Energy - Docket Optical System

From: Alecia Ward [award@lbl.gov]
Sent: Friday, March 28, 2014 5:00 PM
To: Energy - Docket Optical System
Cc: lorraine.gonzalez@energy.ca
Subject: RE: the docket number 12-EPIC-01 : "EPIC Second Investment Plan"

Thank you for the opportunity to provide comments on the EPIC Second Annual Triennial Investment Plan 2015 – 2017 and for your leadership developing the draft. We are pleased to see a number of comments from the previous workshops on 3/17 and 3/21 adopted into the draft plan. We hope to see more as your thinking on the subject evolves.

Applied Energy and Development

In general, we believe the draft could more effectively emphasize system integration approaches between and among systems for buildings, between and among buildings and with the grid and between and among storage potential (EV and other types) with the Grid. These interconnection points are essential to effectively realize that savings that current policies envision but current practice does not deliver.

That is, the plan seems to be divided into many technology silos, which by themselves are quite useful, but the fragmentation of which has the potential to lead to a suboptimal and probably more expensive solutions.

Buildings

It feels as if the draft plan supports, for example, research in sensors and controls, but used in technology specific examples: lighting + sensors, HVAC + sensors, fault diagnostics + sensors. Of potentially greater value would be an integrated systems focus that includes the interactive effects of each of the technologies and their corresponding sensors and controls for whole system, whole building, whole campus level assessment and impact. Perhaps this is intended, but not explicitly stated.

Research is needed to develop whole-building design and operations platforms and models that include: integrated envelope-, lighting-, and plug-related load reductions, HVAC system optimization for part-load operation and proper installation. A coordinated, multi-disciplinary effort is needed involving systems integration, training, retrofit identification, M&V, demand-response links with the grid, Attractive financing options that support whole-building savings and bill reduction are needed to get to the next level of building performance regardless of building type or age. Amory Lovins calls such an integrated approach "tunneling through the cost barrier." If these integrated design and research agendas are intended, clarifying language would be useful.

Campuses, Communities and Regions

At a high level, the plan also focuses on energy retrofit or design of new buildings at individual buildings level, with what appears to be limited coverage of the opportunities and challenges at a larger scale such as communities or cities. California continues to be challenged by the vision of NZE in contract to real market barriers. Energy retrofit at individual buildings level, although demonstrated significant energy savings, is limited to high retrofit cost and scale of energy savings because retrofit is done for one building at a time. The goal of Zero-Net-Energy (ZNE) buildings may not be realized for certain building types like hospital or in certain climates (hot or cold) if looking at performance of buildings at individual level. Energy retrofit or new design at the community level: (1) provides a new holistic approach for large scale energy savings in more cost effective ways, and (2) enables and integrates energy efficiency technologies at the community level. Energy efficiency at community scale should be added as a research initiative in the EPIC investment

plan. We anticipate release of additional PONs on the first investment plan. If those PONs are intended to provide basic research in this area, it will be essential to bring the findings of that research into the second plan.

We hope that we have misread what appears to be a siloed approach and that the next round of review on the plan will clarify. It is possible that you intended the plan to address these integration opportunities in the Technology Demonstration and Deployment Section 12. Bridge language for how you see the applied technology R&D efforts linking to the demonstration and deployment strategies and being pulled through to market via the facilitation priorities of the CEC will be useful.

Market Facilitation

Of some concern is what appears to be a lack of strategies related to climate modeling and adaptability, life-cycle cost analysis, and research at the intersection of the energy water nexus (apart and distinct from the use of water for energy product or the use of energy for water production – but the analytical framework to prioritize technologies and integration policies that will meet the state's goals). We were pleased to see these strategies in the first plan and are hopeful that as PONs are released off of year 1 funding that those important policy strategies – for which clear research is needed to establish baselines and metrics for tracking impact – will be included. One tranche of funding on these important policy research areas is insufficient to make meaningful progress, so we hope to see them pulled through into the second plan.

Tools, metrics, measurement methodologies and best practices for moving the needle in the marketplace are needed as well. We note with interest the S21 strategy and hope to learn more detail about the planned efforts in this area. It appears to be a regulatory methodology for assessing impact of the investments that are made by CEC rather than a market mechanism that will measure and inform greater market uptake.

Again, thank you for the opportunity to provide comments and we look forward to learning more as the plan evolves into its final form.