CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES
QUARTERLY STAFF REPORT
APRIL – JUNE, 2011

EXECUTIVE SUMMARY: THE PAST THREE MONTHS AT A GLANCE *(pages 1–2):*

Distributed-Generation Advocacy *(full report on page 3)*
Danielle Osborn Mills convened several *Distributed Generation (DG) caucus meetings*, mostly with representatives of photovoltaics and fuel cell companies.

Danielle coordinated with CEERT affiliates on comments to the CEC about *the Governor's goal of 12,000 MW of renewable DG*. We initiated discussions between CEC staff and representatives of the fuel cell, microturbine, distributed wind, and solar heating and cooling industries on the 12,000 MW goal.

Big Solar Permitting and Planning *(full report on pages 3 – 4)*
CEERT has continued to provide assistance in *resolving key issues facing several of the utility-scale solar projects* seeking DOE loan guarantees and transmission interconnection, including work with the CAISO, the CPUC, and the Governor's office.

Solar Trust of America broke ground on its $2 billion Blythe project, which on completion will be *the largest solar plant in the world*.

We organized meetings with the solar and wind industries and the Secretary of Resources, CEC, and Governor's office to discuss *DRECP concerns*. We are providing comments on issues such as the new RPS acreage calculator, which projects the amounts of land needed for solar, wind, and geothermal statewide.

We continued to provide comments and actively engage with the *BLM's Solar PEIS* and the California BLM's EIS process, especially on a *new development zone for the West Mojave*. CEERT worked to reconcile differences between conservationists and the solar industry on solar development zones.

Advocacy at the CPUC *(full report on pages 5 – 7)*
CEERT priorities for *implementation of the 33% RPS* (SB 2) are the implementation of SB 32 (expanded feed-in tariff), revisions to RPS-eligible "products" pursuant to SB 2, changes in compliance requirements resulting from SB 2, and re-examination of project viability criteria and application to RPS projects.

CEERT filed briefs on *SB 32 implementation*, arguing that its provisions were lawful, that they represented an expansion of an existing FIT, and that the changes it called for could be accomplished quickly.

CEERT continued our active participation on all three tracks of *the CPUC's LTPP rulemaking*. CEERT filed an opening brief supporting full integration of renewables into long-term procurement plans.

CEERT filed comments on a CPUC Proposed Decision, seeking to avoid rules that unnecessarily limit customer or designated third-party access to the customer's *Smart Grid energy usage data*.

CEERT filed comments challenging a reduction in incentives and changes to eligibility in the *Self-Generation Incentive Program*.

Climate Advocacy *(full report on page 7)*
A lawsuit against CARB's proposed cap-and-trade program has slowed AB 32 implementation. CEERT will stay engaged and keep members aware of developments.

Electric System Planning *(full report on page 8)*
CEERT staff continues our work on the implementation of the 33% RPS. However, the CAISO assessment that *system requirements should be able to be satisfied* with little or no additional infrastructure appears to minimize the need for further system planning to meet the state's current renewable target.

Staff has therefore proposed that CEERT take the lead in considering implications of *longer-term renewable energy goals beyond the 2020 timeframe*.

Low-Carbon Grid and Renewables Integration *(full report on pages 8 – 11)*
The CAISO board approved its *2010 – 2011 transmission plan* and a new *Dynamic Scheduling tariff*.

The CAISO's *PIRP provisions* and monthly netting of deviations for most wind and solar resources will end in 2015, and these resources will then have the flexibility to bid into CAISO markets.

CEERT filed comments on the CAISO's *Renewable Integration Market & Product Review 2* proposals.

A CAISO model used four CPUC scenarios that all showed there is *no need for additional resources to manage 33% renewables by 2020*.

A recent CEC workshop addressed *distribution infrastructure challenges and Smart Grid solutions* to advance 12,000 MW of distributed generation.

Transportation Advocacy *(full report on pages 11 – 13)*
CEERT is active in *Plug-in Electric Vehicle Collaborative* working groups, and helped PEVC staff prepare a proposal to establish Regional EV Readiness Councils across California.

The CPUC issued a Proposed Phase II Decision in its *Alternative Fueled Vehicle Proceeding*. CEERT filed comments urging that future utility work in this area remain linked with the Smart Grid Proceeding.

CEERT worked with CARB staff on workplan revisions for the *Low Carbon Fuel Standard* program.

CEERT serves as technical lead for state and national NGOs on criteria emissions standards for current revisions to the *LEV regulations*, which could form the basis for new federal Tier III emissions standards.

CEERT is exploring the possibility of developing an integrated vision and strategy for the *deployment of stationary and mobile fuel cells* in California.

CEERT worked with CEC staff, auto companies, and CaFCP to help resolve differences over the level of AB 118 Program funding needed to support the market launch of fuel cell vehicles in 2014.

Recent V. John White Speaking Engagements *(full report on page 13)*
John spoke at several meetings and conferences over the past four months.

Distributed Generation Advocacy
CEERT's Danielle Osborn Mills convened several Distributed Generation (DG) caucus meetings, primarily with representatives of photovoltaics and fuel cell companies. The DG caucus meetings share information from CEERT's affiliated companies on market trends and developments, and identify barriers and opportunities for expanding DG markets in California.

CEERT met with Governor's Office staff and California Energy Commissioners to provide input to their agenda for the May 9 CEC Integrated Energy Policy Report (IEPR) workshop on localized renewable energy generation.

We also participated in a meeting in the Governor's office to discuss pending CPUC decisions on the Self Generation Incentive Program, and the need to provide funding for energy storage technologies.

Danielle Osborn Mills coordinated with CEERT affiliates and other advocacy organizations to draft and file comments to the CEC on ways to achieve the Governor's goal of 12,000 MW of localized renewable generation statewide. These comments emphasized the need to encourage technological and geographic diversity in achieving this goal and to set goals based on both progress and potential.

CEERT also provided information to CEC staff on the potential of non-solar renewable DG technologies in California in order to help staff allocate a portion of the 12,000 MW goal to various regions and technologies. As part of this process, CEERT initiated discussions between CEC staff and representatives from the fuel cell, microturbine, distributed wind, and solar heating and cooling industries to ensure the CEC incorporates this information into their estimates of California's DG potential.

(See also this report's sections on the Self-Generation Incentive Program and Distributed Generation on page 6 and the recent CEC Distributed Generation workshop on page 10.)

Big Solar Permitting and Planning
Project Development
CEERT continued to provide assistance in resolving key issues facing several of the utility-scale solar projects seeking DOE loan guarantees and transmission interconnection, including work with the CAISO, the CPUC, and the Governor's office. We have convened and participated in numerous meetings with the developer and conservation communities throughout the last six weeks. We have been in regular communication with state and federal regulatory and permitting agencies. We participated in meetings in Washington, D.C. with Secretary Salazar, and in Sacramento with the Deputy Secretary of the Interior and the California Director of the Bureau of Land Management.

On June 17 Solar Trust of America broke ground on its 1,000 MW, $2 billion Blythe project, which on completion will be the largest solar plant in the world. Governor Brown and Secretary Salazar participated in the groundbreaking ceremony. Solar Trust joins BrightSource as the only companies that have started construction on the 2010 ARRA-funded projects. On another front, Solar Trust has requested a suspension on its Ridgecrest project to allow time for readjustments that will enable it to move forward.

CEERT helped to delay action on a proposed franchise fee of 2% of gross annual revenue for solar projects in Riverside County, as county policymakers do not want to undermine their communities' ability to compete for solar projects and the jobs that come with them. Solar companies' representatives said the fee would leave them unable to supply utilities with competitively priced power. Solar Trust's Blythe project won an exemption from all future fees in order to preserve its financing package, and the county will negotiate a separate fee arrangement for First Solar's 550 MW Desert Center project.

The Desert Renewable Energy Conservation Plan (DRECP)

CEERT has continued our very active participation in the DRECP. We organized meetings with the solar and wind industries and the Secretary of Resources, CEC, and Governor's office to discuss issues and concerns with the DRECP, and we proposed and helped explore a restructuring that would streamline the process and enhance the likelihood of it achieving its goals. We also continued our work in reviewing agency-developed products in the Mapping, Covered Activities, and Covered Species working groups.

We are continuing to provide comments on the many items being rolled out as the DRECP moves toward the release of the Draft Conservation Plan in August. Of particular interest is the recently released RPS acreage calculator, which projects the amounts of land needed for solar, wind, and geothermal statewide.

CEERT is currently working with LSA and other parties on a solar development plan for the DRECP. We continue to convene working sessions with industry leaders and DRECP staff, and to advocate that the Plan include accurate information on renewable energy resource development.

Chris Beal of the Resources Law Group has been appointed DRECP deputy director, replacing Michael Valentine, who is retiring. CEERT anticipates maintaining a strong collaborative relationship with Chris, based on our work with him over the last two years.

BLM Solar Programmatic Environmental Impact Statement (PEIS)

CEERT continues to provide comments and actively engage with the Bureau of Land Management's Solar PEIS, and with the California BLM's independent EIS process. CEERT's Anne Baker joined representatives of the developer and environmental communities in a meeting with Department of Interior Deputy Secretary David Hayes to discuss proposal options for the overall BLM Solar PEIS.

California BLM responded to CEERT's proposal for a new zone for development in the West Mojave with some options for areas the zone might cover. BLM has secured funding to begin the EIS process for a West Mojave zone, which has been one of the barriers to development in California's highest solar-radiation area. CEERT has formed a working group with the environmental community to develop a proposal to BLM for such a zone.

Working with Stakeholders

CEERT worked quietly but intensely behind the scenes to reconcile significant differences between the land conservation community and the solar industry on the question of solar development zones. We have convened multiple discussions with environmental groups, agencies, and the industry. These efforts resulted in an important agreement on a set of joint comments on the BLM Draft PEIS, submitted by the Desert Renewable Energy Working Group, and in a more moderate set of comments submitted by the solar industry.

CEERT continues to work with conservation representatives and developers in the Mantell group to develop policies on the PEIS and the DRECP. The group will be turning more of its attention to the problems with the development of the Conservation Strategy for the DRECP, and the governance structure of the DRECP and its lack of transparency to stakeholders.

On June 18 Los Angeles County held a public hearing on "Town and Country," a general-plan update for the Antelope Valley that delineates four levels of renewable energy zones. CEERT attended the meeting and participated in the group discussion, and will be submitting comments on the plan.

On June 16 – 17 we participated in a two-day tour of potential solar development sites in the West Mojave and the Imperial Valley, hosted by Terry O'Brien of the California Energy Commission (CEC).

Advocacy at the CPUC

Renewable Portfolio Standard (RPS) Program

Through April, RPS Program implementation continued to focus on issues or proposals specific or tied to existing law. The authorization of tradable renewable energy credits (TRECs) (D.11-01-025) and approval of the Renewable Auction Mechanism (RAM) (D.10-12-048; D.11-04-008 (allowing bilateral negotiations)) are decisions based on the 20% RPS law, including restrictions on TRECs authorization and use of a market price referent (MPR) reasonableness benchmark.

To date, the RAM advice letters that the investor owned utilities (IOUs) filed in late February 2011 have still not been approved, a result of still-pending petitions for modification of the underlying order. In this same time period, the Commission also authorized the IOUs' RPS Procurement Plans and Solicitations for 2011, based on plans filed and amended from December 2009 through much of 2010 (D.11-04-030).

With the Governor's signing of the 33% RPS bill (SB 2) in April, the focus has turned to the implementation of this law. The CPUC issued a new RPS rulemaking (R.11-05-005), succeeding and replacing R.06-02-012, R.06-05-026, and R.08-08-009, to deal with remaining issues related to RPS generally and amended and new requirements of SB 2. New Commissioner Mark Ferron has been assigned to this new rulemaking, with Simon and Mattson continuing as assigned ALJs, joined by ALJ Regina DeAngelis.

R.11-05-005 commenced with a call for comments from the parties on their initial priorities for the proceeding. CEERT was among the parties for whom the highest priorities were the overdue implementation of SB 32 (expanded feed-in tariff (FIT)), revisions to RPS-eligible "products" pursuant to SB 2, changes in compliance requirements resulting from SB 2, and re-examination of project viability criteria and application to RPS projects.

A prehearing conference (PHC) was held on June 13. At that time, the assigned Commissioner and ALJs confirmed that the initial priorities would focus on SB 32 implementation, RPS product definitions, and new compliance targets. ALJ Simon advised that the rulemaking would require a lot of input from the parties, but no further ruling has been issued as of this date seeking comment, setting a schedule, or confirming the scope of the proceeding. CEERT plans to continue our active role on these issues.

Feed-In Tariffs (FITs)

As noted above, Assigned Commissioner Ferron and the Assigned ALJs have confirmed that implementation of SB 32 (expanded FIT) will be an initial priority for the new RPS rulemaking. At the June 13 PHC, ALJ Simon also stated that parties would not be asked to brief or comment on issues related to SB 32 implementation on which comment had already been provided. In March, parties, including CEERT, filed detailed briefs on the legality and manner in which this law should be implemented.

In our briefs, CEERT demonstrated again that the provisions of SB 32 are lawful; that these provisions represent an expansion of an existing FIT, with which the CPUC already had experience; and that such changes could, and should, be accomplished quickly and be consistent with the statute. While no schedule for a decision has been set, CEERT has some hope that an order will be issued by the end of the year.

Long-Term Procurement Plan Proceeding

CEERT has continued our active participation on all three tracks of the CPUC's LTPP rulemaking (R.10-05-006): Track I (system planning), Track II (bundled procurement plans), and Track III (procurement rules, greenhouse gas (GHG) product procurement, and bid evaluation issues). In May, the focus has been on Track II, the IOUs' AB 57 procurement plans — the ten-year plans, with pre-approval of energy products required to meet the needs of the IOUs' "bundled" customers from 2012 to 2021.

On May 4, CEERT served our prepared testimony, sponsored by Dr. Rich Ferguson (witness), in Track II. In this testimony, Dr. Ferguson reviews and supports, with limited proposed modifications, a proposal SCE made in its Track II testimony to include a renewables product among its AB 57 pre-approved procurement authority.

CEERT has long believed that full integration of renewables into long-term procurement plans is a needed next step toward displacing fossil resources. Today, the rules and restrictions that apply to renewables procurement (including the IOUs' review of every purchase) do not apply to fossil procurement, especially when pre-approved as part of an LTPP. The SCE proposal would permit renewables, like fossil resources, to be a pre-approved AB 57 product, a step that is more consistent with the CPUC's loading order, in which the first and highest supply-side resource option is to be renewables generation.

On May 23, CEERT's testimony, which was supported in SCE's and PG&E's reply testimony, but opposed by the Division of Ratepayer Advocates, was admitted into the record as Exhibit 1100. On June 17, CEERT filed an opening brief in support of our position. Reply briefs are due on June 30.

While Track I modeling and testimony by the California Independent System Operator (CAISO) and IOUs was scheduled originally to be served early in June, the CAISO and IOUs asked for an extension because of changes that both claimed the models required. At a May 24PHC, the ALJ expressed skepticism about certain of these changes being required or requiring a delay, but eventually did permit a later submission date. However, this has created a more compressed schedule for testimony by other parties. Currently, that testimony is due on August 4, with hearings to start August 11. CEERT, which has long been involved in reviewing the 33% renewables integration modeling at issue here, does plan to review the final CAISO and IOUs models and testimony carefully, and is likely to serve testimony in August.

Smart Grid Rulemaking

On May 6, Assigned Commissioner Peevey issued a Proposed Decision on privacy and security rules for customer energy usage data from Smart Meters in R.08-12-009 (Smart Grid). In collaboration with our affiliates Environmental Defense Fund and EnerNOC, CEERT reviewed and discussed this PD, with a particular focus on the PD's overreaching on CPUC jurisdiction and IOU control over customer usage data at or beyond the customer side of the meter. Resulting restrictions or interference with a customer's response to its own energy usage data, alone or with the assistance of designated third parties, would diminish the potential for change in usage habits.

On June 2, CEERT filed comments on the Proposed Decision, seeking changes to ensure a better demarcation between utility area of control and customer access, and avoid rules that unnecessarily prevent or limit customer (or its designated third party) access to the customer's energy usage data. The PD was scheduled to be considered at the CPUC's Business Meeting of June 23, but has been held to its July 14 meeting. However, the Assigned ALJ (Sullivan) has contacted CEERT to discuss our positions. CEERT believes that beneficial changes are likely to be made to the PD, which will make it more consistent with limits on the Commission's jurisdiction and the Legislature's express directions in SB 1476 (Padilla).

Self-Generation Incentive Program (SGIP) / Distributed Generation

CEERT staff engaged in a thorough review of the CPUC Energy Division's Revised SGIP Report in R.10-05-004 and party comments on these revisions. On May 9, CEERT filed Reply Comments on the party comments and the Report, supporting those parties that challenged the Revised Report's reduction in incentives and inappropriate changes to eligibility. CEERT also asked that a proposed "seller concentration" cap only be adopted on an interim basis. A PD has been anticipated, but not yet issued.

CEERT attended a Rule 21 Working Group CPUC meeting on April 29. Rule 21 governs interconnections with the IOUs at the distribution and transmission levels. The discussion focused on the dynamic

nature of the distribution grid (always needing to change in response to continual change in loads) and the increased volatility resulting from customer interconnections at the distribution level (more customers than in remote transmission interconnections). The IOUs are particularly concerned with a few customer connections altering the whole system or requiring a costly upgrade. The next steps include an anticipated "White Paper/Straw Proposal" from CPUC staff on the scope and priorities for Rule 21 reform.

Energy Storage Rulemaking (R.10-12-007)
Following a PHC in R.10-12-007 (Energy Storage), the Commission issued a Scoping Ruling for the proceeding on May 31. The Scoping Memo establishes issue phases for the rulemaking, the first of which is consideration of applicable policies and guidelines for energy storage. This phase starts with a workshop to be held on June 28; comments will follow, with a decision expected in the first quarter of 2012.

Climate Advocacy
AB 32 Implementation
Despite the defeat of Proposition 23 last fall, the future form of the state's climate program remains somewhat uncertain at the moment. A lawsuit brought by the Association of Irritated Residents against the California Air Resources Board has slowed implementation and caused CARB to postpone tentative workshops on the treatment of imported electricity and other key issues until the suit is resolved. In late May, the trial court in the case issued a writ of mandate preventing CARB from moving forward on cap and trade. CARB is appealing the underlying ruling — which held that the Board failed to comply with the California Environmental Quality Act — but has completed its revised CEQA alternatives analysis detailing the same alternatives outlined in the 2008 play: (1) no-project alternative, (2) cap-and-trade, (3) source-specific reductions, (4) carbon fee or tax, and (5) a combination of the foregoing.

CARB will hold a workshop in mid-July, and now that it has completed its revised analysis, intends to release language for the 15-day rule process within the next several weeks. Among these changes should be language on the treatment of electricity imports and renewable energy credits, among other relevant issues. CEERT will stay engaged and keep members aware of the proposed language.

CEERT's Climate Workplan for the Coming Period
In light of the delays with CARB's implementation of the cap-and-trade program, and given the remaining uncertainty about the Governor's intentions for the cap-and-trade program, CEERT has committed to working on climate policy through the following issues:

- *Complementary energy policies for AB 32*: 33% RPS implementation; advocacy for faster, leaner natural gas plants and the phase-out of older, inefficient units; advocacy on energy efficiency programs and financing mechanisms, combined heat and power, solar water heating, and EE savings and performance disclosure in state buildings.
- *Interagency coordination on key issues*: measuring GHG emission reductions; CPUC rulemaking on GHG allowances.
- *Advocacy for Southern California municipal utilities' improving efficiency, deploying renewables, and reducing fossil energy use.*
- *Advocacy for reducing short-lived pollutants*: development of a statewide emissions inventory of short-lived pollutants; development of a statewide strategy to reduce methane; increased use of bio-methane from animal waste, landfills, and wastewater treatment plants; and development of incentives for DG technologies such as fuel cells and thermal oxidation.
- *Work with regional partners and companies to create a regional dialogue on*: improved coordination and resource-sharing between and among balancing area authorities; the benefits of geographic diversity of renewable development; and clean technology economic development.

Electric System Planning

Concerns about renewable integration issues have waned as a result of the presentation that the CAISO gave to the CEC on April 29. As a result of the CAISO's analysis, based on renewable development scenarios the CPUC provided, the presentation concluded, "Assuming that CA achieves its demand side objectives, preliminary results indicate most operational requirements can be satisfied with potential need for measures to address some over-generation conditions." Furthermore, the CAISO's recently adopted 2010 – 2011 transmission plan expects that transmission projects now in the permitting pipeline provide adequate capacity to meet the 33% target.

The devil lurks in the details, so CEERT staff continues our work in various venues on the implementation of the now-official 33% RPS legislation. However, the CAISO assessment that system requirements should be able to be satisfied with little or no additional infrastructure appears to minimize the need for further system planning to meet the state's current renewable target.

Staff has therefore proposed that CEERT take the lead in considering implications of longer-term renewable energy goals beyond the 2020 timeframe. A goal of 50% renewable penetration by year 2030 might be considered, for example. Under such a scenario, integration issues such as over-generation at sunup and under-generation at sundown become increasingly problematical and will require adequate attention from system planners. In particular, gas-fired generation remaining on the system will need to be considerably more flexible than the current fleet. Failure to consider the implications of increasing reliance on renewables beyond 2020 could result in poor decisions on new or repowered gas-fired generation in the near term. California needs to start thinking "Beyond 2020."

Low-Carbon Grid and Renewables Integration Program

CEERT continues to participate actively in a number of key renewables-integration proceedings at the CAISO, CPUC, CEC, and FERC.

CAISO May 2011Board Meeting

The CAISO board approved its 2010 – 2011 transmission plan and the new Dynamic Scheduling tariff. A number of stakeholder groups opposed the 2010 – 2011 transmission plan on the grounds that the CAISO did not fully use the new Revised Transmission Planning Process (RTPP) tariff, which FERC recently approved. Under the new RTPP, the CAISO should have opened up policy on economically driven transmission lines to merchant developers. However, the plan the board approved was based on Large Generator Interconnection Agreements previously created between the CAISO and incumbent IOUs, with no participation whatsoever by merchant developers. A strong argument for adoption was that any delays would put ARRA money at risk, so it was generally agreed not to let the perfect be the enemy of good enough, and to improve upon the process in future planning cycles.

The Dynamic Scheduling tariff has been years in the making, and provides a mechanism for dynamically importing or exporting energy and ancillary services to the CAISO balancing authority area (BAA). One significant remaining concern is that under the terms of the tariff, firm transmission must exist for dynamic scheduling to occur. Given the lack of a spot market for transmission outside of the CAISO BAA, it is unclear how effective the introduction of the dynamic scheduling tariff will actually be.

CAISO Renewable Integration Market and Product Review, Phase 1 (RIMPR1)

The CAISO has now reversed course again on its proposal to update the Participating Intermittent Renewable Program (PIRP), which was originally developed to provide a level of financial protection to variable energy resources (VERs).

Under the new proposal, PIRP provisions and the monthly netting of deviations for most wind and solar resources will end in 2015, and these VERs will then have the flexibility to bid into CAISO markets like

other resources. Limited grandfathering will be available for older resources that are not able to reduce output in response to dispatch instructions. RIMPR Phase 2 (see below) might provide additional mechanisms that will enable VERs to have just and reasonable market participation.

Convergence bidding is a financial mechanism that can be used to hedge a physical market position, and may provide an alternative to PIRP. However, the CAISO is currently having significant issues with convergence bidding at the interties, since an arbitrage opportunity exists there due to lack of convergence of real-time and forward markets, and market players are exploiting this opportunity, with load paying the cost. The CAISO is considering eliminating convergence bidding at the interties, but this would not affect convergence bidding within the CAISO BAA.

CAISO Renewable Integration Market and Product Review, Phase 2 (RIMPR2)
The CAISO just launched a massive new initiative to potentially redesign their entire market structure, including the potential introduction of renewable integration charges. Options being considered include: Hourly Contingency-Only Election for Operating Reserves, Enhancements to Residual Unit Commitment, Pay for Performance Regulation, Load Following Reserve, Flexible Ramping Constraint, Allocation of Integration Costs, 15-minute Real-Time Market, Capacity Markets, and Forward Reserve Markets. A detailed summary of all RIMPR2 proposals and CEERT's reply comments is available upon request.

CAISO Generation Interconnection Process (GIP), Phase 2
The CAISO continues its overhaul of the GIP. Based on stakeholder input from the GIP2 work group 1, "Cost Assessment Provisions" has been taken out of the GIP2 scope and is now being managed as its own high-priority initiative: "Integration of GIP and Transmission Planning Process." This move might allow the CAISO to take a more holistic view of interconnection and transmission planning.

Other issues being examined are: (a) how generators interconnect to non-PTO (participating transmission owner) facilities in the CAISO BAA, (b) how projects are studied for full deliverability status, (c) Triggers for Financial Security Posting Deadlines, (d) PTO per-unit cost information and methodology for estimating costs, (e) how financing of generator projects proceed when COD is significantly out of alignment with required transmission upgrades, and (f) handling of interconnection deposit refunds.

Per this last item: if a project in the queue complies with the RPS, then its security deposit will be refunded once the unit is operational. But if the project provides renewable generation in excess of RPS compliance, then security deposits may go toward network upgrades. This may create a significant barrier to financing renewable projects that arbitrarily do not get counted toward the current 33% RPS.

CAISO Regulation Energy Management
Regulation Energy Management is a market feature for resources within the CAISO BAA that are able to operate as generation or load but have a MWh limit to generate, curtail, or consume energy. Resources using Regulation Energy Management must be dispatchable on a continuous MW basis for at least 15 minutes after issuance of the dispatch instruction. Resources using Regulation Energy Management may only provide regulation in the CAISO Market. A resource using Regulation Energy Management may not provide any additional energy products or ancillary services other than regulation.

CEC /CPUC System Planning
The CEC held a meeting, featuring CAISO and E3 presentations, to examine system modeling efforts being used to inform the CPUC Long Term Procurement Planning process. The CAISO model used four CPUC scenarios: trajectory, environmental, cost, and time-constrained. E3 essentially duplicated the CAISO effort, with some additional backend analysis. Methodology was the same as prior analyses, with minor adjustments for handling solar and wind variability issues. (E.g., large solar farms were no longer represented as point sources, but actually reflected spatial extent and some level of insolation averaging.)

In David Miller's opinion, the results from all four models were nearly identical. All show there is no need for additional resources to manage 33% VER penetration by 2020, and there is almost no difference between the various trajectories, which means there are no technology preferences.

CEC Workshop on Estimating Costs of California Generation Resources
This workshop examined current best practices and lessons from other models for a comprehensive review of how the CEC estimates current and future generation costs. The CEC's IEPR Committee is overseeing this work.

The Southern California Edison presentation attempted to include integration costs, sparking a vigorous debate in which most parties seemed to recognize that conflating integration and generation costs was not appropriate at this level of modeling. If VERs integration costs are included, then the model should also include integration costs of thermal and nuclear resources, e.g., the cost of providing ancillary services such as contingency reserves.

CEC Integrated Energy Policy Report (IEPR) Committee Workshop on Distribution Infrastructure Challenges and Smart Grid Solutions to Advance 12,000 MW of Distributed Generation (DG)
Attendees included representatives from all the IOUs, the CAISO, several munis, EPRI, NREL, EDF, and Nevada Energy. CEC Commissioners Robert Weisenmiller and Carla Peterman presided.

The maximum amount of DG that can be reliably integrated onto a distribution system depends on the visibility of these resources to the system operator, as well as the ability of the operator to manage resources. Several major issues were identified as requirements for increased DG penetration, including interconnection reform, transparency of the interconnection process, access to system data to enable innovation by third-party developers, dynamic pricing (which is a fundamental prerequisite of the smart grid), and safe and reliable two-way communication protocols between the DG and grid operators.

Key considerations in planning for increased DG penetration include voltage regulation issues, bidirectional power flow, and safety issues that could result from islanding. Islanding occurs when DG resources are generating power within an isolated distribution network that is disconnected from the greater distribution grid. Under uncontrolled circumstances, islanding can inadvertently put power onto the grid where none is expected, creating potentially dangerous conditions for grid maintenance operators.

A new inverter protocol, IEEE 1547.8, will provide advanced DG functionality, including volt/VAR control, low voltage ride-through, and enhanced communication protocols.

The microgrid is a key concept for DG planning. Microgrids are small, modern versions of the bulk grid that encompass a building, a building complex, a campus, or an entire community, with power managed by smart controllers. The microgrid represents a self-contained, self-managed, and intelligent local network of generation, load, and storage that interacts with the greater distribution grid in an automated manner, as well as through two-way communication with the distribution and transmission grid operators. This two-way communication gives grid operators a better picture of real-time and forecasted energy production, and also allows them to curtail components or disconnect the entire microgrid if necessary.

Nevada Energy presented results from its studies of increasing DG penetration, and its conclusion that the distribution system is not the factor limiting how much DG can be installed. Its other conclusions include: (1) NV Energy's distribution feeders can accommodate greater amounts of DG when evenly distributed, but less when clustered; (2) for higher DG penetration, the impact on the transmission grid and generation operations must be considered; (3) the presence of utility-scale renewable generation may curtail the amount of DG that can be installed; (4) the reduction in revenues from DG energy production is

much higher than expected benefits to the utility. Thus, new DG installations would result in a subsidy from NV Energy ratepayers to DG owners if current net metering rules were to apply.

The workshop included a "Transforming the Grid – Power to the Customer" presentation by Kurt Yeager of Galvin Electricity Initiative, which argued for transformation of the electricity infrastructure, policies, and business model to align market and utility incentives to accelerate smart grid investments. Yeager pointed out that a smart grid requires looking beyond the regulated monopoly business model. In order to be successful, barriers to retail competition must be removed, along with barriers to non-utility technology investments. The result may significantly increase both consumer and producer benefits.

"Electricity is one of the few sectors where performance and earnings are not directly aligned with the interests of consumers or their satisfaction. Instead, utilities answer primarily to state regulatory agencies, elected officials and federal authorities, operating under numerous rules that precede the New Deal. But like many elements of the U.S. infrastructure, much of the equipment in the electricity grid is near the end of its functional lifespan. We therefore face a choice of reinvesting in a system that served the past, or transforming it in ways that serve the consumers, businesses and society of tomorrow."

Transportation Advocacy

Electrifying Transportation

To implement its December 2010 Strategic Plan, the Plug-in Electric Vehicle Collaborative (PEVC) has now established five workgroups:

1) Deployment Guidelines & Permit Streamlining
2) Communications
3) Coordination of Government Policy
4) Market Expansion
5) Research

The workgroups are developing their work plans, deliverables and budgets for 2011, which will be presented at the PEVC Council's meeting on July 14. CEERT co-chairs Workgroup 1 and is active in Workgroups 3 and 4. We have been assisting staff to ensure that the PEVC's work is coordinated with other efforts to expedite the deployment of plug-in electric vehicles and associated infrastructure in the state.

CEERT helped PEVC staff prepare a statewide proposal — in response to a DOE funding solicitation — on establishing Regional EV Readiness Councils across California. If California is awarded funding, those funds will likely be available by late 2011 or early 2012. And on May 12, the CEC released its request for proposals to fund the establishment of Regional EV Readiness Councils in California. Each CEC grant will be a maximum of $200,000, with $1million in total funding available for these projects.

On June 23, the CPUC was due to consider its Phase II Proposed Decision on policies to overcome barriers to electric vehicle deployment. However, this item was held for consideration at a later meeting.

Low-Carbon Fuel Standard (LCFS)

The LCFS Program Review Advisory Panel that is examining the implementation of the LCFS program for CARB met for a second time on April 26, and reviewed a draft workplan that CARB staff provided. CEERT worked actively with staff on workplan revisions, which the Panel will consider during its June 30 – July 1 meetings.

Low-Emission Vehicle Regulations

The current revisions of California's Low Emission Vehicle regulations are known as LEV III, have separate components for criteria emissions (LEV III-Criteria) and GHGs (LEV III-GHG — an extension of

the groundbreaking Pavley standards), and also contain a supplemental technology-forcing component called the Zero Emissions Vehicle (ZEV) program. Current revisions to the ZEV program are significant.

In September, CARB plans to formally release the proposed revisions to its suite of passenger vehicle regulations (LEV III-Criteria, LEV III-GHG and ZEV II) simultaneously with the release of a Notice of Proposed Rulemaking for the revisions to federal standards under the US-EPA and NHTSA. CARB's rulemaking should be completed by November or December, and the federal rulemaking by July 2012, assuming there are no delays.

CEERT continues to serve as technical lead for state and national NGOs on criteria emissions performance standards that CARB is developing for its LEV revisions, which could form the basis for the next generation of federal Tier III emissions standards.

CEERT is working with CARB ZEV staff, the auto manufacturers, and the California Fuel Cell Partnership (CaFCP) to develop provisions under the revised ZEV regulations for the deployment of hydrogen fueling infrastructure. CEERT will continue to work with CEC staff on coordinating future AB 118 funding with CARB's revised ZEV regulations to facilitate the sustained deployment of hydrogen fueling stations through 2015 – 2016 and beyond.

CARB Showcase on Hydrogen and Fuel Cells

On June 23, in preparation for its upcoming regulatory activities this fall, CARB staff organized an informational update for the Board on the status of fuel cell technology in both stationary and mobile applications. The Showcase involved a series of panels featuring presentations on the opportunities and challenges that face fuel cell technology in California.

During the opening panel, CEERT's John Shears gave a presentation on stationary and mobile fuel cells. His talk highlighted the potential for fuel cell deployment under the Governor's Localized Renewable Energy Generation Initiative, and served to introduce the rest of the panel sessions. On the second panel, Katrina Fritz-Intwala of CEERT affiliate UTC spoke on behalf of the Stationary Fuel Collaborative, and CEERT affiliate Fuel Cell Energy's Fountain Valley project was featured in Scott Samuelsen's presentation during the closing panel. Dr. Samuelsen is the Director of the National Fuel Cell Research Center.

Overall, the Board was generally supportive of fuel cells, and quite interested in understanding the hurdles and opportunities for deploying the technology. Prior to CARB staff's organizing the Showcase, CEERT had approached both the California Stationary Fuel Collaborative and the California Fuel Cell Partnership about the possibility developing an integrated vision and strategy for the deployment of fuel cells in California. Both organizations continue to express support for working together on such an effort.

AB 118 Alternative and Renewable Fuel and Vehicle Technology Program

The CEC's February 18 draft of the 2011 – 2012 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program had proposed only $3 million for transit-related hydrogen fueling infrastructure. The car companies and the CaFCP requested that an additional $10 million for FCV fueling infrastructure be added to the $3 million. Hydrogen fuel providers also recommended additional infrastructure funding.

CEERT worked with CEC staff, the auto companies, and the CaFCP to help resolve differences over the level of funding needed in the Investment Plan to support the market launch of fuel cell vehicles (FCVs) in 2014. Subsequently, CEC staff increased the proposed figure to $8 million in their May 9 Investment Plan draft, with all of the funding likely going to support FCVs. A final draft of the investment plan will be released on June 29 for consideration at the CEC's July 13 business meeting.

The sustained long-term deployment of hydrogen fueling stations is necessary for meeting CARB's ZEV program goals, and the state's overall air-quality and climate targets.

John White's Recent Speaking Engagements

On April 11, CEERT Executive Director V. John White took part in a meeting between Secretary of the Interior Ken Salazar and solar industry representatives in Washington, DC.

On April 15, John was a panelist on "Supporting Roles: The Complementary Measures of AB 32" at Climate Action Reserve's Navigating the American Carbon World event in Los Angeles.

On April 20, John participated in an "Energy Issues Overview" at the South Coast Air Quality Management District's Zero-Emission Transportation Technology Forum in Diamond Bar.

On May 22 – 24, John attended numerous meetings at the American Wind Energy Association's Annual Conference in Anaheim.

On June 9, John spoke at a California Public Utility Counsel Minimum Continuing Legal Education panel on "Addressing Energy, Water, and Communications Issues Across the Branches of Government" at the CPUC in San Francisco.

On June 17, John was a panelist on "Regional Regulatory, RPS, and West-Wide Markets" at the 2011 Wind Energy Conference in Garden Grove.