

23 May, 2016

Dina Mackin
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California Public Utilities Commission – Energy Division
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Re: Clean Coalition Comments on the June 5th Workshop and Stakeholder Questions in the Staff White Paper on Grid Modernization

Dear Ms. Mackin,

The Clean Coalition would first like to thank Staff for the work in developing the white paper for discussion and for the effective incorporation of prior stakeholder input. Staff's dedication will result in better policy and outcomes for California going forward. With these comments, we include recommendations related to the June 5th Workshop as well as responses to the stakeholder questions in the Staff White Paper on Grid Modernization.

Recommendations Related to the June 5th Workshop

The Clean Coalition would like to make the following overall recommendations and requests for the June 5th Workshop:

- 1) We must make sure that technology and investment decisions do not inappropriately foreclose policy options, while still moving forward and investing cost effectively. California Public Utilities Code §769(c) requires reform of utility distribution planning, investment, and operations to “minimize overall system cost and maximize ratepayer benefits from investments in preferred resources,” while advancing time- and location-variant pricing and incentives to support distributed energy resources. Grid modernization plans can only be developed and evaluated within the context of defined goals and metrics. Therefore, the workshop should address topics and specifically seek oral and written comment on the role of grid

- modernization investment in relation to these broader goals, including the Commission’s own Distributed Energy Resources (DER) Action Plan, wholesale DER market integration and interconnection, Integrated Resources Planning (IRP) proceeding, and inter-agency greenhouse gas (GHG) reduction targets.
- 2) The workshop should explicitly distinguish between investments to accommodate natural growth of DER under existing conditions (“need based”) *and* investments to accelerate the adoption of DER above natural growth (“value based”) and fully address both. Currently, the proposal focuses on planning for modernization to provide for natural growth in DER that would occur under existing conditions. However, this may result in underinvestment in enabling technologies that are prerequisite of an acceleration of DER growth above and beyond autonomous growth under existing conditions and policies. Thus, the grid modernization process must incorporate both accommodation of natural growth in deployment and expressly provide for investment in enabling technologies for faster DER deployment than current natural growth in addition, particularly where enabling enhanced growth will result in net ratepayer and societal benefits.
 - 3) The workshop should address investment in new functionalities beyond those required by natural growth in DER under current policies, economic conditions, and grid functions. Natural growth today, for example, occurs without recognition or recovery of the full value stack because many key enabling technologies and markets have not yet been implemented or do not exist for value capture or compensation.
 - 4) The exclusion of policy considerations could prevent the grid modernization Planning Process from responding to the needs of specific policies. For example, if there is a policy commitment to implementing full-service Distribution System Operators (DSOs), grid modernization investments must reach beyond the needs for supporting natural growth in DER deployments and include a whole new set of information technology and control technologies to allow DSOs to manage distribution, to provide the ISOs with reliable forecasts and reliable services, and to

- manage the distribution level markets with the goal of resource optimization. Thus, the grid modernization planning process must at minimum be responsive to ongoing policy developments, and ideally would provide inputs to that process. Failure to direct grid modernization investments to address evolving trajectories of DER deployment would be inefficient and not result in the most cost-effective investment in both infrastructure and resource procurement.
- 5) The workshop should address methods for a dynamic planning process that incorporates and balances investment on grid modernization to support accelerated DER deployment resulting from changes in policies and market opportunities. For example, while the development of a DER management system (DERMS) is distinct from modernization of the physical grid infrastructure, the ability of DERMS to effectively leverage DER value is dependent upon compatible infrastructure equipment. Grid investment must reflect established DER Action Plan goals including those related to wholesale DER market integration and interconnection, and associated rates and tariffs.
 - 6) As part of that planning process, the workshop should address methods for forecasting both natural DER growth and also DER growth acceleration driven by new policy changes and new economic circumstances. For example, as policies are developed to create new markets to add to the value stack, forecasts must include analyses of market response, based on which DER deployment becomes profitable and where. This will also be driven by grid investments which enable greater visibility, dispatch, signaling, and compensation opportunities as the capabilities inherent in DER become accessible to grid operators.
 - 7) The workshop should address use cases that include not just participation of DER in transmission-level wholesale markets, but also full-scale distribution management by DSOs. This would include consideration of the full set of technologies to support the development of distribution wholesale markets, participation in transmission wholesale markets, integration of signals from both distribution and

transmission grid operators at the T-D interface, and advanced management of the distribution grid.

SPECIFIC STAKEHOLDER QUESTION COMMENTS

The Clean Coalition also would like to address several of the following issues raised in the stakeholder questions throughout the white paper.

Section 1: Defining Grid Modernization Stakeholder Questions:

Question 1 – Please provide any comment and/or recommended changes to the definition, challenges and opportunities, or objectives of Grid Modernization presented in this section.

We would like to recommend that the development of the grid modernization planning process include consideration of policies under development in other proceedings. Most policy changes will need new functionalities, which in turn will require particular investments beyond those required for current natural DER growth. Thus, the workshop should consider ways to support and prioritize accelerated deployment (above natural growth). For example, natural growth may require improvements to grid capacity or state reporting, while accelerated deployment through creation of DSOs will require increased investment in telemetry and distribution level forecasting for distribution grid management and distribution level markets, and a focus on bidding into transmission markets will require IT investments to allow bidding into the full suite of energy services market at the transmission level. The proposed guiding objective of “[c]onnect[ing] DERs to existing and new markets to reduce costs and to create value for ratepayers” will necessarily require consideration of the kinds of market structures that are likely to or should emerge.

Question 2. Based on the definition above, which investments should be characterized as only supporting safety and reliability, and thus, out of scope of this proceeding?

The workshop should consider an “impacts test” to assess which investments should qualify as DER grid modernization investments that are “*primarily* driven by the need to

accommodate high penetration of the DERs.” Where the incremental capabilities of the grid resulting from the investment are more than 50% (or some other higher or lower percentage set by the Commission) DER, then the investment could be characterized as primarily supporting DER in addition to general safety and reliability.

This formulation would suggest that more detailed methodologies should be developed to characterize the suite of resources that would not be possible without the investment. While this likely goes beyond what IRP may provide, it may be key to avoiding ruling out investments based on technology even though they may be critical to supporting DER.

Section 2: Classification of Grid Modernization Investments to Support DER

3. Does this classification framework, with the 5 sets of categories, accurately frame grid modernization technologies for the purpose of clarification and evaluation of grid needs?

We recommend that the workshop include a discussion of the Distribution System Management Activities. Considering these critical functions will enable workshop participants to evaluate policies, planning, and technologies that will inform whether the Distribution System Operator model would add to the value stack for DERs and result in accelerated DER growth.

4. Are the categories of use cases, technologies, functions and other classification accurate and complete? If not, what should be added or modified?

We recommend the workshop consider adding a fourth use case for evaluating the impacts of upcoming policy changes as these are developed and adopted. This would allow consideration of investments in support of policy changes in parallel to the development of such policies. This “future forward” use case should include the deployment of a full function Distribution System Operator (DSO), which would operate the distribution grid, manage high penetration of DERs, manage the local energy market, provide reliability and

resiliency, and dispatch services to manage distribution markets, distribution grids, and the transmission-distribution (T-D) interface.

In addition (or alternatively), the workshop could take the approach of considering the DSO another “technology category.” Since the DSO model represents a distribution management system and policy innovation that could specifically address the High DER Adoption and Grid and DER Services use cases, this model could be considered alongside other technologies to ensure that technology decisions do not inappropriately foreclose a policy option.

Section 3.2 Identification of Grid Needs

7. What types of information and level of detail should the IOUs include in the GNA?

The workshop should consider a supplemental component of the Grid Needs Assessment (GNA) process to evaluate needs arising out of changes in economic conditions or new policies calling for new grid functionalities. In addition to using the Interconnection Capacity Analysis (ICA) and Locational Net Benefits Assessment (LNBA) to assess where growth is expected to occur, the GNA should evaluate where next best opportunities are likely to occur. In the event of new policies or favorable economic events, the grid modernization planning process would be able to respond more flexibly to changing conditions by pre-evaluating the areas where incremental or accelerated growth would occur beyond the natural growth anticipated under “business as usual” growth scenarios. Also, the GNA should evaluate what additional investment would be needed to support additional functionalities required to support policy changes, such as telemetry for advanced distribution management or more sophisticated energy services markets.

8. Should the Grid Needs Assessment be formally filed, or only made available for informal review? If formally filed, what is the appropriate procedural vehicle? (e.g., Advice Letter, Motion, Application)?

The workshop should consider how best to make the process responsive to stakeholder input, since assessment of future needs is likely to require a wider range of feedback than existing modeling and forecasting.

9. How can the timing of the GNAs, GMPs, and GRCs be best coordinated? How should the Grid Needs Assessment inform the GMP?

As part of the consideration of how best to respond to changing conditions and near-term changes, the workshop should also consider a hybrid GNA system, with a three year GNA submitted with each GRC and supplemental GNAs each year to address policy or economic developments, if any, and perhaps a more fine-grained report on implementation of the Grid Management Plan (GMP) for that year.

Section 3.2.2. Prioritization of Proposed Location-Specific investments

10. Is this schema an appropriate method to prioritize locational needs and proposed investments? How should it otherwise be modified, or what would be an alternative approach to identifying locational priorities?

The workshop should consider adding columns for “High potential acceleration” for areas that are not currently forecasted to have high immediate DER growth during that GMP period, but are close to having accelerated DER penetration with marginally improved economics. This column would differentiate areas with low current DER growth and low projected DER growth from those with low current DER growth, but potentially high long-term DER growth.

Section 3.3. Grid Modernization Plans

11. Should the Grid Modernization Plans include information on both location-specific and systemwide proposed investments or should they focus on system-wide proposals?

The workshop should evaluate the relationship between aggregated localized needs and system-wide needs beyond the scope of localized needs. Grid modernization needs and value varies by location, and even systemwide investment should reflect locational implementation prioritization.

12. What additional or different information should the IOUs submit as part of the Grid Modernization Plans?

The workshop should evaluate how the GNAs incorporate changes to policies and conditions that would direct investment to support additional functionalities. Since the GNAs as proposed rely on projections based on current conditions, the GNAs should be supplemented with an evaluation of investments that support new functionalities to support acceleration resulting from changes in policy or improved economic circumstances.

Section 3.4. Evaluating the Cost Reasonableness of the Grid Modernization Plans

Net Benefits definitions Options

16. Are there any additional approaches to assessing net benefits that should be considered? And 17. Which of the above options should be applied and why?

The workshop should evaluate the tools identified in Options 1 and 2 within the context of the Option 3 approach. Cost-effective investment requires that decisions be based on a full and unbiased assessments of value. Therefore, we can and should apply the best measurement methods available at the time while continuing to refine these methods and values to the degree warranted.

Thus, the workshop should seek to enumerate the IOU tools described in Option 1, the Commission-developed tools in Option 2, and develop procedures for incorporating new tools as they are developed going forward. Currently, neither group can completely identify factors that need to be included in the valuation, and some evaluate technologies only in isolation from the location and context. That said, the Commission developed tools represent significant inputs of time and expertise that should not be ignored. Finally, the Least Cost Best Fit (LCBF) analysis is conceptually the most sensible approach, but the existing LCBF is not designed for this application and will need substantial modification. Therefore, the workshop could usefully take up how to incorporate the tools from Options 1 and 2 into a modified and improved LCBF framework.

The Clean Coalition thanks Staff for the opportunity to participate and for your ongoing work on this effort.

Respectfully submitted,



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Policy Director

Clean Coalition.