# CENTER FOR ENERGY EFFICIENCY AND RENEWABLE TECHNOLOGIES QUARTERLY STAFF REPORT MAY – AUGUST 2014

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

#### 2030 Low-Carbon Grid Study

CEERT's Jim Caldwell and Ali Ehlen are continuing to direct *the California 2030 Low-Carbon Grid Study*. Phase I results from the NREL modeling demonstrate that the California electric sector can reduce its greenhouse-gas (GHG) emissions in 2030 by more than 50% below 2012 levels with minimal rate impact, minimal renewable energy curtailment, and without compromising grid reliability.

# Advocacy at the California Independent System Operator (CAISO)

CEERT continued to advocate that the California Independent System Operator's (CAISO's) proposed *Flexible Resource Adequacy Criteria/Must-Offer Obligation (FRACMOO) initiative* must not be used to favor inflexible fossil generation over renewables in the CAISO real-time dispatch market.

CEERT urged the CAISO to consider effective *transmission alternatives*, to clarify the status of *Imperial Valley deliverability*, and to overhaul its outdated *Maximum Import Capability allocation methodology*.

#### Advocacy at the California Air Resources Board (CARB)

CARB adopted the 2014 Update to the AB 32 Scoping Plan, which included strengthened provisions on short-lived climate pollutants, as CEERT had advocated, and a commitment to develop an implementation plan for such provisions by 2016.

## Advocacy at the California Energy Commission (CEC)

CEERT participated in CEC workshops on "Southern California Electricity Reliability" and "Integrating Environmental Information in Renewable Energy Planning Processes," both of which will help shape the CEC's 2014 Integrated Energy Policy Report (IEPR) and hopefully lead to minimizing the amount of new fossil generation that will replace outdated and retiring coastal power plants.

#### **Advocacy at the California Public Utilities Commission (CPUC)**

An Administrative Law Judge's Ruling adopted a Revised *Renewable Net Short (RNS) Methodology* responsive to CEERT's longstanding advocacy that the Renewable Portfolio Standard (RPS) law had been clarified by statute to remove any doubt that the 33% RPS represented a floor and not a ceiling on renewables procurement.

CEERT filed Comments asking the CPUC to: (1) require *implementation of AB 327 provisions* in the investor-owned utilities' (IOUs') 2014 RPS Procurement Plans; (2) confirm there is *no need assessment or cap* on renewable procurement; (3) cease isolating *the RPS* from other planning and policy initiatives that impact resource portfolios; (4) direct the IOUs to implement the CPUC's *clarified Loading Order*; (5) ensure that *costs or development requirements* for renewables are equally applicable to gas-fired generation; (6) revamp the Least-Cost, Best-Fit (*LCBF*) evaluation criteria to "Best-Fit, Least-Cost"; and (7) ensure procurement of *Imperial Valley resources* or modify the LCBF to appropriately value these resources.

CEERT also filed Comments that an *integration cost adder* should be applied to gas-fired generation as well as renewable generation; should be developed and evaluated on a system-wide, generation-portfolio basis; and should not be categorized by renewable fuel type.

CEERT and our allies opposed San Diego Gas and Electric Company's (SDG&E's) *LTPP Track 4* procurement plans, which failed to follow the D.14-03-004 decision and focused almost entirely on meeting the utility's local need with gas-fired generation. We and other parties filed Petitions for Modification and met with all Commissioners' offices.

The 2014 Long-Term Procurement Planning (LTPP) proceeding will cover system reliability needs, operational flexibility needs, procurement rules, and bundled procurement. CEERT will review the bundled procurement plans that the IOUs will file in November and consider renewing our call for renewable generation to be among the pre-approved products.

A Final Decision in the *Resource Adequacy (RA) proceeding* was responsive to CEERT's Comments in confirming the adopted flexible-capacity framework was "interim," and stating the CAISO and CPUC "will...analyze flexible procurement and dispatch data to inform future flexible procurement policy."

CEERT pressed for evidentiary hearings to resolve new concepts being explored in the CPUC-CAISO *Joint Reliability Plan* rulemaking. Of key importance is how resolution of long-term reliability planning assessment issues may be incorporated into the annual RA proceeding and the LTPP rulemakings.

A large number of parties to the proceeding on *Demand Response (DR) Programs* reached a Settlement Agreement on DR goals, valuation, program categorization, CAISO market integration costs, a DR Auction Mechanism, utility roles, future procurement, and the budget cycle.

CEERT is a party to or is tracking CPUC proceedings on *distributed energy resources*, *energy storage*, *energy efficiency*, and *electric vehicles*.

# The Desert Renewable Energy Conservation Plan (DRECP) and Solar Advocacy CEERT continues to engage in the *DRECP* process.

The *California Desert and Renewable Energy Working Group* began to develop papers on key issues, including a vision and values statement, an action plan on durability, a letter and policy statement in response to the Department of Interior's mitigation report, and recommendations for permit predictability.

The Governor's Office of Planning and Research is working with CEERT and other parties on a plan for solar development on retired San Joaquin Valley farmland.

#### **Southern California Activities**

Imperial County leaders are not happy about a recent *solar property tax credit extension*, which they believe will deprive the county of millions of dollars in revenue.

A procurement measure would require the IOUs to obtain 500 megawatts (MW) from geothermal plants in the next 10 years, and would restart *geothermal development at the Salton Sea* and advance *sea restoration efforts*.

#### **Clean Transportation Advocacy**

CEERT will be part of a review of the *Low-Carbon Fuel Standard*, which CARB staff are revising. We helped organize a conference to ensure sufficient *cellulosic fuels* will be available for the LCFS program.

CEERT is tracking a CPUC proceeding and a proposed SDG&E pilot on vehicle-grid integration, and helped persuade the automobile manufacturers to become parties to the CPUC proceeding.

Fifty-four *hydrogen fueling stations* exist or are in development in California — significant progress toward the state's goal of a 100-station network to support the commercialization of *fuel-cell vehicles*.

CEERT helped develop the *AB 118/AB 8 Program's 2014 Investment Plan*, which is proposing \$20 million for EVs and charging infrastructure and \$20 million for hydrogen fueling infrastructure.

#### The Low-Carbon Grid

# California 2030 Low-Carbon Grid Study

CEERT's Jim Caldwell and Ali Ehlen are continuing to staff the California 2030 Low-Carbon Grid Study (LCGS), an in-depth analysis with a 2030 greenhouse gas (GHG) emissions target of 50% below 2012 levels as a benchmark for moving toward the state's 2050 emissions reduction goal.

A Steering Committee of 26 companies and trade associations and two foundations governs the study and provides its funding. The Steering Committee represents all renewable technologies, gas-fired generation, energy storage, energy efficiency, and demand response, both within California and throughout the Western grid. CEERT is the LCGS's fiscal sponsor.

The study has two phases. The National Renewable Energy Laboratory is performing the modeling using the PLEXOS production cost model, and Phase II work will incorporate additional analysis from GE Energy Consulting and JBS Energy, as well as peer review by an independent Technical Review Committee.

Phase I results were made public the week of August 25 and can be found at <u>LowCarbonGrid2030.org</u>. They state that, with a portfolio developed on the basis of a carbon focus, flexible load, regional cooperation, efficient use of natural gas, and diverse renewable generation portfolio, the California electric sector can reduce GHG emissions by more than 50% below 2012 levels in 2030:

- With minimal rate impact;
- Without compromising reliability;
- With minimal curtailment of renewable energy; and
- With a stable gas fleet that is dispatched with minimum cycling.

Jim Caldwell, Ali Ehlen, and Steering Committee members are presenting these results to key decision-makers and agency staffers in Sacramento and San Francisco. Phase II of this work has begun and a full report is anticipated in early 2015.

#### Work at the California Independent System Operator (CAISO)

# Flexible Resource Adequacy Criteria/Must Offer Obligation (FRACMOO) Initiative

Over the past few months CEERT has continued to advocate that the CAISO's FRACMOO initiative must allow for resources that cannot or will not submit to a Must-Offer Obligation in the CAISO real-time dispatch market to contribute their flexibility to balancing the grid — resources such as demand response, imports, and exports that cannot be subject to 5-minute dispatch instructions from the CAISO.

Otherwise, we need to ensure that FRACMOO results in limited procurement of resources, and that the CPUC will create other options and strategies for allowing DR and other kinds of price-sensitive demand to meet system flexibility needs. In addition, we need to work with utilities to enable them to reduce system flexibility needs voluntarily, by collaborating with renewable generators to minimize the impact of variable resources that in part create the need for flexibility. We are talking with the utilities about performance-based incentives to develop combinations of resources and customer responses that can collectively meet system flexibility needs while minimizing fossil-fired power and GHG emissions.

<u>CAISO Transmission Planning and Deliverability of Imperial Irrigation District (IID) Resources</u>
On July 28, CEERT submitted Comments on a CAISO Discussion Paper on Imperial County Transmission, and noted that the issues under consideration have far-reaching consequences for all of California.

We argued that any CAISO recommendation for procurement of new capacity to serve Southern California load should be accompanied by proposed transmission alternatives that can satisfy that need through deliverable imports into the load pocket, and that two specific transmission projects should be considered:

a more expensive AC/DC:DC/AC flow controller between Imperial substation and Mexico's CFE system that would add 400 megawatts (MW) of deliverability, and the non-"enhanced" version of the Talega-Escondido/Valley-Serrano project, which would provide just 500 MW of deliverability but be relatively easy to site.

We also asked for clarification of the status of Imperial Irrigation District (IID) deliverability under the CAISO's current Maximum Import Capability (MIC) allocation methodology. While the CAISO has stated several times that the MIC allocation from IID will be 1,000 MW when all planned and approved transmission upgrade projects are placed into service, CEERT believes CPUC decision D.12-11-016 obligates the CAISO to forecast at least 1,400 MW of forward-looking MIC from the IID branch group.

The MIC process by which the CAISO allocates deliverability of imports into California relies on historic flow patterns to set priorities for which potential imports are eligible to receive capacity payments from the state's Resource Adequacy (RA) program. These historic flows were principally coal imports from Arizona, Nevada, and New Mexico. However, even as these coal imports are being phased out, their deliverability allocation remains available to natural gas resources from the same regions.

The result is that new renewable imports from the Imperial Valley are denied deliverability, and are thus are ineligible to receive RA payments even though they clearly provide capacity to the California grid. (Since the IID is not part of the CAISO Balancing Authority, resources from this region are considered "imports," as if they were located out-of-state.)

In addition, new renewable resources from Riverside and San Bernardino counties are required to finance expensive transmission upgrades to gain deliverability so that the historic import deliverability of out-of-state fossil resources can be maintained. These import allocations are valuable assets held by importing utilities like Southern California Edison (SCE) and San Diego Gas and Electric Company (SDG&E), which procure resources in a manner that ensures they retain their value. However, this makes no logical economic or environmental policy sense.

The issue will only grow in importance as we attempt to reduce GHG emissions by phasing out *all* fossil imports. As increasing amounts of solar energy come online, this policy is a significant cause of California renewables being curtailed to allow out-of-state fossil energy to be imported. Over 30,000 gigawatthours of in-state renewable energy has been curtailed this year alone in the same hours that out-of-state fossil imports were over 5,000 MW.

In our July 28 Comments, CEERT called for a concerted stakeholder effort to completely overhaul the outdated MIC import deliverability methodology. The CAISO has yet to respond to our filing. CEERT, IID, other Southern California municipal utilities, and renewable developers with interests in Imperial County are forming a political and technical coalition to force this issue within this year's CAISO Transmission Planning Process, and possibly other policy arenas.

#### Climate Advocacy at the California Air Resources Board (CARB)

In June, CARB adopted the 2014 Update to the AB 32 Scoping Plan. CEERT had advocated for improvements in the short-lived climate pollutants section, and the final draft contained significantly more robust provisions on that subject, as well as a commitment to develop an implementation plan by 2016.

However, the Update did not include an analysis of projected GHG reductions from actions proposed in the plan, and many of the action items were not as detailed about implementation as they might have been. While the plan cited the need for California to enact more ambitious measures to achieve the reductions that the Intergovernmental Panel on Climate Change has recommended, no specific target for GHG

reductions beyond 2020 was proposed. The Governor's Office has suggested that this will come in early 2015 in the form of a new green energy standard.

Advocacy at the California Energy Commission (CEC): The 2014 Integrated Energy Policy Report

On August 5 the CEC held a workshop on Integrating Environmental Information in Renewable Energy Planning Processes as part of the 2014 Integrated Energy Policy Report (IEPR) Update. There was vigorous discussion about how various state agencies use environmental information in the planning and approval processes for siting renewable energy projects and transmission. Representatives of the CEC, CPUC, CAISO, and California Bureau of Land Management gave presentations on their current processes, and local government representatives offered their views. CEERT's John White participated in a final roundtable discussion that aired government, utility, developer, and environmental perspectives.

On August 20 the CEC held an IEPR Update workshop on Southern California Electricity Reliability. State government representatives, SCE, SDG&E, and local air pollution control districts made presentations and held discussions on preferred resource planning and development, power purchase agreements, generation permitting, transmission system alternatives, contingency mitigation planning, environmental agency considerations for air quality, and mitigation of once-through-cooling. CEC Commissioners, CPUC Commissioners, and the CARB Chair participated.

#### Advocacy at the California Public Utilities Commission (CPUC)

Renewable Portfolio Standard (RPS) Program (R.11-05-005 (RPS))

Despite indications that the CPUC would issue decisions in 2014 on Procurement Expenditure Limitations, RPS procurement process improvements, revisions to the RPS calculator, and Least-Cost/Best-Fit (LCBF) reform, as of August 17 no such decisions have been issued. More disappointingly, the CPUC has not set a schedule for implementation of AB 327, which amended PU Code Section 399.15(b)(3) to state that the "commission may ["may" replaces "shall not"] require the procurement of eligible renewable energy resources in excess" of the 33% RPS target. Language in this section referring to "voluntary" procurement by obligated retail sellers was also eliminated as seemingly moot.

In March CEERT filed opening and reply comments on CPUC Staff's proposed revisions to the Renewable Net Short (RNS) Methodology, pointing out the impropriety of the CPUC continuing to impose a "need" ceiling or limit on RPS procurement following passage of AB 327. We were also disappointed in the March 26 Assigned Commissioner's Ruling (ACR), which, in identifying the issues and schedule for the 2014 RPS Procurement Plans, did not consider AB 327 or include much-needed reform of the investor-owned utilities' (IOUs') LCBF methodologies. However, the ACR did identify certain topics for party comments, including capacity valuation, project development requirements, and a renewable integration adder, with detailed questions posed on each.

On May 21, an ALJ's Ruling was issued that adopted a Revised RNS Methodology and required the IOUs to use this Revised RNS in their 2014 RPS Procurement Plan filings. Notably, the Revised RNS Methodology did, for the first time, appear to be responsive to CEERT's longstanding position that the RPS law had changed and a ceiling on RPS procurement no longer exists. Thus, in a section entitled "Additional Mandated RPS Procurement," the Revised RNS Methodology states that the RNS has now been "designed with the flexibility to account for new RPS scenarios," including those that result from implementation of AB 327, which allows the CPUC to require a retail seller to procure RPS resources in excess of its procurement quantity requirements or mandates arising from the Commission's Long-Term Procurement Planning (LTPP) proceedings.

This recognition of current law, as CEERT has advocated, is a significant change. Unfortunately, however, the March 26 ACR, as noted above, did not include such recognition or require this change to be reflected in the 2014 RPS Procurement Plans themselves. Not surprisingly, then, the IOUs' RPS Pro-

curement Plans filed on June 6 did not reference AB 327 or reflect any impact on renewables procurement resulting from that law, the above-quoted statements from the Revised RNS Methodology, or the procurement authorizations from the LTPP, separate from and in addition to any RPS target.

Following our review of the IOU's 2014 RPS Procurement Plans in detail, CEERT provided a summary of the IOUs' positions on all issues to our affiliates, and held a conference call on June 16 to discuss those issues and responses to additional questions in the March 26 ACR (e.g., the application of a Renewable Integration Cost Adder (RICA)).

CEERT's Opening Comments, filed on July 2, focused on correcting failures in both the March 26 ACR and the RPS Procurement Plans. We asked the CPUC to (1) expressly require consideration and implementation of AB 327 provisions in the IOUs' 2014 RPS Procurement Plans; (2) confirm that there is no need assessment or cap on procurement of renewable generation; (3) cease isolating the RPS proceeding from other planning and policy initiatives that impact all resource portfolios; (4) direct the IOUs to include express recognition of the CPUC's clarified Loading Order and detail this policy's impact on procurement; (5) cure the CPUC's longstanding failure to ensure that costs or development requirements imposed on renewable generation are equally applicable to gas-fired generation, especially to avoid overprocurement of gas-fired power at odds with GHG reduction policies; (6) correct the Revised RNS Methodology to make clear that, consistent with AB 327 and LTPP, renewables procurement can be authorized above a 33% RPS target; (7) undertake a long-delayed overhaul of the LCBF evaluation criteria to reflect that it is really "Best Fit, Least Cost"; and (8) either ensure procurement of resources from the Imperial Valley or finally modify the LCBF to appropriately value these resources in the current energy market.

In response to the March 26 ACR questions, CEERT's July 2 Comments concluded that the Resource Adequacy (RA) capacity of a new RPS-eligible facility is always valuable whether the system has need for new capacity or not; and that, in order to avoid over-procurement of gas-fired generation, the CPUC must avoid unnecessarily imposing greater burdens on renewable generation than on fossil-fired generation. On the RICA issue, we held that an integration cost adder (ICA) should not be applied exclusively to renewable generation, but should extend to gas-fired generation as well, and thus should be developed and evaluated on a system-wide, generation-portfolio basis; in addition, there should not be any fixed ICA by renewable fuel type, and any ICA should be developed through a public stakeholder process.

On July 9, we provided a summary of all parties' Comments (including the IOUs' Comments on the March 26 ACR questions) to CEERT affiliates. Multiple parties in addition to CEERT had filed Comments objecting to the CPUC's ongoing failure to recognize and implement AB 327 and to continue to impose, in any way, a need authorization or limitation on renewables procurement.

Just prior to the due date for Reply Comments, CEERT received an e-mail from Energy Division staff (sent only to parties that weighed in on the RICA questions) posing further questions on that issue to be addressed in Reply Comments. CEERT quickly requested that Staff and the ALJ circulate these questions to all parties on the Service List, not just a restricted few, to ensure full notice and input on the RICA issue. The Staff and ALJ did comply and undertook that broader circulation.

On July 30, CEERT filed Reply Comments, informed by our affiliates' input, highlighting the number of parties that had joined us in urging that the CPUC immediately implement AB 327, require IOUs to purchase renewable energy in excess of 33%, and adopt the policy and contractual requirements for doing so. The Reply Comments of multiple parties restated support for our position, with the only notable pushback coming from the utilities that claimed consideration of AB 327's implementation was premature or should be delayed until strategies for deploying higher levels of renewables were developed. These arguments ignore the impact of the Loading Order and LTPP decisions, which make clear there is no limit on procurement of a preferred resource like renewable energy to meet LTPP authorizations.

A Proposed Decision on the 2014 RPS Procurement Plans is targeted for the fourth quarter of 2014. Once issued, authorized RPS solicitations will follow.

# Long-Term Procurement Planning (LTPP)

#### 2012 LTPP (R.12-03-014)

The CPUC's LTPP rulemakings have been the focus of significant CEERT attention, especially to increase reliance on Loading Order preferred resources (energy efficiency, demand response, and renewable generation) to meet the IOUs' long-term system and local energy needs. CEERT's advocacy met with great success in D.13-02-015 in Track 1 of this rulemaking, which for the first time relied on forecasts of preferred resources to reduce residual need, and also required a specific amount of these resources to be procured to meet SCE's local capacity requirements.

More recently, the CPUC issued D.14-03-004 in Track 4, which closed the 2012 LTPP, authorized SCE and SDG&E to meet identified need through specific quantities of preferred resources, and called for other identified need (600 MW, in the case of SDG&E) to be the subject of an All-Source Request For Offers (RFO), which would include an opportunity for preferred resources to bid. The Final Decision also revised the PD's "we wish to encourage SDG&E to pursue its own Living Pilot," to "we strongly encourage SDG&E to pursue its own Living Pilot."

CEERT appreciates the CPUC's commitment to preferred resources, and in particular Commissioner Florio's consideration of our advocacy that has shaped the decisions reached in Track 1 and Track 4, especially the inclusion of preferred resources in the procurement authorizations. Thus it was very disappointing to eventually learn that the process and content of SDG&E Track 4 procurement plans submitted pursuant to D.14-03-004 fell far short of both directions and expectations stemming from that decision.

While CEERT had strongly urged a public process for the review of SDG&E's Track 4 plans, D.14-03-004 allowed SDG&E (as D.13-02-015 had allowed SCE in Track 1) to submit those plans only to Energy Division for review and approval. SDG&E submitted its plans to Energy Division on May 1. After repeated public records requests, the plans were finally released to Sierra Club California in June. Subsequently, Sierra Club asked CEERT to work with it and like-minded organizations such as Natural Resources Defense Council (NRDC), Environmental Defense Fund (EDF), and California Environmental Justice Alliance (CEJA) to have these plans served publicly for comment, since, except for a limited preferred-resource procurement, they were focused almost entirely on meeting SDG&E local need with gas-fired generation.

After informal appeals to Energy Division did not result in any immediate response or process, on June 12 Sierra Club and CEJA jointly filed a Petition for Modification (PFM) of D.14-03-004 to institute such a process. On June 23, CEERT and NRDC responded in support of this request, and jointly filed another PFM (also joined by EDF and Clean Coalition) asking that SDG&E's plans be filed by a Tier 3 Advice Letter to permit CPUC review and approval by resolution, as well as public comment.

On June 17, unexpectedly, the Energy Division finally sent SDG&E's Track 4 procurement plans to the LTPP service list and offered parties an opportunity to submit informal comments by June 24. CEERT submitted such informal comments, as did many other parties, continuing to object to SDG&E's Track 4 plans failing to offer an opportunity through an all-source bid for preferred resources to meet its Track 4 need, instead of simply filling that need through a contract with a gas-fired generating plant in Carlsbad.

On July 15, a Proposed Decision (PD) was issued denying the PFMs. The PD claims that due process rights of parties are protected by the informal comment process that Energy Division allowed (after the fact), and the ability of parties to weigh in on contracts once they are filed for approval. Of even greater

concern, on July 18 CEERT received a letter from Energy Division indicating that it had, in camera, approved "modified" SDG&E procurement plans. Neither CEERT nor any of the other parties that submitted informal comments on those plans were provided copies of the modified plans at that time.

Instead, on July 21, SDG&E filed a new application (A.14-07-009) seeking approval of a 20-year power purchase agreement with Carlsbad Energy Center for 600 MW of gas-fired generation. While cosmetic references were made in that application to SDG&E potentially holding an all-source RFO, the December timeline for approval of the application does not permit an RFO to be held first. Further, the Independent Evaluator's report included in SDG&E's testimony specifically expressed concerns that this 600 MW procurement had not been subject to any "market test," and no consideration was given to incremental or phased procurement to allow other resources to compete to meet that need.

Beginning on August 4, CEERT joined with NRDC, Sierra Club, CEJA, and Vote Solar, by formally filed comments and meetings with all Commissioners' offices, to strongly oppose the PD denying the PFMs and to strongly oppose SDG&E's complete failure, as represented by its modified plan and A.14-07-009, to follow the requirements of D.14-03-004. CEERT and our allies met with Commissioners Peevey, Florio, Peterman, and Picker, and with Commissioner Sandoval's advisor.

The decision to reject the Joint PFMs was signed out as D.14-08-008 on the Consent Agenda (with no discussion) at the CPUC's Business Meeting of August 14. While the outcome of our Joint PFMs and meetings was disappointing in terms of the CPUC's actual commitment to the Loading Order and preferred resources, all of us learned much from Commissioners Florio and Peevey about the politics of the approval of SDG&E's Carlsbad procurement and our own challenge to ensure that, at the least, the 200 MW preferred resources carve-out for SDG&E (along with similar SCE procurement) will actually happen. This call-to-action on the preferred resources solicitation will have particular importance when SCE files an application for approval of contracts signed pursuant to its Track 1 (and/or Track 4) procurement authorizations, which is expected in the fall.

CEERT did appreciate the time that Commissioners Florio and Peevey spent with us (one hour each) and their own concerns with ensuring that utility management and CPUC staff are both responsive to the need for more clean energy resources. These events have also illustrated the importance of collaborating with like-minded parties. While this battle may have been lost, we are all committed to working individually and collectively to ensure increased reliance on preferred resources. These circumstances also underscored the importance of attempting settlement agreements with other parties in significant proceedings as a means to shape meaningful outcomes at the CPUC.

#### 2014 LTPP (R.13-12-010)

The 2014 LTPP was launched with a Prehearing Conference held on February 25. Technical modeling is to follow Joint Planning Assumptions and Scenarios first proposed in December by CPUC Energy Division staff in coordination with CAISO and CEC staff. Among the revisions made by a February 27 ACR was a change in the 40%-by-2030 RPS assumption to "achieve a 40% RPS *by 2024*," in line with CEERT's advocacy for a more robust RPS scenario.

CEERT made outreach to CPUC staff in the Assigned Commissioner's office and Energy Division to discuss the 2030 Low-Carbon Grid Study that we are staffing, the results of which should be considered in the development of operational flexibility modeling.

After some delay, on May 6, a Scoping Memo and Ruling of Assigned Commissioner Picker and Assigned ALJ Gamson was issued in the 2014 LTPP. The Scoping Memo established a Phase 1 on System Reliability Needs and a Phase 2 on Procurement Rules and Bundled Procurement.

The technical modeling is to rely on the assumptions and scenarios adopted by the February 27 ACR, and could be deterministic, stochastic, or a combination of the two. The Scoping Memo recognized that stochastic modeling might provide improved results, but is still being developed and could be more complex.

In a June 2 ruling, ALJ Gamson underscored that the modeling to be undertaken in Phase 1a was primarily to evaluate system need, including the need for additional resources to meet operational flexibility requirements or to meet reliability through 2024, and the characteristics any additional resources should have, including factors like expected GHG emissions. The June 2 Ruling added an opportunity for parties to submit testimony on a review of the models, with alternative scenarios or sensitivities.

On August 13, CAISO, SCE, and ORA submitted their initial modeling testimony. Testimony from parties not submitting models is due on September 24, with all reply testimony to be served on October 22; additional testimony is due from CAISO and SCE on November 13, with reply testimony to be served on December 11. Evidentiary hearings must be requested by mid-December, and, depending on whether hearings are held, a decision in Phase 1a will be issued sometime in the first quarter of 2015.

Because of the complexity of these issues and the significance for future resource procurement to meet system needs while achieving GHG emissions reduction targets, CEERT is working collaboratively with like-minded stakeholders in developing our positions. To that end, a first meeting of a broad group of environmental organizations, including CEERT, is scheduled for late August.

On July 29, ALJ Gamson issued a ruling calling for Comments on specific questions posed on IOU Combined Heat and Power (CHP) procurement to meet GHG emission reduction targets consistent with an existing CHP Settlement Agreement. Opening and Reply Comments are due September 17 and October 8.

We expect the IOUs to be filing LTPP bundled procurement plans on November 3. CEERT will review these plans carefully, and consider renewing our call for renewable generation to be among the preapproved products. To date, those pre-approved products have excluded preferred resources.

## Resource Adequacy and the Joint Reliability Plan

The issues of resource adequacy (RA) and system reliability remain primary CPUC and CAISO considerations. These issues are the subject of two CPUC rulemakings: Resource Adequacy (R.11-10-023), assigned to Commissioner Florio, and Joint Reliability Plan (R.14-02-001), assigned to Commissioner Peterman. ALJ Gamson is assigned to both, but is joined in R.14-02-001 by ALJ Collette Kersten.

#### Resource Adequacy (R.11-10-023)

This RA proceeding, from the fall of 2013 through the present, has continued to focus on CPUC staff and CAISO proposals and reports about "flexible capacity" needs and procurement, as well as methodologies for calculating the flexible and qualifying capacity (QC) for storage and preferred resources such as demand response and wind and solar generation.

On May 27, the CPUC issued its annual RA Proposed Decision, adopting 2015 local capacity procurement and flexible capacity obligations for the IOUs. The PD also adopted an interim flexible capacity framework for 2015 through 2017, as well as QC and Effective Flexible Capacity (EFC) determinations for energy storage and supply-side demand response resources.

On June 16, CEERT filed Comments on the PD, asking that it be modified to clearly label as "interim" any adopted flexible-capacity mechanisms, given a lack of real-world experience with such concepts; and to require reporting of flexible-capacity procurement results and use of procured resources in the CAISO dispatch in order to facilitate program analysis and adjustment post-2016.

On June 26, the CPUC issued a Final Decision (D.14-06-050) in the RA proceeding. This decision reflected few changes from the PD except for two notable revisions, both responsive to CEERT's Comments, confirming the adopted flexible-capacity framework was "interim," and stating the CPUC Energy Division and CAISO "will work together to analyze flexible procurement and dispatch data to inform future flexible procurement policy." CEERT believes that both of these changes are very significant, given that no real-world experience exists for any of the flexibility concepts or mechanisms being considered.

#### Joint Reliability Plan (R.14-02-001)

As outlined in our previous Quarterly Report, on February 5 the CPUC issued rulemaking R.14-02-001 to address a "Joint Reliability Plan" entered with CAISO. In response, CEERT filed comments identifying the need for evidentiary hearings to resolve the new concepts being explored in this rulemaking in a coordinated, transparent way. We participated in the Prehearing Conference held on April 17, especially to ensure that these complex, first-time issues will be fully and publicly vetted. Of key importance is how resolution of long-term reliability planning assessment issues may be incorporated into both the current annual RA proceeding and the LTPP rulemakings.

Workshops were held on May 2 and May 13 on questions posed in the original rulemaking on the issue of Multi-Year RA Requirements. CEERT participated in both Workshops, and CEERT's Senior Consultant Jim Caldwell served by invitation as a presenter at the May 2 Workshop on the need for a proposed new policy and the costs and benefits of such a policy.

On May 20, Assigned Commissioner Peterman issued a Scoping Ruling that identified three tracks for the JRP Rulemaking: Track 1 on Multi-Year RA Requirements; Track 2 on Development of a Unified Long-Term Reliability Planning Assessment with the CAISO and CEC; and Track 3 on Consideration of CAISO Development of a Backstop Procurement Tariff to the RA Program.

# Demand Response Programs (R.13-09-011)

On April 15, the CPUC issued a Proposed Decision Approving DR Program Improvements and 2015-2016 Bridge Funding Budget. The PD approves certain programs and activities for PG&E, SDG&E, and SCE's DR programs during 2015 and 2016 and authorizes specific budgets; it also makes clear that no determination of cost recovery changes will be made in this decision.

The CPUC set Evidentiary Hearings for June 9-13, but most of the days scheduled for hearings evolved into workshops. CEERT participated in those workshops, which covered a range of DR topics, including a DR Auction Mechanism, CAISO market integration costs, DR goals, cost recovery, and must-offer obligations. Following the workshops, settlement negotiations took place between several of the parties.

On June 23, ALJ Hymes issued a Ruling Requesting Comments on Proposed Revisions to the Cost-Effectiveness Protocols. On July 23, a Settlement Conference was held. On July 29, the ALJ held a Prehearing Conference to discuss the Settlement Agreement and the June 23 Cost-Effectiveness Protocol Ruling. On August 4, the settling parties filed a Motion to Adopt Settlement Agreement on Phase 3 Issues. The settling parties included DR companies, the IOUs, the CAISO, and environmental and consumer advocates.

The Settlement Agreement has five areas: DR goals; Valuation and Program Categorization; DR Auction Mechanism (DRAM), Utility Roles, and Future Procurement; CAISO Market Integration Costs; and Budget Cycle. The settling parties agreed to the following:

#### DR Goals.

- An interim goal of event-based DR programs covering 5% of each IOU's peak demand by 2020;
- The interim goal will be replaced by a new firm goal for cost-effective DR;

- This firm DR goal will be based on a DR potential study which will be undertaken and completed with active stakeholder participation; and
- All types of DR will count toward the firm DR goal.

Valuation and Program Categorization and CAISO Market Integration Costs.

- The current system and local RA valuation for all existing IOU DR programs should be retained through 2019;
- Load-modifying resource valuation after 2019 will be addressed by a load-modifying resource DR valuation working group;
- After 2019, only supply resource DR that directly meets reliability or CAISO operational needs will be eligible to receive RA adequacy credit;
- Barriers to integration are to be addressed through a supply resource DR integration working group;
- Improved CAISO integration of load-modifying resource DR will be addressed in a load-modifying resource operations working group; and
- Charters are included for the supply resources DR working group, the load-modifying resources DR valuation working group, and the load-modifying resource operations working group. These charters provide purposes, principles, and other details about the working groups.

#### DRAM, Utility Roles, and Future Procurement.

- Convene working groups and/or workshops to develop and submit for CPUC approval the design, protocols, and standard-offer contracts for a DRAM pilot;
- Hold an initial DRAM pilot auction with minimum quantities specific to each IOU to be conducted in 2015 for 2016 delivery for supply resource DR providing system RA;
- Hold a further DRAM pilot auction to be conducted in 2016 for delivery beginning in 2017, and potentially beyond, for supply resources DR providing system, local, and flexible RA, in minimum quantities specific to each IOU and subject to other agreed-upon approaches impacting auction bidding and cost recovery;
- Parties will brief whether the DRAM should be a preferred means of procuring supply resource DR and if so, how; and
- In November 2015 applications, the IOUs will submit funding and program redesign for load modifying resources or new proposals for supply resources and load modifying resource DR programs.

#### Budget Cycle.

- The CPUC should approve another three-year program cycle, 2017 2019, with a mid-cycle review of the utility DR program activities with the potential for proposed revision based on party input; and
- Initiation of a process in April 2015 to develop rules for a potential extended DR budget cycle coordinated with Electric Rule 24 and other key CPUC and CAISO proceedings and stakeholder processes.

On August 7, the ALJ issued a Ruling addressing and providing revisions to the Workshop Report. On August 12, CPUC Staff requested additional changes to the Workshop Report. On August 11, the ALJ held a Status Conference at which the settling parties provided an overview of the Settlement Agreement and responded to questions posed by the ALJ. CEERT plans to file a Reply Brief on the issue of back-up generators.

#### Other CPUC Rulemakings:

CEERT has had a limited budget to actively participate in other CPUC proceedings focused on distributed energy resources, energy storage procurement (based on the framework excluding large-scale pumped storage projects), energy efficiency, and electric vehicles. 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. In particular, CEERT may wish to consider more active participation in a new Rulemaking on Distribution Resource Plans required pursuant to AB 327.

#### Distribution Resource Plans (Distributed Energy Resources) (R.14-08-013)

On August 14 the CPUC issued a new Rulemaking (R.14-08-013) to "establish policies, procedures, and rules to guide California [IOUs] in developing their Distribution Resources Plan Proposals [DRPs] required by AB 327 (Perea) by July 1, 2015." All five Commissioners stressed the importance of this rulemaking. The assigned ALJ is Gamson and the assigned Commissioner is Picker. The rulemaking will evaluate the IOUs' distribution infrastructure and planning procedures and the incorporation of Distributed Energy Resources (DERs) into the planning and operation of their distribution systems.

The Order Instituting Rulemaking (OIR) states that the preliminary scope of this proceeding is to:

- 1) Define principles and develop parameters to guide the development of the DRPs;
- 2) Consider the safety issues that arise from changes to the utility practices of DER planning;
- 3) Develop a calculation methodology for assessing locational value of a particular DER;
- 4) Identify methodologies for assessing whether DERs provide distribution reliability benefits;
- 5) Integrate DERs into distribution system planning and operations;
- 6) Define a set of scenarios and guidelines that will test whether a specific DER integration strategy will work and clarify assumptions embedded in the DRPs;
- 7) Identify any additional utility spending necessary to integrate cost-effective distributed resources into distribution planning consistent with the goal of yielding net benefits to ratepayers;
- 8) Identify barriers to the deployment of distributed resources, including safety standards related to technology or operation of the distribution circuit in a manner that ensures reliable service;
- 9) Review, approve, or modify and approve DRPs; and
- 10) Consider further actions, if needed, to comply with Section 769 and to establish policy and performance guidelines that enable electric utilities to develop and implement DRPs.

The OIR sets forth several questions to address these issues and identifies a Preliminary Schedule that includes a September 17 Workshop, a November Staff Proposal, and a potential January Ruling. CEERT will track this proceeding and attend all relevant workshops and conferences.

Energy Storage (i.e., A.14-02-006, et al. (IOU 2014 Energy Storage Procurement Plans)) Following issuance of D.13-10-040 adopting an Energy Storage Procurement Framework per AB 2514, the IOUs filed Applications on February 28 for approval of their 2014 Energy Storage Procurement Plans.

On March 26, an ALJ ruling consolidated the three Applications into a single proceeding and scheduled a PHC. On May 27, the Commission issued a scoping memo that reminded parties about the three purposes any storage project must meet to receive approval (per AB 2514/ Pub. Util. Code § 2835(a)(3)):

- 1. Optimization of the grid, including peak reduction, contribution to reliability needs, or deferment of transmission and distribution upgrade investments;
- 2. Integration of renewable energy; and
- 3. Reduction of GHG emissions to 80% below 1990 levels by 2050, per California's goals.

The CPUC noted that more detailed information is necessary to evaluate the Applications before utility RFOs occur (no later than December 1), and to consider longer-term aspects of the Energy Storage Procurement Framework and Design Program that could be addressed in a subsequent rulemaking. Topics range from determining the proper definition of storage to augmenting the IOUs' consistent evaluation protocol for conducting a least cost/best fit analysis on offers received in their solicitations.

On June 2, Energy Division staff held a stakeholder workshop to review the regulatory language in AB 2514 and receive input on the definition of "energy storage system." A staff white paper outlined two

straw proposals for how energy storage could be viewed: as including everything from diesel generators to EV charging, or as including only systems with batteries that discharge to the grid. Workshop participants discussed whether any of the IOUs' RFO requirements should be changed or their evaluation protocols improved. Parties were asked to submit written comments on these issues.

CEERT has not formally filed comments in this proceeding, but will continue to track developments, including the issuance of a Proposed Decision. Depending on the outcome and findings of that PD, we may file responsive comments.

#### Energy Efficiency (R13-11-005)

On March 3 an Assigned Commissioner's Ruling (ACR) was issued amending the original Scoping Memorandum for this proceeding and providing guidance on energy savings goals for program year 2015. On March 26, the IOUs, as "program administrators," filed their individual responses and requests for 2015 EE programs and funding. While the original schedule anticipated a Proposed Decision by late spring, none has been issued to date. CEERT will continue to monitor developments in this rulemaking.

#### Advocacy in the Desert Renewable Energy Conservation Plan

CEERT continues to engage as an advocate and active participant in the Desert Renewable Energy Conservation Plan (DRECP), which, when completed, will guide long-term energy and conservation planning for 22 million acres of the California desert and determine how much of that land will ultimately be available for renewable energy projects.

The DRECP is an area of focus for the CEC's 2014 Integrated Energy Policy Report (IEPR), for which there was an August 5 all-day workshop on how to better integrate land-use planning with the energy-siting process. CEERT helped to organize the workshop, and John White was among the panelists.

CEERT has worked actively with the CEC to create support for local assistance grants to develop renewable energy and conservation elements for counties' general plans. These grants have been awarded and the efforts are well underway.

In May, California Desert and Renewable Energy Working Group (CDREWG) subcommittees began to develop outlines and papers on key issues. These included an action plan on durability that resulted in a letter to the Department of Interior; adoption of a vision and values statement that a majority of the group embraced and submitted to the Governor in mid-July and then discussed with Governor's Office of Planning and Research (OPR) Director Ken Alex in mid-August; a letter and policy statement in response to the Department of Interior's recent mitigation report that is being finalized; and a communication of recommendations for permit predictability.

In mid-August, representatives of six conservation groups and six companies presented the CDREWG vision statement to Ken Alex. He committed to releasing the DRECP by the end of September; asked questions about the vision statement and various issues; commented on the Administration's plans for refining and meeting the goals of AB 32; expressed concerns about how much more larger-scale renewables the system needed versus other preferred sources such as rooftop PV and energy efficiency; and asked for CDREWG's help in finishing the DRECP and obtaining legislative support for GHG-reduction policies. Ken applauded the diverse group for continuing to work together on these issues.

The Governor's OPR is developing a plan for solar development on retired San Joaquin Valley farmland. CEERT affiliates involved in this process include NRDC, Defenders of Wildlife, and SunPower.

## **Southern California Activities**

Solar Tax Exemption

The solar property tax credit that Senate Bill 871 enacted was set to expire in 2017, but during last-minute negotiations in Sacramento the credit was extended to 2025 and tacked onto the state 2014-2015 budget that Governor Brown approved. Imperial County officials believe the extension will deprive the county of millions of dollars in revenue over the next 10 years.

Under Proposition 13, property taxes are limited to 1% of assessed value. Imperial County gets 17% of those taxes and the schools 50%. The tax exemption makes it difficult for other renewable energy sources like geothermal to compete with solar, which is the county's largest source of tax revenues.

Imperial County has been approving solar projects with certain mitigation measures in the agreements that have brought in some money and enabled it to buy three additional fire engines. But those measures pale in comparison with the lost property tax revenues. County leaders have always been fans of solar projects and the jobs that result, but they are not happy about the tax credit extension.

The secrecy in which SB 871 was extended did not give Imperial County and other parties enough time to weigh in on the bill, and the matter wasn't brought before the public in a committee hearing. A number of government agencies and renewable energy companies signed a June 13 letter urging legislators to oppose the extension.

#### Salton Sea Restoration and Renewable Energy Initiative

The southern shore of the Salton Sea has an estimated 1,700 MW of geothermal energy potential that is critical to the Imperial Irrigation District's (IID's) transmission expansion plan and to a series of environmental restoration efforts. SB 1139 is a geothermal procurement bill making its way through the Legislature that would diversify California's energy portfolio by requiring the IOUs to procure 500 MW from geothermal plants in the next 10 years. The bill's author, Senator Ben Hueso, and co-author, Assemblymember V. Manuel Perez, hope the bill will restart geothermal development at the Salton Sea.

SB 1139 will enable IID to advance its Salton Sea Restoration and Renewable Energy Initiative, a collaborative effort with Imperial County that calls for development of new geothermal projects at the Salton Sea that would create a funding mechanism for sea restoration efforts. IID hopes to replace some the decommissioned San Onofre Nuclear Generation Station's 2,200 MW of baseload capacity with energy from the Salton Sea geothermal resource area.

The IOUs have opposed the bill, arguing that geothermal energy is more expensive than solar or wind resources. Geothermal developers at the Geysers in Northern California also spoke against SB 1139 because of their concerns that the bill's mandate of 500 MW in new generation would shut the door on Geysers plants whose contracts will expire in the next few years. However, an amendment to the bill would direct the CPUC to consider a number of attributes when evaluating those contracts.

SB 1139 is backed by a broad coalition of labor and environmental groups like the International Brother-hood of Electrical Workers and Defenders of Wildlife, as well as a number of Salton Sea stakeholders including Imperial and Riverside counties. Supporters of the bill believe the benefits of geothermal energy have not received due consideration in the procurement process, and argue that while geothermal has higher upfront costs, the utilities don't fully take into account the stable power it can supply to back up intermittent solar and wind generation in their portfolios.

According to the IID, SB 1139 has the potential to generate up to \$38 million per year in local revenue, reduce GHG and fuel emissions, and create substantial investment and hundreds of high-paying jobs for Coachella and Imperial Valley communities.

#### **Clean Transportation Advocacy**

#### Low-Carbon Fuel Standard (LCFS)

Plaintiffs in the lawsuit on the legality of the LCFS challenged the Ninth District Court of Appeals' ruling that upheld the LCFS program, but on June 30 the Supreme Court let the ruling stand without comment. CARB continues to implement the LCFS while it works to address the Court of Appeals' concerns over aspects of the program. The LCFS is in effect frozen at the 2013 compliance level of a 1% reduction in carbon intensity until the CARB Board adopts revisions that speak to the Court's concerns.

CARB staff are delaying completion of those revisions until next year to allow a more thorough review. CARB will be looking to clarify and enhance the LCFS by cleaning up regulatory language and streamlining the analyses for developing new fuel pathways, and to increase the regulation's flexibility by allowing electrified mass transit, electric forklifts, and GHG reductions at refineries to qualify for LCFS credits. As mentioned in our previous quarterly report, CEERT is serving on a Review and Advisory Committee that will conduct a second formal review of the LCFS program in 2014.

Through March the program continued to accumulate credits in excess of deficits totaling 3.2 MMTCO<sub>2</sub>e. Biodiesel and renewable diesel generated 35% of total credits in 2013; ethanol's share was 54%. Electricity use has been increasing steadily from 0.4% in 2011 to 2.5% in 2013. Alternative fuels displaced 6.2% of petroleum-based fuels during 2011 and 2012 and 7.3% during 2013. The amount of alternative fuels has been increasing and their average carbon intensity has been decreasing: from 86.7 to 81.3 and from 64.6 to 47.6 gCO<sub>2</sub>e/MJ for gasoline and diesel substitutes respectively from 2011 to 2013.

Compliance in the later years of the program might still be a challenge if sufficient cellulosic fuels are not available. To that end, CEERT helped organize a July 23 – 25 cellulosic fuels conference at Iowa State University with key stakeholders from industry, academia, NGOs, and federal and state regulatory agencies. Topics included the industry's current status, feedstock availability, and the sustainability of agricultural biofuel production.

#### Electrifying Transportation

#### Alternative-Fueled Vehicles (R13-11-007)

CEERT has been tracking R.13-11-007, especially for its potential to further reduce GHG emissions and to accelerate plug-in electric vehicle (PEV) adoption. A workshop and comment process to address Vehicle Grid Integration will continue through January.

Since the inception of CPUC Alternative-Fueled Vehicle proceedings in August 2009, the automobile manufacturers (OEMs) have participated only to a very limited extent. CEERT has been in constant contact with representatives of most of the OEMs throughout, and has been strongly encouraging them to become active in R.13-11-007. Both the Alliance of Automobile Manufacturers and the Association of Global Automakers have since become parties to the proceeding.

#### SDG&E Vehicle-to-Grid Integration Pilot (A.14-04-014)

In the spring SDG&E filed a proposal for a pilot project on integrating PEVs with the grid. The pilot would explore how consumers respond to an hourly variant rate and day-ahead pricing for PEV charging, and examine the benefits of efficiently integrating EV charging loads with the grid, such as:

- Increasing EV cost-saving through alternative fuel choice availability and a time-variant rate;
- Promoting EV driver "range confidence" to increase adoption of EVs and alternative fuel use;
- Increasing demand for EV charging stations;
- Increasing zero emission miles driven per PEV; and
- Examining and measuring Vehicle Grid Integration benefits.

SDG&E is proposing to deploy 5,500 chargers at 550 sites in the next four years. (California currently has 5,377 public PEV chargers at 1,868 sites.) The utility is seeking to own the EV charging facilities while contracting with third parties to build, install, operate, and maintain the equipment. SDG&E estimates pilot costs at nearly \$103 million over 10 years, and seeks to recoup those costs from rate recovery and cap-and-trade allowance revenues.

In initial comments, parties have raised concerns, including:

- Whether the size and duration of the proposed project is appropriate for a pilot;
- How the pilot might affect the larger market for charging infrastructure in the San Diego region;
- Whether the pilot should be paid for by ratepayers and cap-and-trade allowances; and
- Whether SDG&E owning the charging equipment conflicts with a prior CPUC decision (D.11-07-029) prohibiting such utility ownership.

The CPUC discussed the issues with parties during a PHC on August 13. A forthcoming ALJ ruling will determine whether to wait for issues such as the IOU's ownership of charging equipment to be resolved under R.13-11-007 before the review of the pilot proposal proceeds.

CEERT has not formally filed comments in either the A.14-04-014 or R.13-11-007 proceedings, but will continue to track developments and engage if our advocacy will ensure the successful and sustainable deployment of charging infrastructure necessary to build a strong PEV market.

#### Fuel-Cell Vehicles (FCVs) and Hydrogen Fueling Infrastructure

On July 25, the California Fuel Cell Partnership released a progress report on hydrogen fueling station deployment. The market certainty that AB 8 provided has led automobile manufacturers to commit to delivering FCVs to the California market in 2014 and 2015. The Alternative and Renewable Fuel and Vehicle Technology (AB118/AB8) Program's most recent funding will add 28 new hydrogen fueling stations to the nine that currently exist and the 17 now under development, for a total of 54 stations in the state by 2016, which represents significant progress toward California's initial goal of establishing a 100-station network to support the full commercialization of FCVs.

#### Alternative and Renewable Fuel and Vehicle Technology Program

CEERT continues to serve on the Advisory Committee for the Alternative and Renewable Fuel and Vehicle Technology (AB118/AB8) Program. On April 22 the CEC adopted the Advisory Committee's \$100 million 2014 Investment Plan, which proposes \$20 million in funding for EVs and charging infrastructure and \$20 million for hydrogen fueling infrastructure for FCVs, with additional funding possible for EVs and FCVs as part of the \$15 million Medium and Heavy Duty Advanced Demonstration Program.