this first Workshop, National Renewable Energy Laboratory representatives could not attend on that date. California Pathways presenters at the Workshop noted their study did not aim to "tell you what to do," but rather to provide possible scenarios. Commissioner Jones of the Washington State PUC and PacifiCorp presented information and results from their own IRP processes.

The Scoping Ruling indicated that another workshop would be scheduled for July or August, and parties would have an opportunity to file "comments on the usefulness of California Pathways (or another study, such as the Low Carbon Grid Study) as statewide analyses and portfolio optimization guides for initial IRP requirements" in July. Instead, however, a CPUC staff Concept Paper on IRP was served on August 11, with informal comments due on August 31 and a webinar on the paper to be held August 24. A workshop on September 26 will "explore in more detail" options for implementing an IRP process.

For CEERT this venue remains a key forum for addressing and resolving the most appropriate way to plan for and procure low-carbon resources to meet the goals of SB 350 in a comprehensive manner. However, we remain concerned about delays in this rulemaking, especially given the August 11 filing of PG&E's application on the Joint Proposal for closing the Diablo Canyon nuclear facility and replacing its power output (see below), and the possible interaction between that proposal and IRP.

The 2012 Long-Term Procurement Planning (LTPP) Preferred Resources Procurements

The CPUC's 2012 LTPP rulemaking ended with decisions authorizing local capacity requirement (LCR) procurement for SCE and SDG&E in D.13-02-015 (Track 1, SCE) and D.14-03-004 (Track 4, SCE and SDG&E). That procurement has been the subject of three applications seeking approval of procurement contracts signed pursuant to those authorizations: (1) A.14-07-009 (SDG&E (Carlsbad Power Purchase Tolling Agreement (PPTA))); (2) A.14-11-012 (SCE LCR Request for Offers (RFO), Western LA Basin); and (3) A.14-11-016 (SCE LCR RFO, Moorpark). All three applications have now resulted in CPUC initial decisions and or decisions on rehearing, but continue to be challenged through remaining CPUC rehearing requests or before the California Court of Appeal.

A.14-07-009 (SDG&E (Carlsbad)): On May 21, 2015, the CPUC issued D.15-05-051 adopting an Alternate Proposed Decision, approving a modified PPTA with the gas-fired Carlsbad project as compliance with the LTPP decisions, and stressing the importance of meeting reliability needs. Multiple parties challenged the decision in applications for rehearing on the basis that D.15-05-051 did not comply with CPUC rules because it added considerations not within the scope of the proceeding and authorized procurement that did not comply with the authorizing decisions and was not supported by the evidence. These applications for rehearing were denied in November 2015, but the parties continued with timely Petitions for Writ of Review of D.15-05-051 (and D.15-11-025) in the First District of the California Court of Appeal in December. The appellate court has still not taken action on any of these petitions.

A.14-11-012 (SCE LCR RFO (Western LA Basin)): This application also arose from the CPUC's LTPP Track 1 and Track 4 authorizing decisions that mandated a specific amount of the LA Basin LCRs be met by preferred resources. A.14-11-012 reflects that SCE fell short of that mandate, and met much of its preferred resources obligation with storage. On November 19, 2015, the CPUC issued D.15-11-041 approving SCE's procurements even though SCE fell significantly short on its preferred resources procurement.

Between December 21 and December 24, four applications for rehearing of D.15-11-041 were filed challenging both the legal and evidentiary record support for the outcome the CPUC reached in that decision.

On May 26, the CPUC issued D.16-05-053 denying rehearing, but modifying the original order significantly to find that SCE had *not* met the minimum preferred resource procurement requirements of the authorizing decisions and adding discussion to further justify imposition of a performance requirement for DR that had not been adopted by the CPUC. While the order required an additional preferred-resources procurement of 169.4 MW, SCE was given the discretion to do so by any authorized means (including, but not only, through additional RFOs). D.16-05-053 can be found at:

<http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M162/K888/162888503.pdf>.

On July 1, a timely petition for writ of review of D.15-11-041 and D.16-05-053 was filed in the California Court of Appeal (Second District) by Bill Powers and Los Cerritos Wetlands Trust challenging the legality of both orders.

A.14-11-016 (SCE LCR RFO (Moorpark)): A.14-11-016 (Moorpark) is a smaller authorized procurement specific to the Big Creek/Ventura local reliability area and resulted from the Track 1 decision only, which mandated that SCE use all efforts to meet its LCR need first with preferred resources. SCE's application seeks approval to meet 95% of the authorized procurement with gas-fired generation (GFG), represented by a GFG plant in Oxnard.

At the CPUC's December meetings, a large number of Oxnard residents and others spoke against approval of A.14-11-016. On January 11, the CPUC issued a Proposed Decision (PD) and an Alternate Proposed Decision (APD), both of which did not approve (without prejudice) the larger gas-fired Puente Project (262 MW), based on the need for additional information on "fundamental issues, such as safety, reliability, and environmental justice," that the CPUC determined could emerge from the CEC's pending environmental review of the project. But on February 12, a further APD (Peterman) was issued that *approves* the Puente Project with no further delay, but defers the Ellwood project to a later decision.

The PD and APDs were the focus of a February 18 All-Party Meeting that most Commissioners attended, after which the matter was repeatedly held, but subject to much community opposition, through multiple CPUC Business Meetings. While not a party to A.14-11-016, CEERT wrote to the CPUC opposing its approval of another GFG facility, especially since well-founded objections had been lodged about the absence of need, the Puente Project's adverse environmental and community impacts, the procurement neglecting preferred resources, and the aggravating factor of the Aliso Canyon Storage Facility leakage.

Finally, on May 26, the CPUC issued D.15-05-050, largely approving the results of SCE's RFO, in particular the Puente Project (the Peterman APD), despite the many objections to that project. See: <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M162/K881/162881082.PDF>. The decision continues to support the need for the project and finds it inefficient to await California Energy Commission (CEC) environmental review.

On July 1, three Applications for Rehearing of D.15-05-050 were filed by the City of Oxnard, the Center for Biological Diversity, and jointly by the Sierra Club and the California Environmental Justice Alliance. Legal error arguments remained focused on the lack of need for the project, the CPUC's determination that environmental justice requirements were simply discretionary, and RFO criteria that worked against preferred resources. No CPUC decision on these applications for rehearing has issued.

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

The issues of valuation and "counting" by resource type to meet the local, and potentially long-term, RA obligations of California's load-serving entities remain a prime focus for CEERT. Our goal is to ensure

the fair and proper consideration of the attributes and value that Loading Order preferred resources (e.g., renewable generation) provide to meet RA obligations.

In the current RA Rulemaking R.14-10-010, the CPUC has undertaken two tracks, with Track 1 centered on local RA obligations and refinement to that program for the 2017 RA year, and Track 2 to focus on CPUC adoption of a “durable” flexible capacity requirement (FCR) program, with a decision to be issued later in 2016. (See: Scoping Ruling issued on December 23, 2015 at <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M156/K745/156745018.PDF>.)

CEERT participated in the April 5 Track 2 Workshop on flexible RA. As noted above, we also organized and participated in a May 9 meeting with CPUC Energy Division Director Ed Randolph and members of his RPS and RA teams to address how RPS delivery and RA rules may be being implemented at CAISO in a manner that appears to disadvantage renewable resources.

On June 1, a Workshop Report for the April 5 Track 2 Workshop was filed and served. Based on a revised schedule, parties were given the opportunity to file Comments on June 29 on this Workshop, the Workshop Report, and Track 2 issues, including offering “recommendations for the direction that the development of Flexible Resource Adequacy requirements should take, and the priority among topics.”

CEERT prepared and filed Comments on these issues, which can be found at: <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M164/K302/164302760.PDF>. In those Comments, we stated and supported our position that “the data, reporting, and analysis needed to move the current ‘interim’ FCR Program to a ‘durable’ program, which CEERT first identified in Comments filed in [R.14-10-010] in January 2015, still have not been undertaken or presented, and, in turn, the actual outcome or operation of even the ‘interim’ FCR Program remains non-transparent.” We contended that the CPUC cannot move forward to approve any durable FCR Program unless and until that *transparent* reporting and data collection has been completed.

As CEERT has made clear in filings over the last several months, the CPUC’s decision-making process continues on a “business as usual” path, where none of the transformative changes that have taken place in the law and in the energy market itself (including grid impacts) is considered comprehensively and openly. Thus, with respect to this issue that is an outgrowth of these changes (whether or how flexible capacity is needed), CEERT urged in our June 29 Comments:

A rigorous examination of the “flexibility” experience from the ground up, based on recent experience both here and elsewhere in the world where organized markets are grappling with similar issues of high penetrations of Variable Energy Resources (VERS), is necessary before a “durable” flexibility metric can be adopted. Only with this information can an informed decision be made on the next critical step.

CEERT’s Comments detailed the additional analysis and record development and the process for reviewing that information (i.e., Workshops) that is required before any durable FCR can be adopted.

Closure of Diablo Canyon Nuclear Generating Station (Application to Be Filed)

On June 21, Pacific Gas and Electric Company (PG&E) announced that it had reached a “historic agreement” with Friends of the Earth, Natural Resources Defense Council, Environment California, International Brotherhood of Electrical Workers Local 1245, Coalition of California Utility Employees, and Alliance for Nuclear Responsibility to retire the Diablo Canyon nuclear power plant and replace its generation with “greenhouse-gas-free renewable energy, efficiency and energy storage resources.” As part of the agreement, PG&E will renounce plans to seek renewed operating licenses for Diablo Canyon’s two reactors, which expire in 2024 and 2025. In the intervening years, these parties will seek approval of the plan from the CPUC to replace power from the plant with renewable energy, efficiency and energy

storage resources. The June 20 agreement, labeled a “Joint Proposal,” can be found at <http://www.pge.com/includes/docs/pdfs/safety/dcpp/JointProposal.pdf>.

Given the Joint Proposal’s terms and consequences, CEERT began an in-depth review of the agreement with CEERT staff, affiliates, and proponents shortly after its publication, and attended a Workshop on the Proposal that PG&E convened on July 12.

PG&E originally planned to file an application for approval of the Joint Proposal on July 28, including a first “tranche” of energy efficiency procurement to replace Diablo Canyon power, but on July 26 it issued a press release stating that its application filing would be delayed to permit further “positive ongoing discussions with several stakeholder groups that have provided feedback on the Joint Proposal.” On August 11, PG&E filed its application.

Demand Response

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 increased use of this key resource. Since the December 2014 issuance of D.14-12-024 in the CPUC’s DR proceeding, CEERT has monitored the meetings of DR Working Groups on Supply Resource DR Integration, Load-Modifying Resource (LMR) DR Valuation, LMR DR Operations, the Demand Response Auction Mechanism (DRAM), and DRAM subgroups.

On April 1, the Lawrence Berkeley National Laboratory (LBNL) issued Phase 1 of the DR Potential Study (see: <http://www.cpuc.ca.gov/General.aspx?id=10622>), and on April 13, the CPUC held a workshop in which LBNL presented the Potential Study’s initial findings. On June 23, LBNL provided an errata memo noting that an error was discovered on cost accounting in the “Phase 1 DR Potential Model” and detailing how it will be addressed. Correcting and updating the model should result in increased estimates for cost-effective potential DR resources in California by about 3%.

On May 3, ALJ Hymes issued a Proposed Decision Adopting Bridge Funding for 2017 DR Programs and Activities that was subsequently adopted at the June 9 CPUC Business meeting (with modifications) as Final Decision D.16-06-029, which authorized 2017 DR budgets for PG&E (\$59.9 million), SDG&E (\$23.8 million), and SCE (\$56.3 million). D.16-06-029 also approved SCE’s revised proposal to increase the use of DR programs in order to address impacts of the gas leak at the Aliso Canyon Storage Facility, and authorized a budget of \$11.8 million for this purpose. D.16-06-029 can be viewed at: <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M163/K467/163467479.PDF>.

On May 20, ALJ Hymes issued a Ruling Requesting Responses on future DR programs. Parties were asked questions on DR goals and objectives, improving DR program design, increasing participation and performance, increasing third-party provider participation in the CAISO market, and supporting the integration of supply resources into the CAISO market. On June 17, ALJ Hymes issued a Ruling on the February 19 Workshop Report and Permanent Load Shifting Working Group Report.

CEERT believes it is essential to continue our advocacy in support of DR as a key clean-energy resource, and we will remain active in the CPUC’s DR proceeding and become further involved where possible.

Other CPUC Rulemakings and Governance Actions:

CEERT has had a limited budget to actively participate in other CPUC proceedings focused on distributed energy resources (DERs), integration of DERs, energy efficiency, etc. Nevertheless, we are currently a party to or are tracking the following proceedings to take the opportunity (when appropriate and our budget permits) to advance these resources.

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

CEERT has party status in this rulemaking. The CPUC's January 28 Scoping Memo divided the proceeding into three tracks to run concurrently: 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 includes development of 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 current focus of this proceeding is on five Demonstration Projects: A (Dynamic ICA), B (Optimal LNBA), C (DER Locational Benefits), D (Distribution Operations and High Penetrations of DERs), and E (Micro-Grids Where DERs Serve a Significant Portion of Customer Load and Reliability Services). The proceeding has also created ICA and LNBA working groups.

On May 2, Assigned Commissioner Picker issued a Ruling Refining Integration Capacity and Local Net Benefit Analysis Methodologies and Requirements and Authorizing Demonstration Projects A and B. On May 17, the CPUC issued a Joint Assigned Commissioner and ALJ's Ruling on Track 2 Demonstration Projects. The utilities included proposals for Track 2 Demonstration Projects in their DRP applications, but the Ruling finds that those proposals need to be fleshed out more thoroughly.

The CPUC held a May 23 data access workshop that included presentations by the IOUs and DER providers. The IOUs support data access between utilities and third parties, but want to ensure that privacy protections continue. The DER providers would like a standardized data format, and requested a conversation about data transparency. On July 12, ALJ Allen issued a Ruling that asked parties to suggest modifications that could improve the Track 2 Demonstration Projects and address whether any projects should be combined. The deadline to request evidentiary hearings in this proceeding is extended to July 29.

Given the large scope of the DRP Roadmap, CEERT believes that we will have continued opportunities to participate in this proceeding, and that optimal development of the DRPs will be a crucial step toward increased procurement of renewables.

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

There have been continual working-group meetings in this proceeding, and its scope has been expanded to consider the entire energy product and delivery system from the customer side to the utility side.

On May 3, Commissioner Florio issued a Proposed Decision to Update Portions of the CPUC's Current Cost-Effectiveness Framework. This PD was adopted at the June 9 CPUC Business Meeting, and on June 15 Final Decision D.16-06-007 was issued, adopting (with refinement) immediately required actions that the cost-effectiveness framework working group recommended. The actions address avoided-cost calculator version control, avoided-cost calculator data updates, avoided-cost estimation, defining the resource balance year, and defining costs and benefits. These actions are necessary to ensure an accurate cost-effectiveness analysis in energy efficiency portfolio applications that are due in September.

On June 13, the CPUC held a workshop on the "value engine" aspects of the utility incentive proposal, also called the "Moving Toward Value in Utility Compensation" workshop. The value engine is the difference between the absolute level of a company's return on equity and its cost of equity. Workshop objectives included educating stakeholders on the value-engine aspects of the utility incentive proposal, understanding the utilities' perspectives, and determining next steps. Essentially, the workshop was held to determine the financial forces that impact utility behavior. On June 23, ALJ Hymes issued a Ruling requesting comments on new material introduced at the June 13 workshop and the merits of this material.

An August 4 workshop discussed the utility incentive mechanism for deployment of DERs.

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

Phase 2 of this proceeding addresses “Rolling Portfolio” review processes, guidance on changes for 2016 portfolios, and updates of various metrics to keep portfolios on course through 2016 and beyond. This proceeding has seen increased activity during the past quarter.

In May and June several Rulings were issued, seeking input on approaches for statewide and third-party programs and evaluation, measurement and verification, and energy savings performance incentive issues. Another Ruling provided guidance on compliance with AB 793, which aims to deploy energy management technologies that can provide customers with a better understanding of their energy usage and help them make more informed decisions about how to optimize their energy consumption and reduce their energy bills. This Ruling requires PG&E, SCE, SDG&E and SoCal Gas to propose to the CPUC comprehensive, innovative and scalable programs designed to meet AB 793 requirements.

On July 19, the CPUC issued a Proposed Decision that gives policy guidance on the filing of energy efficiency business plans, as previously contemplated in D.15-10-028, which set up the framework for the energy efficiency Rolling Portfolio process. The PD includes the following provisions:

- Regional energy networks will retain their status as pilots and are requested to submit business plans in coordination with the other energy efficiency program administrators.
- Consistent with the requirements of AB 802, the default baseline policy will be modified to be based on existing conditions, with a number of exceptions as further outlined in this decision.
- The term “statewide” is defined. All upstream and midstream programs, as well as those with market transformation objectives, will be required to be administered by a lead statewide administrator determined by consensus in the business plan filings. Proposals for piloting some downstream programs on a statewide basis are also required in the business plans.
- The term “third party” is defined. Utility administrators are required to maintain the current 20% requirement for third party programs, and to present in their business plans a proposal for transitioning by 2020 to a 60% third-party-designed portfolio.
- Evaluation priorities are expanded to include portfolio and sector optimization.
- Evaluation budgets will remain at 4% of the total portfolio, with 60% reserved for CPUC staff evaluation efforts and 40% for program administrators, to be further divided proportionally among utilities, community choice aggregators, and regional energy networks by appropriate utility service area.
- The weighting Energy Savings Performance Incentive (ESPI) mechanism scores will be modified.
- Evaluation and ESPI processes may be modified further in the future in response to the direction in this decision and the business plan process.

The PD sets January 15, 2017 as the date for all program administrators to file EE business plans, as separate applications.

Energy Storage (R.15-03-011)

On March 26, 2015, the CPUC issued an OIR to consider policy and implementation refinements to the Energy Storage Procurement Framework and Design Program (D.13-10-040, D.14-10-045) and Related Action Plan of the California Energy Storage Roadmap. CEERT is a party to this proceeding, which is divided into two tracks. Track 1 considered only those issues that must be expeditiously resolved prior to commencement of the IOUs’ 2016 energy storage procurement solicitations and the required Tier 2 Advice Letter compliance filings of Electric Service Providers and Community Choice Aggregators. Track 2 will consider additional issues for the further development and refinement of the Program.

On April 22, ALJ DeAngelis issued a Ruling that scheduled workshops on May 2 and 3 on the topics of station power and multiple-use application of energy storage systems. Comments on the Ruling were filed on May 13 and Reply Comments were filed on May 20.

West of Devers Transmission Upgrade Project (A.13-10-020)

On October 25, 2013, Southern California Edison (SCE) filed an Application for a Certificate of Public Convenience and Necessity for the West of Devers Upgrade Project (WODUP) and for an Interim Decision approving the proposed transaction between SCE and Morongo Transmission LLC.

On April 11, ALJ Yacknin issued a Proposed Decision granting a CPCN for WODUP, subject to identified mitigation measures. The PD certifies the Environmental Impact Report and finds that the project benefits of fulfilling generators' interconnection requests, facilitating deliverability for renewable energy resources, and facilitating achievement of California's new 50% RPS outweigh the project's unavoidable adverse environmental impacts on air quality, noise, and visual and cultural resources. This PD is of crucial importance, as the WODUP upgrades will enable planning beyond the next RPS compliance period and provide infrastructure for deep GHG reductions.

On July 7, Commission President Picker issued an Alternate Proposed Decision which only makes modifications to mitigation measures that SCE proposed. The original PD denied SCE's request that measures mitigating direct impacts to threatened and endangered species be revised to not apply within the applicable Multi-Species Habitat Conservation Plan (MSHCP) area if SCE becomes a participating special entity in the MSHCP. The Alternate Proposed Decision approves SCE's request.

Time-Of-Use (TOU) Rates (R.15-12-012)

On December 28, the CPUC issued an OIR for a framework for designing, implementing, and modifying time periods for use in future TOU rates. On May 3, Commission President Picker and ALJ McKinney issued a Scoping Memo and Ruling that focused the proceeding on how TOU periods should be set and used in rate designs, as well as time-of-delivery (TOD) periods in certain resource procurement contracts.

The analysis in this proceeding has three components: (1) methodology for setting and updating TOU periods that take into account the grid perspective, (2) framework for incorporating data into rate design to reflect marginal costs and the grid perspective while adhering to rate design principles and statutory requirements, and (3) assessment and evaluation of (1) and (2) using illustrative time-varying rate designs.

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

On December 19, 2013, the CPUC issued an OIR on Policies to Promote a Partnership Framework between Energy Investor Owned Utilities and the Water Sector to Promote Water-Energy Nexus Programs. On December 2, 2015, Assigned Commissioner Sandoval issued a Ruling seeking proposals for a pilot opt-in Energy Matinee Pricing Tariff for commercial, industrial and agricultural customers to promote the use of renewable energy and low-water-use energy generation when it is most abundant on the grid. The main focus of this proceeding has been the development of these "matinee rates."

On June 9, the CPUC issued D.16-06-008, which approves pilots by PG&E, SCE and SoCal Gas to test the impact on energy water behaviors of joint delivery of energy and water data to customers and a pilot by SDG&E to explore technical issues associated with shared use of an energy utility advanced metering communication network. On June 14, the CPUC issued a Proposed Decision that approves pilots by PG&E, SCE and SDG&E to test the concept of matinee rates as a means to reduce both energy and water use at high-impact times. Matinee pricing would use price signals to encourage commercial, industrial and agricultural customers to conserve energy at times of system-wide peak usage.

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

CEERT is tracking this proceeding because of its potential significance for document access at the CPUC. On June 28 the CPUC issued a Proposed Decision that implements an updated and clarified process for submitting potentially confidential documents to the CPUC, which is intended to ensure consistency across industries and expedite CPUC review of requests for confidential treatment in response to California Public Records Act requests. The PD also provides guidance for the process that the CPUC will use to determine whether a potentially confidential document can be disclosed, with the goals of consistent treatment and prompt disclosure of non-confidential documents. This PD is an interim decision, and the proceeding remains open for further refinement and improvement of the CPUC's processes.

Southern California Activities

CEERT continued to work on removing barriers to transmission expansion and renewable procurement in the Salton Sea region, and held discussions with Kevin Kelly of the Imperial Irrigation District (IID), consultants working with the Walton Foundation on restoration of the Salton Sea, and geothermal developers seeking to generate new projects incorporating minerals extraction and desalination. We also met with CAISO management to discuss conflicts and disagreements with IID over the allocation of deliverability and its impact on resource adequacy.

CEERT met with leaders of the Los Angeles Department of Water and Power to discuss the Energy Imbalance Market, large-scale storage, and barriers to geothermal procurement in the Imperial Valley.

Short-Lived Climate Pollutants (SLCPs)

CEERT took part in meetings of the California Environmental Dialogue, a group of California business and environmental stakeholders, and officials from CARB and the U.S. Environmental Protection Agency to discuss recent developments on short-lived climate pollutants. CARB gave an overview of its proposed scoping plan to reduce emissions of methane, black carbon and F gases, and discussed proposed funding for methane digesters. We met with CARB staff to discuss strategies for GHG-reduction funding and market incentives for construction of new methane digesters and expanded use of bio-methane.

CEERT submitted comments on CARB's draft of its *Proposed Short-lived Climate Pollutant Reduction Strategy* jointly with Californians against Waste, Natural Resources Defense Council, Sierra Club of California, San Francisco's Department of the Environment, and other organizations. Those comments continued to support CARB's goal of reducing methane emissions 40% by 2030 by diverting almost all organic materials from landfills by 2025 and reducing methane pollution from California's dairies, waste water treatment plants, and oil and gas industry. Methane is the second largest contributor to global warming, and over a 20-year period is roughly 85 times more powerful than CO₂ at warming the climate.

CARB staff are currently evaluating stakeholders' written input and oral testimony on the *Proposed SLCP Reduction Strategy* and plan to release the final *Strategy* for stakeholder review in the fall.

CEERT supported CARB's July 21 adoption of its new oil and gas (O&G) regulations, which seek to reduce GHG emissions from the state's O&G industry. The regulations require regulated entities to take actions to limit intentional (vented) and unintentional (leaked or fugitive) emissions from active and idle equipment and operations—e.g., emissions that could be previously vented must now be collected or avoided. Research indicates that depending on the end use (e.g., power generation or transportation), an aggregate annual average leakage rate of 2-3% negates any climate benefit from using natural gas.

Though their focus is GHG mitigation, the regulations should also deliver considerable air quality co-benefits by eliminating thousands of tons of criteria pollutants, especially volatile organic compounds. Despite California's efforts to clean up climate and air emissions from its O&G industry, the state still imports about 90% of its natural gas (NG) from out of state. CEERT therefore recommended that CARB

work closely with the U.S. EPA's implementation of President Obama's Climate Action Plan to ensure that O&G methane emissions outside the state are maximally reduced, and below the 2-3% threshold.

In early June, CARB, the CPUC and the CEC convened a joint two-day symposium (<http://www.arb.ca.gov/cc/oil-gas/symp.htm>) on addressing fugitive methane emissions from California's NG system. The symposium brought together state and federal regulators, O&G industry representatives, researchers, technology providers, industry consultants, and NGOs.

CEERT's John Shears was part of the symposium's closing panel on policies for reducing O&G industry emissions. He stressed methane's role in creating background ozone (UNEP and WMO attribute about two-thirds of the rise in global levels of tropospheric background ozone to methane pollution), and the co-benefits of lowering California's methane emissions. Shears recommended that CARB and federal agencies regulate methane as an important air pollutant, not just as a climate pollutant, and that they work together to tighten oversight of emissions from the entire U.S. NG system. He stressed that for NG to be truly effective as a bridge fuel to a near-zero-carbon future, industry and regulators would have to maintain aggregate average annual system-wide NG emissions below the 2-3% threshold. Tim O'Connor of CEERT affiliate Environmental Defense Fund highlighted similar points on a panel earlier in the day.

Clean Transportation Advocacy

Low-Carbon Fuel Standard (LCFS)

The latest evaluation of the LCFS indicates the program has succeeded in reducing the average carbon intensity (CI) of California's alternative transportation fuel by 21% from 86 gCO₂e/MJ in 2011 to just over 68 gCO₂e/MJ in 2015. During that period there were 16.8 million metric tons (MMT) CO₂e in total emission reductions, or 7.4 MMT CO₂e in excess of the target of 9.2 MMT CO₂e (81% over-compliance).

Ethanol's contribution to the reduction in the CI of California's fuel has remained relatively flat, being limited by the 10% blend wall. Biodiesel, renewable diesel, and biogas accounted for the majority of the increase in alternative fuel use during 2014-15, leading to credits in the diesel fuel pool for the first time surpassing those in the gasoline pool. Electricity use increased from 0.4 million gallons of gasoline equivalent (MMgge) in 2011 to 13 MMgge in 2015. Until legal challenges were resolved, the LCFS had been frozen at a 1% reduction target (below the 2010 baseline) during 2013-2015, but the target increases to 2% for 2016. The LCFS requires that the CI of the gasoline and diesel pools be reduced 10% by 2020.

Electrifying Transportation

CEERT continues to track R.13-11-007 and A.15-02-009 (PG&E's Electric Vehicle Infrastructure and Education Program). Several of CEERT's affiliates remain active parties in these proceedings.

Alternative-Fueled Vehicles (R13-11-007)

The California Public Utilities Commission (CPUC) issued an Amended Scoping Memo and Ruling adding transportation electrification issues to the proceeding pursuant to SB 350, reprioritizing the rulemaking's activities given the approval of SCE's *Charge Ready* (A.14-10-014) and SDG&E's *Power Your Drive* (A.14-04-014) electric vehicle (EV) Pilots, and proposing a revised schedule for addressing transportation electrification and the remaining original issues.

The CPUC held three workshops, two convened jointly with the California Air Resources Board (CARB) and the California Energy Commission (CEC), to discuss the expanded scope of the proceeding (including advanced clean transit and medium- and heavy-duty vehicle electrification). Based on the progress with the IOU pilots and comments received in May on the workshops and the issues raised in the Amended Scoping Memo and Ruling, the CPUC will issue a ruling inviting further applications on transportation electrification, including how to integrate EVs with evolving regulations for demand

response and energy storage, and vehicle-to-grid applications that back-feed electricity beyond the primary utility meter, including “battery second life.”

A.15-02-009

Evidentiary hearings were held April 25 – 28 on the proposed joint settlement agreement for PG&E’s *iChargeForward* Pilot. On July 7 the ALJ issued a set of supplementary clarifying questions to the Joint Settling Parties (JSPs) on outstanding technical issues, and gave the JSPs two weeks to respond, with other parties getting a subsequent week to comment on the JSPs’ responses. The proceeding awaits further CPUC action.

Fuel-Cell Electric Vehicles and Hydrogen Fueling Infrastructure

On July 15 CARB released its latest progress report on fuel-cell electric vehicles (FCEVs) and hydrogen fueling. California now has 20 hydrogen fueling stations that are open to the public and operate like retail gas stations, including in West Sacramento and Truckee, and 331 FCEVs from four manufacturers are currently on the road. CARB and the CEC project 38 stations by the end of 2016, including networks in Los Angeles and San Francisco and connector stations in Coalinga and Santa Barbara; 50 fueling stations and roughly 6,600 FCEVs by the end of 2017; and approximately 75 stations and 18,500 FCEVs by 2020.

Alternative and Renewable Fuel and Vehicle Technology Program

The Staff Draft of the 2017-18 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program will be released in late fall.