Decision **PROPOSED DECISION OF ALJ KERSTEN** (Mailed 2/21/2014)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company (U39M), San Diego Gas & Electric Company (U902E), and Southern California Edison Company (U338E) for Authority to Increase Electric Rates and Charges to Recover Costs of Research and Development Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems.	Application 11-07-008 (Filed July 18, 2011)

DECISION MODIFYING DECISION 12-12-031 TO COMPLY WITH SENATE BILL 96 (CHAPTER 356, STATUTES OF 2013)

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DECISION MODIFYING DECISION 12-12-031 TO COMPLY WITH SENATE BILL 96 (CHAPTER 356, STATUTES OF 2013)

1. Summary

This decision modifies Decision (D.) 12-12-031 (*Decision Granting Authority to Enter into a Research and Development Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems and for Costs Up to $152.19 Million*) to comply with Senate Bill (SB) 96 (Chapter 356, Statutes of 2013), which was signed by the Governor of California on September 26, 2013.[1]

Accordingly, among other things, as required by SB 96, this decision modifies D.12-12-031 as follows:

1. Reduces the 21st Century Energy Systems (CES-21) total budget from $152.19 million (including "franchise fees" and "uncollectibles" to $35 million (including "franchise fees" and "uncollectibles") over a five-year period;
2. Limits areas of research to be funded by ratepayers to "cyber security" and "grid integration" only;
3. Shrinks the governance structure from a six-member Board of Directors to three Project Managers chosen from Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E);
4. Voids any CES-21 program management expenditures, incurred to date by PG&E, SCE, and SDG&E and caps future administrative expenses to no more than 10% of the total CES-21 budget;

[1] SB 96 includes Sections (§§) 44 and 45 and adds § 740.5 to the Pub. Util. Code and explains its purposes. (Any references to SB 96 are contained in Attachment A of this decision.)

5. Requires an enhanced Legislative and Commission oversight of the CES-21 Program including a streamlined and more rigorous monitoring and evaluation system to be adhered to by PG&E, SCE, and SDG&E at various stages of the five-year program; and
6. Based on Items 1-5 above, revises the Cooperative Research and Development Agreement (CRADA) guidelines and project criteria accordingly.

As stated in Section 3.1.1, in this decision, we address various policy, programmatic, and governance *implementation* issues to D.12-12-031 as directed by SB 96. It does not revisit *foundational broad policy and legal issues* related to D.12-12- 031, including but not limited to, broad articulation of state policy pertaining to research design and development, extensive procedural history of multiple research design and development (RD&D) initiatives (e.g., utility-sponsored, Electric Power Research Institute (EPRI), Electric Program Investment Charge (EPIC)), Commission jurisdiction and authority, exhaustive justification of four areas of research using illustrative examples, review of parties' objections to original utility proposal, state action immunity, commercialization of intellectual property, and allegations of prejudgment in the original proceeding.[2]

In this decision, we emphasize ongoing monitoring and evaluation activities of the ongoing CES-21 Program as directed by SB 96. Therefore, in the area of "Reporting Requirements," we repeat and emphasize extensive references from D.12-12-031 as a foundation and provide enhancements as

[2] D.12-12-031, Decision Granting Authority to Enter into a Research and Development Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems and for Costs up to $152.19 Million, Conclusions of Law 1-8, 13-16 at 90-92.

needed so that a clear "big picture" emerges about what is required for PG&E, SCE, and SDG&E to be in compliance with this decision.

Because this proceeding was initiated July 2011, before the EPIC proceeding, Rulemaking (R.) 11-10-003 commenced in October 2011,[3] the directives contained in D.12-05-037 (or subsequent EPIC decision D.13-11-025 approving the utilities' triennial investment plans for 2012-2014) do not apply to this decision unless explicitly stated otherwise.[4]

Application 11-07-008 is closed.

2. Background

On December 20, 2013 the California Public Utilities Commission (Commission or CPUC) approved Decision (D.) 12-12-031 by a vote of 5-0. D.12-12-031 authorizes Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) (collectively known as Joint Utilities) to enter into a five-year research and development agreement with Lawrence Livermore National Laboratories (LLNL) known as "21st Century Energy Systems." In short, "the utilities were authorized to spend up to $30 million a year for five years on research activities, for a total of $152.19 million total costs (when franchise fees and uncollectibles

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[3] D.13-11-025, *Decision Addressing Applications of the California Energy Commission, Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company for Approval of Their Triennial Investment Plans for the Electric Program Investment Charge Program for the Years 2012*, at 5. R.11-10-003 was instituted to address funding and program issues related to RD&D portions of the now expired public goods charge. D.12-05-037, in Phase 2 of the rulemaking determined that EPIC funding would continue from 2012 through 2020 and established a framework for Commission oversight of the EPIC program.

[4] D.12-12-031 at 14.

are included).[5] The decision allocates costs to the utilities according to the following percentages: PG&E at 55%; SCE at 35%; and SDG&E at 10%. According to a Cooperative Research and Development Agreement (CRADA), research activities are limited to four areas as identified in Section (§) 740.1: Gas Operations, Electric Operations, Electric Operations, Electric Resource Planning, and Cyber security.[6] The CRADA also specifies criteria that each of the research projects must meet.[7] In addition, the CRADA entails a Board of Directors with six members: three members chosen from the participating utilities; and three members chosen by utilities with relevant research backgrounds in either academia or research institutes.[8] The decision requires a Tier 3 Advice Letter filing that includes at a minimum, the proposed research projects that will be conducted in the upcoming year. As D.12-12-031 points out, a Tier 3 Advice Letter requires a higher level of Commission scrutiny and oversight than Tier 1 and Tier 2 Advice Letters.[9]

On September 26, 2013, Senate Bill (SB) 96 was signed by the Governor of California and Chaptered by the Secretary of State.[10] SB 96 included §§ 44 and 45, which add § 740.5 to the Pub. Util. Code and explain its purpose.[11]

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[5] D.12-12-031 at 2.

[6] D.12-12-031 at 4.

[7] D.12-12-031 at 5.

[8] D.12-12-031 at 5.

[9] D.12-12-031 at 15-19.

[10] SB 96 (Chapter 356, Statutes of 2013).

[11] These sections of SB 96 are included in Attachment A of this decision.

Section 45 states that the purpose of § 740.5 is "to limit the implementation of the Public Utilities Commission Decision 12-12-031." In particular, § 740.5 restricts research and development projects to those that pertain to "cyber security" and "grid integration." In addition, it limits total funding over the proposed five-year research period to $35 million. Section 740.5 also states:

> The commission shall not approve for recovery from ratepayers, those program management expenditures proposed, commencing with page seven, in the joint advice letter filed by the state's three largest electrical corporations, Advice 3379-G/4215-E (Pacific Gas and Electric Company), Advice 2887-E (Southern California Edison Company), and Advice 2473-E (San Diego Gas and Electric Company), dated April 19, 2013. Project managers for the 21st Century Energy System Decision shall be limited to three representatives, one representative each from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company.

Section 740.2 also contains prohibitions on the funding of duplicate research and adopts reporting requirements:

> (e) (1) The commission shall require each participating electrical corporation to prepare and submit to the commission by December 1, 2013, a joint report on the scope of all proposed research projects, how the proposed project may lead to technological advancement and potential breakthroughs in cyber security and grid integration, and the expected timelines for concluding the projects. The commission shall, within 30 days of receiving the joint report, determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient submit the report to the Legislature in compliance with Section 9795 of the Government Code.
>
> (2) The commission shall require each participating electrical corporation to prepare and submit to the commission by 60 days following the conclusion of all research and development projects, a joint report summarizing the outcome of all funded projects,

> including an accounting of expenditures by the project managers and grant recipients on administrative and overhead costs and whether the project resulted in any technological advancements or breakthroughs in promoting cyber security and grid integration. The commission shall, within 30 days of receiving the joint report, determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient, submit the report to the Legislature in compliance with Section 9795 of the Government Code.

As a consequence of the enactment of SB 96, the Commission found it necessary to reopen the proceeding and modify the scope to solicit feedback from parties as to how the Commission should revise D.12-12-031. Accordingly, pursuant to § 1701.5, the assigned Commissioner and Administrative Law Judge (ALJ) issued a Scoping Ruling on October 24, 2013 amending the scoping of the proceeding to accommodate new issues and extend the deadline to permit resolution of them by April 21, 2015.[12]

In the ACR, the Commission invited comments and replies that address the following questions:[13]

- How should D.12-12-031 be modified in light of the requirements adopted in SB 96?
- What research topics fall under the approved research areas of "cyber security" and "grid integration"? Specifically, how does the topic of "grid integration" relate to the research topics "electricity operations" and "electric resource planning" that were adopted in D.12-12-031?

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[12] Assigned Commissioner and Administrative Law Judge's Scoping Ruling Inviting Comments to Determine Next Steps in Light of Enactment of Senate Bill 96 (Chapter 356, Statutes of 2013) (ACR), issued October 24, 2013, at 3.

[13] ACR at 5-6.

- How should the research costs be allocated among the participating utilities now that the project will not include a study of gas operations or gas safety?
- How should the Commission implement the $35 million cap on research funded under this decision?
- How should the governance structure adopted in D.12-12-031 be modified to ensure that "project management" is limited to one project manager from PG&E, SCE, and SDG&E? Does this requirement preclude project oversight from the Commission?
- What requirements are needed to ensure compliance with the reporting requirements in § 740.5(e)? Does the report structure contained in § 740.5(e), which is tied to the completion of a research project, eliminate the need for an annual advice letter and report?
- Does this proceeding require additional hearings for resolution? Is a prehearing conference (PHC) warranted? Are evidentiary hearings (EHs) necessary? If so, what factual matters would be the subject of EHs?

Opening Comments were filed on November 22, 2013 by PG&E, SCE, and SDG&E (Joint Utilities), Office of Ratepayer Advocates (ORA), and The Utility Reform Network (TURN). Reply comments were filed on December 6, 2013 by the Joint Utilities, ORA, and TURN.

As a consequence of SB 96 and the October 24, 2013 Scoping Memo, on January 20, 2014 and January 23, 2014, respectively, Energy Division rejected the April 17, 2013 Joint Advice Letter filed by San Diego (Advice Letter 2473-E), PG&E (Advice Letter 3379-G/4215-E), and SCE (Advice Letter 2887-E).

On December 20, 2013, Energy Division also rejected without prejudice a November 27, 2013 Annual Report filed by PG&E, SCE, and SDG&E. In compliance with SB 96, this report described the scope of proposed 21st Century Energy Systems (CES-21) research projects. "Because the utilities filed the report

before the Commission had the opportunity to take input from stakeholders to resolve [SB 96] implementation issues the Commission rejects the Joint Report without prejudice."[14] In this same letter, the Commission states that it would instruct the Joint Utilities on how to amend the Joint Report via a revision of D.12-12-031 or a new decision in Application (A.) 11-7-008.

3. Issues before the Commission

The major issue before the Commission is how to modify D.12-12-031 in light of enactment of SB 96. Following is a discussion of related issues as highlighted in Opening Comments and Reply Comments on the ACR.

3.1. Modification of D.12-12-031 in Light of SB 96 Requirements

3.1.1. Parties' Position

In PG&E's Opening Comments on the ACR, it urges the Commission to modify D.12-12-031 through a supplemental decision rather than issuing an entirely new decision because it would better conform to the requirements adopted in SB 96. "SB 96 does not repeal or invalidate D.12-12-031 (the original decision), but merely requires certain ministerial changes to the decision to conform to the Legislature's direction."[15]

In contrast, TURN and DRA suggest that D.12-12-031 should be replaced with an entirely new decision since the changes required by SB 96 are so extensive. According to TURN, "The changes required by SB 96 are so fundamental that the Commission should annul D.12-12-031 and replace it in its

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[14] Commission's Letter "Rejection of the California Energy Systems for the 21st Century Joint Utility Annual Report," dated December 20, 2013.

[15] PG&E Opening Comments on ACR at 2.

entirety with a new decision."[16] TURN claims that it would be "unwieldy" to navigate between two documents to fully understand the scope of changes required by SB 96. As an example, TURN points out the Joint Utilities' claim that at least 17 of the 20 Ordering Paragraphs in D.12-12-031 would have to be modified, replaced, or eliminated.[17] According to ORA, "Based on the statutory constraints in SB 96, the CES-21 Program as adopted in D.12-12-031 does not comport with SB 96 and must be modified."[18]

3.1.2. Discussion

As stated in § 3.1 of this decision, in this decision, we address various policy, programmatic, and governance *implementation* issues to D.12-12-031 as directed by SB 96. It does not revisit *foundational broad policy and legal issues* related to D.12-12- 031 including, but not limited to, broad articulation of state policy pertaining to research design and development, extensive procedural history of multiple RD&D initiatives (e.g., utility-sponsored, EPRI, EPIC), Commission jurisdiction and authority, exhaustive justification of four research areas using illustrative examples, overview of unique modeling capability and expertise of LLNL, review of parties' objections to original utility proposal, state action immunity, commercialization of intellectual property, and allegations of prejudgment in the original proceeding.[19] There is no need to revisit these foundational issues in this decision.

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[16] TURN Reply Comments on ACR at 3.

[17] TURN Reply Comments on ACR at 3.

[18] ORA Opening Comments on ACR at 3.

[19] D.12-12-031, COL 1-7, 13-16 at 90-92.

Therefore, the Commission, pursuant to its authority under Section 1708 of the Public Utilities Code,[20] and having provided notice to parties and an opportunity to be heard, hereby modifies D.12-12-031 in light of enactment of SB 96. It is accurate that most Conclusions of Law and Ordering Paragraphs would need to be modified, replaced, or eliminated. To assist in understanding the differences between the original decision and this newly updated one, each section outlines the differences between the two in the areas of scope of research projects, allocation of resources costs, implementation of $35 million cap, governance structure, Commission oversight, reporting requirements, and CRADA guidelines.

As to articulation of state policy pertaining to CES-21, the key drivers of both decisions are the same even though implementation details may be different. This Commission approves the coordinated efforts of PG&E, SCE, and SDG&E to enter a CRADA with the LLNL for the CES-21 research project. As D.12-12-031 states, "In doing so, the Commission is promoting one of the cornerstones of California's energy policy, that of continuing ratepayer-funded research and development that ensures continued, safe, reliable, affordable, and environmentally sustainable electric service."[21]

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[20] According to § 1708 of the Pub. Util. Code, "The Commission may at any time, upon notice to the parties, and with opportunity to be heard as provided in the case of complaints, rescind, alter, or amend any order or decision made by it. Any order rescinding, altering, or amending a prior order or decision, shall, when served upon parties, have the same effect as the original order or decision."

[21] D.12-12-031 at 71.

3.2. Scope of Research Projects

3.2.1. D.12-12-031 and SB 96

According to D.12-12-031, the "CES-21 Project activities and associated costs primarily will center around Cyber Security, Electric Resource Planning and Electric and Gas System Operations."[22]

Concerning the projects, the Joint Utilities state:

> The Joint Utilities and LLNL in their testimony identified potential initial projects for CES-21 that are not exclusive, but which were chosen because each is in a category or cluster of strategic "problems" and "opportunities" which the Joint Utilities and most energy policymakers believe should be a priority for further research, development and demonstration. As other high priority strategic problems and opportunities are identified, those too will be considered for CES-21 funding. However, the Project will not fund "undefined research." In addition, as described in more detail … below, the governance process will ensure that the funded research is defined, including evaluation of costs and benefits, consistent with other utility customer-funded RD&D programs.[23]

According to SB 96, "In implementing the 21st Century Energy System Decision the [C]ommission shall not authorize recovery from ratepayers of any expense for research and development projects that are not for purposes of cyber security and grid integration."[24] As the ACR points out, the issue is to determine what topics fall under the approved research areas of "cybersecurity" and "grid integration."

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[22] Exhibit U-1 at 1-3. For a discussion of these areas, please see D.12-12-031 at 19-23.

[23] Exhibit U-1 at 1-3.

[24] SB 96, Section 45(b).

3.2.2. Parties' Position

3.2.2.1. Cyber Security

In Opening Comments on the ACR, the Joint Utilities offers the following definition of Cyber security:

> Cyber security as applied to the IOUs encompasses a large number of research areas, including research in both the enterprise and industrial control systems (ICS) topic areas of cyber security, particularly in the case of ICS. Open research topics include: detection of advanced threats, detection of previously unknown threats ("zero-day vulnerabilities"), automated response to threats, operating ICS infrastructure in the face of constant attack (how to build a "resilient" grid), modeling and simulation of threats and response scenarios, and vulnerability assessments / supply chain analysis of grid components.[25]

TURN acknowledges that "cyber security" was one of the four research areas identified in D.12-12-031 as potential candidates for CES-21 Projects. They also note that the utilities propose "Advanced Threat Analysis Capability" and "Modeling and Simulation to Identify Cyber Security Vulnerabilities" as potential projects within the "Cyber security" research area. TURN agrees that "the research topics covered by these proposed projects would seem to fall under "Cyber security" as contemplated by SB 96."[26] However, with the reduction of funds adopted by SB 96, they caution that the scope of the proposed projects may need to be adjusted downward.

ORA observes that the topics within the approved research area of cyber security have already been addressed with in D.12-12-031. "Nothing in

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[25] Joint Utilities Opening Comments on ACR at 3.

[26] TURN Opening Comments on ACR at 2.

SB 96 demonstrates that the Legislature intended to redefine or remove the cyber security from the CES-21 Program."[27] They do not think that it is necessary for the Commission to revisit the definition of cyber security activities at this time.

3.2.2.2. Grid Integration

The Joint Utilities claim that "grid integration" is defined as a "cross cutting" research category that relates to two of the four original research categories identified in D.12-12-021: electric resource planning and electric system operations. "The challenges of grid integration, particularly with respect to grid integration of renewable resources, are widely recognized as an important research area."[28] The Joint Utilities observe the increasing use of intermittents as part of its resource mix and the need to better understand and manage "operating flexibility requirements." This is necessary in order to continue to provide safe and reliable service at affordable rates.[29]

Within this context, the Joint Utilities highlight a project that falls within this framework called the "Flexibility Metrics and Standards Project."[30] This project proposes to evaluate existing and planned flexibility metrics and tools with the aim to quantify operating flexibility requirements and the residual resource needs not met by current or already planned resources.

TURN observes that "grid integration" is not necessarily a "neat fit" with CES-21 as described in D.12-12-031. The term is not present in the evidentiary record or any party's brief submitted in the proceeding. To the extent that the

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[27] ORA Opening Comments on ACR at 3.

[28] Joint Utilities Opening Comments on ACR at 4.

[29] Joint Utilities Opening Comments on ACR at 4.

[30] Joint Utilities Opening Comments on ACR at 4.

word "integration" has been introduced into the record, it does so in terms of "renewable integration."[31] "I]f the Commission determines that 'grid integration' is essentially the same as 'renewable integration', the research topics covered by electric resource planning or electric system operations in D.12-12-031 would seem to be candidates for this label."[32]

In the absence of a suitable definition, TURN suggests that the Commission is in a position to interpret the definition. It is difficult to speculate what the Legislature intended especially if they didn't use terms found in the decision. If the landscape has shifted since the decision, then one could interpret "grid integration" more broadly to refer to integration at the level of the utility's distribution system with demand response and distributed generation resources. TURN observes that many ratepayer funds have already been devoted to the study of "renewable integration" so one other approach could be to focus on a "different set" of "grid integration" issues.[33]

If "grid integration" is defined, TURN believes that the Joint Utilities should point to some source for that definition rather than a definition that they have developed themselves based on nothing other than it is the definition they would like the Commission to use.[34]

ORA agrees with TURN that the definition of "grid integration" is "less clear."[35] ORA recommends that one look at other proceedings for guidance:

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[31] TURN Opening Comments on ACR at 2.

[32] TURN Reply Comments on ACR at 2-3.

[33] TURN Opening Comments on ACR at 3.

[34] TURN Reply Comments on ACR at 5.

[35] ORA Opening Comments on ACR at 3.

1) California Solar Initiative Research and Development (CSI R&D);
2) Distribution Level Interconnection Rules (Rule 21); and
3) Distributed Generation (DG).[36]

In addition, ORA suggests that, "[i]t may be prudent for the Commission to consult with the CEC [California Energy Commission] to develop a workable definition of "grid integration" for the CES-21 Program that is in line with SB 96.[37] As an example, the CEC hosts the Energy Technology Systems Integration (ETSI) section, within its Energy Research and Development Division, which has a stated priority pertaining to the "successful integration and efficient operation of all the elements that encompass the California grid." [38]

As to the approved areas for research, ORA claims, "Because electricity operations and electricity resource planning [and "gas operations"] were within the original scope of the CES-21 Program in D.12-12-031 and subsequently removed in SB 96, it is reasonable to conclude that the Legislature did not intend for the Commission to reintroduce the issues by simply incorporating them into the definition of 'grid integration'."[39]

3.2.3. Discussion

As the previous summary of comments indicates, parties do not have any disagreement about what constitutes "cybersecurity" as addressed in D.12-12-031. In this decision, we agree with parties that there is no evidence that

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[36] ORA Opening Comments on ACR at 4.

[37] ORA Opening Comments on ACR at 4.

[38] ORA Opening Comments on ACR at 4.

[39] ORA Opening Comments at 3-4.

the Legislature intended to eliminate or remove the cyber security area from the scope of the CES-21 program. Further, parties agree that the Legislature did not intend to include "gas operations" and "gas safety" in any new framework. However, there are different views about what the Legislature intended in terms of an appropriate definition of "grid integration" and how this term relates to research topics "electricity operations" and "electric resource planning" that were adopted in D.12-12-031. So this unresolved issue is the focus of the discussion in this section.

As to various views, the utilities argue that the term "grid integration" should include two of the original research categories including "electric resource planning" and "electric system operations" and encompass the integration of renewable resources which is recognized as an important research area. TURN argues that "grid integration" doesn't necessarily fit into the CES-21 program because the term is not present in the evidentiary record or party briefs. Both TURN and ORA do not object to defining "grid integration" the same as "renewable integration," but ask for more specific direction and guidance based on some credible source for a definition or referral to existing or past proceedings.

It is difficult to develop a suitable definition for "grid integration" for several reasons: First, neither SB 96 nor various established energy organizations such as the Commission, California Energy Commission (CEC), Department of Energy (DOE), Energy Information Administration (EIA), Electric Power Industry "Energy Central" or Federal Energy Regulatory Commission (FERC) have any common definition for either "grid integration" or "renewable

integration."[40] Second, neither the record in this proceeding nor the Legislature has provided any definition that would provide any adequate guidance. The arguments that the parties provide are "speculative" because these various claims are merely "theories" but are not supported by actual facts. Third, no single initiative or proceeding that parties cite such as the Commission CSI R&D, Rule 21 Rules, and DG proceedings; CEC, Energy Technology Systems Integration (ETSI) proceedings, and even the California Independent System Operator (CAISO) Renewables Integration Market and Product Review (RIMPR) proceeding, can necessarily be an ultimate authority for a proposed "common definition." These initiatives are "cross cutting" and "interdisciplinary" in that they span multiple areas of the value chain (i.e. transmission, distribution, operations) and energy information "systems." Further, the landscape pertaining to "grid integration" is changing dramatically with the introduction of new innovative "smart grid" technologies that require a constantly changing vocabulary and dynamic application of technical knowledge and expertise. Fifth, in the absence of a definition, the term "grid integration" (on a par with "renewable integration") can be perceived more as a broad "goal" rather than a specific research area, per se. As such, it is a challenge to provide strict guidelines on what projects should fall within this wide net.

In the absence of a commonly accepted definition, in this decision, we accept a broad definition of "grid integration" in which it is synonymous with "renewable integration." This focus on "renewable integration" as a priority is consistent with the State's overriding policy goals and current challenges to

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[40] *See* energy industry glossaries at www.energy.ca.gov/glossary and www.ferc.gov/help/glossary.

provide safe, reliable, affordable, and environmentally sustainable electric service. In this decision, we also agree with ORA's observation that this focus is consistent with the CEC's Energy Research and Development Division priority to provide for the "successful integration and efficient operation of all elements that encompass the California grid."

Challenges with the successful "renewable integration" are well known—i.e. how to achieve renewable goals by maximizing opportunities and eliminating barriers through a modernized "smart grid." For example, as we move toward 33% RPS and replace increasing amounts of conventional generation with renewable resources, CAISO observes,

> Renewable resources operate with inherent output variability, making forecasting an important and challenging consideration. Further, renewables *integration* [emphasis added] requires additional operational capabilities, including additional ramping support and ancillary services and increased ability to manage over-generation conditions. Renewable energy also imposes new operating requirements, such as more frequent starts and stops and cycling of existing generation units.[41]

Further, in this fast changing arena, researchers must have discretion and flexibility to uncover and pursue areas of research that their initial investigations show as promising and to abandon areas that initial research suggests will not prove productive. Further, both researchers *and* operations specialists must have the capability to develop metrics and standards and other evaluation tools to

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[41] *See* CAISO Renewable Integration Market and Product Review initiative at http://www.caiso.com/informed/Pages/StakeholderProcesses/RenewablesIntegrationMarketProductReviewPhase1.aspx.

ensure that newly proposed programs are successful and cost-effective and can be adjusted as necessary.

With this broad definition of "renewable integration," projects within the areas of "electric resource planning" and "electric operations" continue to be eligible as projects within the framework of this program. As D.12-12-031 points out, "in the area of electric operations, the enhanced monitoring and control capabilities produced by a successful research projects will help integrate renewable intermittent resources that are critical to meeting California's Renewable Portfolio Standard."[42] Further, the CES-21 proceeding has demonstrated that, "the models that PG&E, SCE, and SDG&E use for electric resource planning are computationally intensive yet limited in their ability to represent the complexity of the grid."[43] So, both of these areas support "renewable integration" goals of the original CES-21 program. Further, as TURN points out, the label "grid integration" could describe integration at the utility's distribution system to meet growing amounts of Demand Response and Distributed Generation.[44]

While this definition is deliberately broad, no single project will automatically be approved by the Commission. In this decision, even more rigorous justification requirements are required for each project because projects must compete for scarce resources in terms of available monies. As SB 96 emphasizes, any proposed project must not be duplicative of other projects that the utilities, CEC, CAISO, DOE, EPRI, or other governmental or

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[42] D.12-12-031, Finding of Fact 9 at 82.

[43] D.12-12-031, Finding of Fact 6 at 82.

[44] TURN Opening Comments on ACR at 3.

quasi-governmental agencies are currently undertaking. Further, as required in D.12-12-031, Joint Utilities must develop a business case for each project that:

1) maps planned research projects to the energy system value chain;
2) allocates funds within the overall allocation to specific projects;
3) analyzes the justifications for specific projects against the goals of CES-21 listed in § 740.1;
4) reviews the project to ensure that it does not duplicate other research; and
5) assesses the projects benefits, including safety and environmental benefits and costs.[45]

As SB 96 requires, all projects must demonstrate that they lead to "technological advancement" and "potential breakthroughs" in grid integration within a specific timeframe.

3.3. Allocation of Research Costs

3.3.1. D.12-12-031 and SB 96

D.12-12-031 authorized the allocation of research costs as follows: PG&E at 55%; SCE at 35%; and SDG&E at 10%. D.12-12-031 also provides instructions regarding recovery of costs using various regulatory mechanisms.[46]

SB 96 does not address the allocation of percentages by specific utility so it is appropriate to make a determination in this decision regarding the appropriate allocation of research costs.

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[45] D.12-12-031, Finding of Fact 33 at 85.

[46] D.10-10-031, Ordering Paragraphs 3-5, at 93-94; also see CRADA Guideline Three: Implementing Advice Letters Shall Allocate and Recover Costs Consistent with the Cost and Allocation and Recovery Proposals at 56-57.

3.3.2. Parties' Position

Joint Utilities propose to continue with the original funding allocation as adopted in D.12-12-031: 55% PG&E, 35% SCE, and 10% SDG&E as stated above. "For the program as described, this remains a reasonable allocation as the historical context of the original decision and is generally close to the apportionment of electric ratepayers across the utilities."[47] Joint Utilities said these percentages should prevail even though the present CES-21 program has been realigned towards electric research and does not include any research and development directly related to gas operations or gas safety.

In contrast, TURN and ORA assert the basis for modifying the cost allocation is the recent enactment of SB 96, which excludes gas operations and gas safety research. According to TURN, "The scaling back of the CES-21 effort to exclude gas operations and gas safety issues warrants an allocation among the electric utilities consistent with the allocation adopted for the Electric Program Investment Charge (EPIC), which similarly will fund electric-only projects." Following the example set by D.12-05-037, TURN recommends a cost allocation of approximately 50% to PG&E, 41% to SCE, and 9% to SDG&E.[48]

Similarly, ORA agrees with TURN's point of view. "Because SB 96 limited the CES-21 Program's scope more narrowly to fund electricity research for the benefit of electricity customers and excluded gas operations research, it is reasonable to modify D.12-12-031 to adopt a cost allocation structure directed at electric operations."[49] ORA believes the "EPIC cost allocation percentages are

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[47] Joint Utilities Opening Comments on ACR at 4.

[48] TURN Opening Comments on ACR at 4.

[49] ORA Opening Comments on ACR at 5.

reasonable because the Commission established EPIC to fund research for the benefit of electricity ratepayers, similar to the charge now imposed on the CES-21 Program."[50]

In response to TURN and ORA's recommendation, the Joint Utilities claim that although SB 96 does exclude gas operation and gas safety activities, they do not contemplate the full effect and potential far reaching benefits of the cyber security effort. The cyber security project proposed by the Joint Utilities addresses protection of the enterprise and industrial control systems (ICS) systems from cyber threats and attacks, and with some additional work and enhancements, could also be applicable to gas ICS systems protection.[51] Therefore, Joint Utilities argue that the percentages should remain unchanged.

3.3.3. Discussion

In short, the Joint Utilities support using the same percentages in D.12-12-031 (i.e. 55% PG&E; 35% SCE; and 10% SDG&E) while TURN and ORA support using percentages consistent with the allocation adopted in the EPIC decision (i.e. 50% PG&E; 41% SCE; and 9% SDG&E.)[52] (Based on the EPIC percentages, and for purposes of comparison, PG&E would receive 5% less than it would have received in D.12-12-031 and SCE would receive 6% more. SDG&E would receive 1% less than it would have received in D.12-12-031.) PG&E believes that the percentages should remain the same since they were approved in the original decision and even though SB 96 does not specifically include gas

[50] ORA Opening Comments on ACR at 6.

[51] Joint Utilities Reply Comments on ACR at 2.

[52] D.12-05-037 at 72.

operations or gas safety. PG&E believes that with some additional effort, it could add a gas operations and safety component to gas ICS systems protection. On the other hand, TURN and ORA claim that the Legislature deliberately scaled back the CES-21 Program to more narrowly fund electric research for the benefit of electricity customers in the areas of "cyber security" and "grid integration." Therefore, using the EPIC numbers makes more sense since these numbers more closely align with how electricity load is currently allocated across the three utility regions.

In this decision, we agree with TURN and ORA that there is no basis to retain the percentages since the assumptions upon which they were original based on (e.g., inclusion of "gas operations" and "gas safety") have significantly changed. SB 96 shifts the research focus from electrical and gas service to electrical service only so this should warrant less reliance on PG&E gas related research than was previously contemplated. PG&E's argument that it can shift monies to enhance gas industrial control systems (ICS) is not persuasive. If the Legislature was interested in this enhancement, it would have directed this area of research rather than "cybersecurity" and "renewable integration," which impact all utilities according to their proportional percentage of load.

Instead, in this decision, we believe that the EPIC percentages--50% PG&E; 41% SCE; and 9% SDG&E--reasonably allocates the costs because the Commission established EPIC to fund research for the benefit of electricity ratepayers, which is similar to how charges should be imposed upon the CES-21 Program. The impact of adopting EPIC percentages, instead of previously adopted D.12-12-031, has less than a 5% impact on overall spending between PG&E and SCE which is not a huge impact within the context of reduced funding for the overall program. Based on the broad research categories

of "cybersecurity" and "grid integration," a more equitable distribution of costs should be based on load share; gas industry emphasis is not a key driver in this updated program.

3.4. Implementation of $35 Million Cap

3.4.1. D.12-12-031 and SB 96

D.12-12-031 originally granted authority to the Joint Utilities to recover costs of up to $152.19 million (including franchise fees and uncollectibles) over the five-year program.[53] The decision capped yearly expenditures at $30 million. SB 96 reduces the five-year program budget to $35 million total but does not require a yearly cap.[54]

3.4.2. Parties' Position

Given the lower spending limit and reduced number of projects as mandated by SB 96, the Joint Utilities recommend no yearly caps or restrictions that would apply to the $35 million total budget over the multi-year period. However, this could only occur "if specific projects are approved up front and the overall costs tracked and monitored to ensure the overall $35 million cap is not exceeded."[55] The Joint Utilities ask for flexibility to implement approved, complete research projects in their entirety, without piecemeal funding restrictions or annual budgets. This could result in a large expenditure over the first couple of years or a series of smaller projects over five years. "The

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[53] D.12-12-031, Ordering Paragraph 2, at 93; also see CRADA Guideline Three: Implementing Advice Letters Shall Allocate and Recover Costs Consistent with the Cost and Allocation and Recovery Proposals at 56.

[54] SB 96, Section 44(a)(2).

[55] Joint Utilities Opening Comments on ACR at 5.

Commission should not prejudge or restrict what the most beneficial timing of spending for approved R&D projects should be, as long as the overall $35 million cap is not exceeded."[56] According to the Joint Utilities, "The Commission can monitor the combined annual expenditures to ensure compliance with the $35 million cap."[57]

TURN agrees that the Commission should ensure that the expenditure of ratepayer funds does not exceed $35 million budget for the projects.[58] TURN agrees with the Joint Utilities that an initial project could forecast costs close to the $35 million cap. However, they emphasize that any subsequent proposals of projects for any remainder of the $35 million of ratepayer funding should be subject to presentation and review through a Tier 3 Advice Letter, consistent with the provisions of Ordering Paragraph 14 of D.12-12-031.[59] Consistent with the Joint Utilities' proposal, "TURN does not object to lifting the annual cap so long as the Commission has "approved" the projects prior to implementation of the projects."[60]

TURN also emphasizes that any CES-21 costs incurred to date should be counted against the $35 million ratepayer funding cap.[61] TURN contends that, "SB 96 declares that program management expenditures as set forth in the Joint Utilities' Advice Letter are to be 'voided'." To ensure compliance with this

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[56] Joint Utilities Opening Comments on ACR at 5.

[57] Joint Utilities Opening Comments on ACR at 5.

[58] TURN Opening Comments on ACR at 4.

[59] TURN Opening Comments on ACR at 4.

[60] TURN Reply Comments on ACR at 8.

[61] TURN Opening Comments on ACR at 5.

portion of SB 96, TURN believes that, "the Commission should direct the utilities to provide an accounting of expenditures and funding commitments to date, including all administrative and overhead costs, to ensure compliance with this portion of SB 96.[62]

3.4.3. Discussion

Given the reduced number of projects and level of funding for the current CES-21 Program ($35 million for a five-year period), PG&E, TURN, and ORA agree that there does not need to be an annual cap during the five-year program period. However, without an annual spending cap, then parties agree that annual expenditures need to be closely monitored through other means. TURN and ORA emphasize that any subsequent projects not listed in an original Tier 3 Advice Letter should be subject to further review and Supplemental Tier 3 Advice Letters as required by D.12-12-031.

In this decision, we agree with parties, that there is no annual program cap that will coincide with the CES-21 program cap of $30 million consistent with SB 96. However, in the absence of an annual cap, then we shall require additional measures to monitor expenditures and make adjustments as necessary. This assumes that Joint Utilities can originally request projects that span multiple years instead of only one year. To the extent that the initial Tier 3 Advice Letter does not meet the $35 million funding cap, or if funds are projected to shift 5% between project categories absent prior approval, Joint Utilities must submit Supplemental Tier 3 Advice Letters requesting appropriate authorization and funding for newly proposed projects. Joint Utilities must

[62] TURN Opening Comments on ACR at 5.

also provide an annual report detailing program expenditures as discussed in § 3.7 "Reporting Requirements."

In this decision, we agree with TURN that any CES-21 general project costs incurred to date in the areas of cyber security and grid integration, even if they are relatively small, should be counted against the $35 million ratepayer funding cap.[63] It is reasonable to apply consistent accounting rules for any foundational and/or ongoing work in these two areas. Consistent with recently adopted EPIC program guidelines,[64] it is reasonable to limit future administrative expenses to 10% of the total CES-21 budget, not including evaluation expenses. However, consistent with SB 96, any program management, administrative, or "overhead" expenditures incurred to date shall be voided. Commission authorized funds that remain unspent at the end of the five-year period shall be returned to ratepayers.

If total funding of the CES-21 five-year program is increased over the $35 million cap (including franchise fees and uncollectibles) as a result of any future approved state legislation, and if such increased funding aligns with existing requirements of D.12-12-021, and this decision, then this decision authorizes such an increase subject to all of the Ordering Paragraphs above and any other reporting requirements that Energy Division deems necessary to fulfill the requirements of this decision.

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[63] In response to a December 19, 2013 Energy Division data request, neither PG&E nor SCE has incurred any general project or program management expenditures to date on the CES-21 program. During the period March-November 2013 SDG&E spent $71,834 on general project expenses in the areas of cyber security and grid integration and $75,723 on program management and administrative expenses.

[64] D.12-05-037, Ordering Paragraph 5, at 100.

3.5. Governance Structure

3.5.1. D.12-12-031 and SB 96

D.12-12-031 specifies that CES-21 shall have a six-member Board of Directors. It shall consist of three directors chosen by each of the three utilities and three directors, chosen by the utilities, who have experience in research institutions or academic departments relevant to research proposals. Further, the Director of the Commission's Energy Division or Director's designees shall serve as a non-voting liaison to the Board of Directors.[65]

D.12-12-031 directs the six-member Board of Directors to "approve the scope of work and administration of the specific research projects funded by CES-21 and shall ensure that the work comports with the policies this [D.12-12-031] decision."[66] Further, the Board of Directors has the authority to select an executive director and staff that would manage project activities, and appoint technical and advisory committees appropriate to assist in project activities. "In addition, as proposed by the Joint Utilities, the Board of Directors will approve a strategic plan, annual budgets, and allocation of staff and other resources to provide services under individual work orders requested by each utility (or jointly) and the proportional share of funding set forth in the Proposal."[67] The Board of Directors will approve "all funding of various projects to support work orders, including procurement of equipment, facilities, tools, computer software and hardware."[68] Further, D.12-12-031 gives the Board of

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[65] D.12-12-031, Ordering Paragraphs 6, 7, and 11 at 95-96.

[66] D.12-12-031 at 67.

[67] D.12-12-031 at 67.

[68] D.12-12-031 at 67-68.

Directors broad discretion to approve any new commitments extending beyond the initial five-year term of the CRADA, or beyond authority granted in an Application.

In D.12-12-031, the governance process requires that the Board of Director meetings be open to the public and subject to "public access" in the same manner as meetings of other California public agencies.[69] The Board of Directors is responsible for conducting a public workshop in cooperation with the Commission at least 45 days prior to the filing of a Tier 3 Advice Letter to discuss proposed research and priorities and related business cases.[70]

SB 96 specifies that project managers be limited to three representatives, or one from each of the three utilities.[71] SB 96 did not specify the extent of authority or responsibilities associated with the three project managers. Nor did it address the level of "public access" or transparency to be provided in the development and review of various proposals. SB 96 specifies that program management expenditures proposed in the Joint Utilities' Advice Letter dated April 19, 2013, be voided.[72]

3.5.2. Parties' Position

Because SB 96 specifies that project managers be limited to three or one representative from each utility, the Joint Utilities believe that, "the governance structure adopted in D.12-12-031 should be modified to eliminate authorization for a Board of Directors and the functions that it would perform,

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[69] D.12-12-031 at 66.

[70] D.12-12-031, Ordering Paragraph 14 at 98.

[71] SB 96, SEC.44(4).

[72] SB 96, SEC.44(3).

including deleting Ordering Paragraphs 6, 7, and 11 in D.12-12-031."[73] The Joint Utilities note that the three overall CES-21 utility project managers, one from each IOU, would perform the functions which were previously performed by the CES-21 Board of Directors. These three CES-21 project managers would serve as members of a joint utility steering committee responsible for the administration of the CES-21 Program. "The three CES-21 project managers would coordinate with LLNL, administer the CES-21 Program and the CRADA, ensure that the CES-21 Program stays within the authorized budget, and submit a joint report summarizing the outcome of all funded projects 60 days following the conclusion of all research and development projects."[74]

In its Opening Comments, TURN points out the differences in governance structures between D.12-12-031 and SB 96. D.12-12-031 "presumes a board of six, with three non-utility representatives, whereas SB 96 calls for three 'project managers, one from each of the major electric utilities (PU Code § 740.5(c))." They also emphasize that SB 96 prohibits rate recovery of the program management expenditures set forth in the Joint Utilities' Advice Letter submitted in order to implement D.12-12-031. "In sum, TURN submits that there is virtually nothing in the governance structure adopted in D.12-12-031 that is still relevant after enactment of SB 96."[75] They urge the Commission to create a new "simple and transparent" governance structure consistent with the statute rather than modify that rejected structure.[76]

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[73] Joint Utilities Opening Comments on ACR at 6.

[74] Joint Utilities Opening Comments on ACR at 6.

[75] TURN Opening Comments on ACR at 5.

[76] TURN Opening Comments on ACR at 5.

ORA also acknowledges that SB 96 explicitly limits the CES-21 project managers to three representatives, or one representative from each utility. Therefore, it states that the Commission should modify D.12-12-031 and remove the CES-21 Program Board of Directors including the three members "who have experience in research institutes or academic departments relevant to the research proposals."[77] ORA also points out that SB 96 denied the Joint Utilities' proposed program management expenditures related to the Board of Directors identified in the Joint Utilities' April 19, 2013 Advice Letter filing.[78]

3.5.3. Discussion

All parties, including PG&E, SCE, and SDG&E agree that the six-member Board of Directors, comprised of three members from each of the utilities and three members, who have experience in research or academia, should be eliminated consistent with the major provisions of SB 96. Further, any program expenditures related to this governance structure should be eliminated. Instead, three CES-21 Project Managers, one from each of the utilities, should replace the six-member Board of Directors. What is less clear is the level of authority and responsibility of the new three-member CES-21 Project Manager body versus six-member Board of Directors. PG&E believes that the new three-member body should assume all of the functions of the Board of Directors. However, TURN, for example, believes that SB 96 "gutted" the six-member Board of Directors structure so we should "start from scratch" to figure out what a newly formed three-member body should do.

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[77] ORA Opening Comments on ACR at 6.

[78] ORA Opening Comments on ACR at 7.

In this decision, we assume that the newly-formed CES-21 three-member body will assume most of the responsibilities that the former Board of Directors would have accomplished in D.12-12-031. Accordingly, in this decision, we agree with PG&E that the three-member CES-21 Project Managers shall coordinate with LLNL, administer the CES-21 Program and the CRADA, ensure that the CES-21 Program stays within the authorized budget, and submit a joint report summarizing the outcome of all funded projects 60 days following the conclusion of all research and development projects. Further, in addition to these items that PG&E highlighted, the CES-21 Project Managers shall also submit the annual report with all of the requirements as discussed in Section 3.7 "Reporting Requirements." Second, the CES-21 project managers shall conduct publicly noticed workshops prior to Tier 3 Advice Letter Filings as discussed in this same section. The CES-21 Project Managers shall submit status reports a required by Energy Division. The CES-21 Project Managers will also assist the Joint Utilities in the filing of any Initial or Supplemental Advice Letters as directed by this decision in Ordering Paragraphs 17-18.

In this decision, we shall not direct who will rotate as Chair of the particular governance structure. Nor shall we direct whether the CES-21 Project Managers will report to a formal Advisory Committee or other management structure for internal reporting, review, and strategic direction. An external formal advisory committee structure is not necessary for the CES-21 program because it risks in appropriate delegation of authority that rests with the Commission itself. In SB 96, the Legislature provides a clear signal that elaborate and costly CES-21 governance structures are not desired.

Should coordination issues arise, then the Director of Energy Division, or the Director's designees shall serve as a non-voting liaison to the CES-21 Project Managers and help resolve any issues that may arise.

The Joint Utilities may incur CES-21 funds for costs in connection with utility personnel working in-house in collaboration with a CES-21 funded contractor. However, the Joint Utilities must track CES-21 funds spent for in-house activities and separately report them in their CES-21 annual reports the dollars spent for in-house activities from amounts paid for project work and administrative activities. At the early stages of this program, it is difficult to ascertain what should be spent on future administrative activities. As a general rule of thumb, it should not be excessive or exceed what is spent on administration for other similar programs, such as the current energy efficiency, CSI, SGIP, and EPIC programs, which currently have a 10% cap on administrative expenses versus total expenses, not including evaluation expenses. In this decision we shall adopt this same 10% cap on administrative expenses.

CES-21 funds shall not be used for in-house activities where the utility is conducting all the work using its own staff and facilities. That being said, we doubt that this is the case due to the unique modeling capability and expertise that LLNL provides.

Consistent with SB 96, any program management expenditures filed by the Joint Utility Advice Letter on April 19, 2013 shall be voided.

3.6. Commission Oversight

3.6.1. D.12-12-031 and SB 96

D.12-12-031 points out that, "California state law has supported Commission approval and oversight for many years."[79] D.12-12-031 cites numerous statutory authorities in support of its decision to adopt the CES-21 Program including: 1) Section 701, which gives the Commission "broad authority to supervise and regulate" public utilities; and 2) Section 451 which requires the Commission to ensure charges are just and reasonable. D.12-12-031 also cites Section 740 which provides guidance to the Commission in evaluating the research, development, and demonstration programs provided by utilities. Historically, the Commission has authorized and overseen various research, development, and demonstration projects through various programs including the CEC's Public Interest Energy Research (PIER) Program, and EPRI programs.

Further, General Order 96-B provides the Commission the authority to require a "Tier 3" Advice Letter review which requires full scrutiny of the Commission on matters of high importance that go beyond a more routine "ministerial" review. D.12-12-031 requires utilities to file Tier 3 Advice Letters with proposed research projects for the upcoming year.[80]

As D.12-12-031 concludes, "The review of the Commission's statutory authority and current policies makes it clear that the Commission has authority to fund RD&D projects."[81] Parties have not challenged this authority. SB 96 doesn't limit the *authority* of the Commission to approve programs such as

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[79] D.12-12-031 at 10-19.

[80] D.12-12-031, Ordering Paragraph 14 at 98.

[81] D.12-12-031 at 30.

CES-21. The Commission's authority was already discussed in D.12-12-031, and we do not revisit that issue in this decision. Rather, SB 96 limits the implementation of Commission D.12-12-031.[82] As stated previously, SB 96 restricts the types of projects to "cyber security" and "grid integration," limits the total budget, streamlines the governance structure, and adopts reporting requirements that ensure program objectives are met in a timely fashion.

3.6.2. Parties' Position

In response to a question about whether the new governance or "project management" structure precludes project oversight from the Commission, Joint Utilities claim:

> Neither SB 96 nor this proposed revised governance structure requirement in any way affect or preclude the Commission's authority to oversee, monitor, audit, and regulate the utilities expenditures and activities under the CES-21 program. Nothing in SB 96 alters the express authority of the Commission over CES-21 included previously in D.12-12-031. The Joint Utilities plan to file a supplemental advice letter seeking approval for the CES-21 research and development projects.
>
> Additionally, the Joint Utilities will submit an annual report to the Commission on the administration and results of the CES-21 Program. In addition, the Joint Utilities will hold periodic briefings and will consult with Commission staff and other interested parties and California R&D stakeholders and policymakers.

[82] SB 96, SEC.44(a).

> In accordance with Public Utilities Code Section 740.5(e)(2), the Joint Utilities will submit a report summarizing the outcome of all CES-21 projects within 60 days following the conclusion of the projects. The Commission then will determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient, submit the report to the Legislature in compliance with Section 9795 of the Government Code, as required by Section 740.5(e)(2).[83]

In response to the same question above, TURN states that it does not understand the logic because "there will still be a need for ongoing project oversight from the Commission, as the utilities will still be in a position to spend up to $35 million of ratepayer funds on projects that may not yet be designed or certainly have not yet been approved by the Commission."[84] TURN points out that the advice letter Process including projects, timeline, and budgets, and annual reports on administration and results will ensure compliance with SB 96. ORA agrees and states "Nothing in SB 96 precludes the Commission from exercising oversight of the CES-21 Program projects."[85] ORA reminds parties that SB 96 requires that CES-21 is not funding projects that duplicate research being done by other private and governmental entities.[86]

Further, TURN observes that the Joint Utilities describe a process that will provide a supplemental advice letter seeking approval of the CES-21 projects consistent with the restrictions in SB 96, in addition to an annual report on the administration and results of the CES-21 program. TURN believes that, "the

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[83] Joint Utilities Opening Comments on ACR at 6-7.

[84] TURN Opening Comments on ACR at 5-6.

[85] ORA Opening Comments on ACR at 7.

[86] ORA Opening Comments on ACR at 7.

Commission should direct the supplemental advice letter to be drafted as a replacement to the entirety of the pending advice letter to avoid the same challenges of cross-referencing two very different documents that warrant replacing rather than modifying D.12-12-031."[87]

3.6.3. Discussion

In this decision, we agree with parties that there is nothing that precludes Commission oversight of the various components of the CES-21 program including scope, cost, schedule, and associated deliverables. As detailed in D.12-12-031, there are many statutory authorities that verify this important monitoring function of the Commission. As stated in Section 3.1, the necessary modification of D.12-12-031 pertains not to foundational jurisdiction issues, but rather, to implementation details of the CES-21 program that emphasize a clear scope, streamlined management, and careful ongoing oversight of the program. This oversight function is realized through careful authorization of projects and funding at the beginning of the program, and enhanced measurement and evaluation activities during and at the end of the program. In this decision, we support ongoing tools that will aid high level Commission oversight of the program including rigorous and mandatory application and ongoing reporting requirements as detailed in the following Section.

3.7. Reporting Requirements

3.7.1. D.12-12-031 and SB 96

We first summarize the differences between D.12-12-031 and SB 96.

[87] TURN Reply Comments on ACR at 9.

3.7.1.1. D.12-12-031

D.12-12-031 provides specific guidance regarding reporting requirements that include an initial Tier 3 Advice Letter filing, annual advice letters listing proposed projects, supplemental Tier three advice letters, and annual reports.[88]

As to an initial Tier 3 Advice Letter, within 90 days of the adoption of D.12-12-031, Joint Utilities shall file the CRADA along with the proposed implementation plan and first year projects. The Commission will then review this filing to ensure its consistency with policy requirements and other detail enumerated in Ordering Paragraph 10 pertaining to CRADA research guidelines and 12 pertaining to what is contained in annual advice letters, including appropriate scope, budget, and detailed business cases.[89]

As to annual advice letters, Joint Utilities shall submit annual advice letters that demonstrate adherence to approved topic areas (i.e. electric system operations, electric resource planning, gas system operations, and cybersecurity), that the total spent in a specific year would not exceed $30 million; that there is a positive business case for each proposed project based on specific criteria; that the research projects do not duplicate other research funded by California utilities, the CEC, the EPRI, or the United States Department of Energy; that each proposed project has the approval of the majority of the Board of Directors of the CES-21 research project; and that in the event a research proposal is not funded by all research participants, that the advice letter should include a full explanation for consideration by the Commission.[90]

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[88] D.12-12-031, Ordering Paragraphs 12 and 14 at 96-98.

[89] D.12-12-031, Ordering Paragraphs 9-12 at 96-97.

[90] D.12-12-031, Ordering Paragraph 12 at 96-98.

As to Tier 3 Advice Letters, the Joint Utilities shall file proposed research projects and budget for the upcoming year. With the exception of the first year, the advice letter shall be filed a minimum of 120 days prior to the expected start of any particular program year. The Board of Directors shall hold a public workshop including the Commission at least 45 days in advance of the filing, to discuss the proposed research and priorities and review the business case for the proposed research. The intent of the Tier 3 Advice Letter is to ensure its consistency with the policy requirements adopted in the decision. This includes adherence to annual advice letter guidelines as discussed above, and adherence to overall CRADA guidelines in D.12-12-031 Ordering Paragraphs 10.[91]

As to annual reports, the Board of Directors shall submit an annual report to the Executive Director of the Commission that provides information on the activities of the project, including the projects funded, the outcomes of the research, the extent of involvement of academics and other third parties, and the intellectual property that results from the research.[92]

3.7.1.2. SB 96

SB does not direct the filing of annual advice letter or Tier 3 Advice Letters. However, according to SB 96, the Joint Utilities must prepare and submit a joint report (Joint Utility Report) to the Commission by December 1, 2013 that covers the scope of the proposed research projects, how the proposed project may lead to technological advancement and potential breakthroughs in cyber security and grid integration, and the expected timelines for concluding the projects. Within

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[91] D.12-12-031, Ordering Paragraph 14 at 98.

[92] D.12-12-031, Ordering Paragraph 15 at 98-99.

30 days of receiving the joint report, the Commission must determine whether the report is sufficient or requires revision. Upon determining if the report is sufficient, the Commission would send the report to the Legislature in compliance with Section 9795 of the Government Code.[93]

The Joint Utilities must also prepare and submit a similar report (Joint Utility Outcome Report) within 60 days of the conclusion of the CES-21 Program that summarizes the outcome of all funded projects, including an accounting of project expenditures and overhead costs, and progress towards goals. Upon receiving the joint reports, SB 96 orders the Commission to "determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient submit the report to the Legislature."[94]

3.7.2. Parties' Position

The Joint Utilities believe that the Commission should incorporate the SB 96 requirement, as referenced above, into a revised decision that would be adopted in this proceeding. In addition, the Joint Utilities believe that an annual advice letter, as required by D.12-12-031, should be eliminated, because the Joint Utilities only plan to propose a single cyber security project and a single grid integration project that span multiple years. If Joint Utilities desire additional projects beyond the initial cyber security and grid integration projects, then additional advice letters should be required. Joint utilities may issue additional reports and informally consult with Commission staff and stakeholders, as well

[93] SB 96, SEC.45(e)(1).

[94] SB 96, SEC.45(e)(2).

as providing the joint report on the outcome of completed CES-21 projects as required by Public Utilities Code Section 740.5(e).[95]

As to the SB 96 mandated utility-prepared report submitted to the Commission by December 1, 2013, TURN submits that, "it would appear that the statutorily-described report has at least effectively (if not intentionally) preempted the Joint Utilities' advice letter, and the Commission should suspend review or implementation of that advice letter in favor of focusing on the statutory report described in § 740.5(e)(1)."[96] TURN also believes that the Commission should provide interested parties an opportunity to comment on the utility-provided report consistent with the opportunity available for a Tier 3 Advice Letter.[97]

TURN agrees with the Joint Utilities that the Tier 3 Advice Letter process should be retained as specified in Ordering Paragraph 12 of D.12-12-031. It should be used if the Joint Utilities seek an opportunity for submission and potential revision of any later-proposed projects that fall below the $35 million dollar ceiling.[98] If the initial advice letter results in using all of the budgeted funds, then TURN believes that the annual advice letter could be eliminated subject to certain conditions pointed out by ORA.[99] TURN also believes that, "the Commission should amend the post-project reporting set forth in

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[95] Joint Utilities Opening Comments on ACR at 7.

[96] TURN Opening Comments on ACR at 6.

[97] TURN Opening Comments on ACR at 6.

[98] TURN Opening Comments on ACR at 6-7.

[99] TURN Reply Comments on ACR at 10; TURN's initial comments stated that annual advice letters would be required at least during the first several years of the multi-year funding period. *See* footnote 23 in TURN's Reply Comments on ACR at 10.

D.12-12-031 to ensure that the annual reports provide the type of information that will satisfy the statutory post-project reporting requirement.[100] Formats of existing advice letters or reports should be changed as necessary to comply with the new statutory language and achieve the appropriate level of monitoring and oversight of ratepayer funds."[101]

According to TURN, ORA indicates, "that it would not object to eliminating the annual advice letter filings required for project review and funding approval so long as the initial Tier 3 Advice Letter meets the requirements of D.12-12-031 as modified by SB 96, and subject to a 5% fund shifting cap absent prior approval."[102] If projects proposed in the initial advice letter would result in committing the full amount of available ratepayer funding, TURN agrees with the elimination of the annual advice letter filings for project review and approval, subject to the conditions proposed by ORA.[103]

Unlike other parties, TURN urges the Commission to reject the annual report template set forth as Appendix B to the Joint Utilities comments.[104] They argue that the Joint Utilities do not explain the "reasonableness" of the proposed template or even refer to it. "TURN submits that it is deficient on its face."[105] TURN believes that the template should provide a fuller description of project activities and provide a "lessons learned" evaluation pertaining to each project.

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[100] TURN Opening Comments on ACR at 7.

[101] TURN Opening Comments on ACR at 7.

[102] TURN Reply Comments on ACR at 10.

[103] TURN Reply Comments on ACR at 10.

[104] TURN Reply Comments on ACR at 10.

[105] TURN Reply Comments on ACR at 10.

ORA urges the Commission to distinguish the distinct purposes of the joints reports pursuant to § 740.5(e) and the Tier 3 Advice Letter compliance filings ordered in Ordering Paragraph 8 of D.12-12-031. "Whereas the joint reports provide legislative oversight of the CES-21 Program, the Tier 3 Advice Letter filings are still requisite for CES-21 funding authorization under D.12-12-031 because the Commission is still required to approve all proposed projects and budgets."[106] It is important to retain the Tier 3 Advice Letter because it affords the only opportunity for the Commission to review and oversee actual proposals. Further, it provides an opportunity for interested parties to voice concerns about specific project proposals.

Consistent with Ordering Paragraphs 9-12 of D.12-12-031, ORA recommends that the Commission preserve the requirement that the Joint Utilities file an initial Tier 3 Advice Letter that includes the following four elements: 1) CRADA; 2) proposed budget; 3) proposed implementation plans; and 3) proposed projects and business cases.[107]

Assuming the Tier 3 Advice Letter process is consistent with D.12-12-031 as modified by SB 96, and in consideration of the reduced scope and budget of projects, ORA does not object to eliminating the annual advice letter filings currently required.[108] However, if the Joint Utilities wish to add projects or amend existing CES-21 Commission-approved projects within the framework of the existing budget, then the Joint Utilities should file additional Tier 3 Advice Letters. ORA does not support any attempt to "nullify" the Commission's

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[106] ORA Opening Comments on ACR at 9.

[107] ORA Opening Comments on ACR at 9-10.

[108] ORA Opening Comments on ACR at 10.

approval of the Tier 3 Advice Letter. For this reason, it is reluctant to approve "wholesale changes" to the program and recommends that "the Commission authorize the Joint Utilities to shift only up to 5% of funds without additional approval."[109] They point out that this recommendation is consistent with the EPIC program guidelines.[110] As to the annual reports, ORA supports the continuance of these so that the Commission can review CES-21 program progress and ensure that program adheres to applicable decisions and statutes.

3.7.3. Discussion

In this decision, we adopt the two SB 96 mandatory "Joint Utility Report" and "Joint Utility Outcome Report" as listed above under "Reporting Requirements, SB 96." However, in this decision, we adopt a new timing requirement for the first joint report that was due December 1, 2013, and which, upon receipt by this Commission, was subsequently rejected without prejudice until such time that the Commission would provide further direction regarding its resubmission. Our objectives here include: 1) adherence to SB 96 and original D.12-12-031 reporting requirements to the fullest extent possible or appropriate; 2) streamlined process that eliminates unnecessary paperwork, 3) clear Commissioner role in authorization of funding of original projects and in ongoing oversight consistent with its statutory authority; 4) flexibility to allow mid-course adjustments throughout the duration of the program; 5) transparency and due process that ensures meaningful stakeholder participation; and 6) meaningful Energy Division staff involvement in ongoing

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[109] ORA Opening Comments on ACR at 10.

[110] D.12-05-037 at 68.

implementation of the program over time. In this decision, we agree with ORA that the distinct purposes of the Tier 3 Advice Letter filings and various reports should be clear.

Toward this end, in this decision, we retain the initial Tier 3 Advice Letter filing in which the Joint Utilities shall file a revised CRADA according to revised CRADA guidelines (see Section 4, "Summary of CRADA Guidelines"), along with the proposed implementation plan and multi-year projects. The purpose of this filing is to provide the Commission an opportunity to authorize projects and their funding and provide an opportunity for parties to voice concerns about proposed projects. With reduced funding for the CES-21 program, we now allow multi-year projects because this will enable Joint Utilities to submit fewer projects that span multiple years. Because much preliminary work has already been accomplished on justification of these initiatives, we also ask for expedited Joint Utility filing of this Tier 3 Advice Letter (along with the resubmitted SB 96, "Joint Utility Project Proposal"). We therefore require Joint Utilities to submit the initial filings within 30 days, rather than 90 days, of the issuance of this decision. For this initial filing, a workshop is waived because parties will have an opportunity to file protests or responses to initial Advice Letter filings.

Consistent with the stated objectives above, parties to the proceeding will have an opportunity to formally comment on the initial Joint Utility Tier 3 Advice Letter filing including business cases and "Joint Utility Report." Within the 30-day comment period, the Energy Division Director, or designees, shall communicate with the Legislature about feedback from stakeholders and staff, and determine whether the report is sufficient or requires revision, and upon determining that the report is adequate, report to the Legislature in compliance with Section 9795 of the Government Code. Final resolution of any

issues via a Commission decision could take longer than 30 days depending on the extent of changes required.

In this decision, we agree with Joint Utilities, ORA, and TURN that it is no longer necessary to provide an annual Tier 3 Advice Letter filing because the scope and funding of the original program is vastly reduced, and much of the required information will already be provided in the initial Tier 3 filing and/or can be added to any subsequent Tier 3 Advice Letter filing. Accordingly, in this decision, the initial filing will also include business case analysis as detailed in Ordering Paragraph 12 of D.12-12-031. In this decision, we agree with parties that if the annual Tier 3 advice letter is eliminated, then this is subject to conditions. Supplemental Tier 3 Advice Letters shall be required to either justify new cases or amend existing cases if there are remaining monies to be spent against the $35 million budget cap and/or if there is more than a 5% spending shift proposed between categories absent prior approval. As part of the supplemental advice letter process, the Project Managers, in cooperation with Energy Division, shall hold a publicly noticed workshop including the Commission at least 45 days in advance of the filing to discuss the proposed research priorities and to review the business case for each proposed research.

In this decision, in the absence of annual advice letter filings, we agree with TURN and ORA that Joint Utility Project Managers should submit annual reports by March 31st of every year so that the Commission and Legislature can review and monitor CES-21 program progress and ensure that the decision adheres to SB 96, this decision, and other applicable decisions and statutes. As D.12-12-031 directs, this annual report shall provide information on the operations of the project, including projects funded, the results of the research, the efforts made to involve academics and other third parties, and the intellectual

property that results from the research. Joint utilities offered a proposed annual report template in their Opening Comments, but it appears incomplete. Therefore, in this decision, we require Joint Utilities to use Appendix B and C as appropriate guides to fill out report templates. Joint Utilities shall also provide project progress reports as required by Energy Division staff.

4. Summary of CRADA Guidelines

4.1. D.12-12-031

4.1.1. D.12-12-031

According to D.12-12-031, the CRADA must be consistent with the following guidelines:

1. The CRADA must restrict research to four promising areas that are inherently related to the research goals identified in § 740.1: Gas Operations, Electric Operations, Electric Resource Planning, and Cyber security.
2. The CRADA must limit total yearly expenditures to $30 million and total expenditures to $150 million.
3. The Advice Letter seeking approval of the CRADA shall allocate costs with PG&E responsible for 55% of the costs, SCE responsible for 35% of the costs, and SDG&E responsible for 10% of the costs. These utilities may recover these costs using the regulatory mechanisms adopted in this decision.
4. The CRADA must agree that all research projects conducted under this proposal must meet the specific criteria adopted in this decision.
5. The CRADA should propose a Board of Directors of with six members, with three members chosen one each from the participating utilities and three members chosen by

the utilities with relevant research backgrounds in either academia or research institutes.[111]

According to D.12-12-031, the research projects performed under the CRADA must meet the following criteria:

1. The total research expenditures in a given year must not exceed $30 million.
2. Each research project should demonstrate that it falls within the four approved areas.
3. Each research proposal must have the support of a majority of the Board of Directors and must provide an explanation if a proposed project will not be funded by all utilities.
4. Each proposed research project shall also include a "business case" analysis, as described in the application, and which, among other things, shall show that projected benefits exceed projected costs and that the research is not duplicative.[112]

4.2. SB 96 and Modified D.12-12-031

As discussed in the previous section and pertinent discussions, in this decision, we modify CRADA as follows:

CRADA must be consistent with the following guidelines:

1. According to SB 96, the CRADA must restrict research to two promising areas that are inherently related to the research goals identified in SB 96: Cyber security and grid integration.
2. According to SB 96, the CRADA must limit total expenditures to $35 million over a five-year period.

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[111] D.12-12-031 at 4-5.

[112] D.12-12-031 at 5.

There is no annual spending cap. All projects shall be concluded by the fifth anniversary of their start date.

3. The Advice Letter seeking approval of the CRADA shall allocate costs with PG&E responsible for 50% of the costs, SCE responsible for 41% of the costs, and SDG&E responsible for 9% of the costs. These utilities may recover these costs using the regulatory mechanisms adopted in this decision.
4. The CRADA must agree that all research projects conducted under this proposal must meet the specific criteria adopted in this decision.
5. According to SB 96, project managers for the CES-21 program shall be limited to three representatives, one representative each from Pacific Gas and Electric, Southern California Edison, and San Diego Gas and Electric Company. Members of the board from academia or research institutes are eliminated.
6. The CES-21 program will utilize tap outside expertise and knowledge as necessary to meet program requirements within the limits established by this decision.

In addition, SB 96 requires that the Commission shall not approve for recovery from ratepayers proposed program management expenditures associated with administration of the programs contained in the joint advice letter provided by utilities on April 19, 2013.

Research projects performed under the CRADA must meet the following criteria:

1. The total research expenditures for the five-year program period must not exceed $35 million. Any shifting of 5% of more between categories requires prior Commission approval.
2. Each research project should demonstrate that it falls within the two approved areas of cyber security and grid integration.

3. Research Proposals must have the support of all three Utilities and provide an explanation if not funded by all utilities.
4. CES-21 Project Managers shall coordinate with LLNL, administer the CES-21 Program and the CRADA, ensure that the CES-21 Program stays within the authorized budget, submit joint annual reports by March 31st of each year and joint report summarizing the outcome of all funded projects 60 days following the conclusion of all research and development projects, and conduct workshops prior to Tier 3 Advice Letter supplemental filings.
5. Each proposed research project shall also include a "business case" analysis, which, among other things, shall show that projected benefits exceed projected costs and that the research is not duplicative.

5. Categorization and Need for Hearing

Resolution ALJ-3278 (July 28, 2011) categorized the proceeding as ratesetting and reached a preliminary determination that hearings would prove necessary to resolve initial issues. Evidentiary hearings were conducted in the early stages of this proceeding before the issuance of an initial decision D.12-12-031 issued December 28, 2012. The purpose of this decision is to enact SB 96 which requires modifying D.12-12-031 and issuing a new decision pertaining to implementation details of the 21st Century Energy Systems Program.

6. Comments on Proposed Decision

The proposed decision of the ALJ in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on March 13, 2014 by PG&E, SDG&E, and SCE; and TURN. Reply comments were filed on March 18, 2014 by ORA.

This decision has been revised as necessary, in response to comments. Among others, we have made the following clarifications and substantive revisions in this decision:

1) In Conclusions of Law 2, cites the correct authority under Section 1708 of the Public Utilities Code which allows the Commission to reopen the proceeding to address implementation issues in the decision; broad foundational policy and legal questions already addressed in D.12-12-031 remain intact.
2) In Ordering Paragraph 5, clarifies that any unspent funds shall be returned to PG&E, SCE, and SDG&E ratepayers in the same proportion as the collection of funds.
3) In Ordering Paragraphs 6-8, carries forward the language from Ordering Paragraphs 3-5 in D.12-12-031 pertaining to allocation of costs associated with research on generation using generation-based allocation factors.
4) In Ordering Paragraph 19, authorizes the CES-21 five-year program to begin *immediately* after Commission approval of the initial Tier 3 Advice Letter (AL) filing rather than 30 days after Commission approval of the AL; an earlier beginning date of CES-21 program allows earlier development of capabilities needed to protect critical infrastructure against potential cyber-attacks.
5) In Ordering Paragraph 21, moves the date of the required Joint Utility Annual Report from December 31st of each year to March 31st of each year; modifying the date will enable the utilities to provide complete information because it will ensure an entire year's costs are reflected.
6) Adds a new Ordering Paragraph 22 which states:

   If total funding of the 21st Century Energy Systems five-year program is increased over the $35 million (including franchise fees and uncollectibles) as a result of any future approved state legislation, and if such increased funding aligns with existing requirements of D.12-12-021 and this decision, then this decision

> authorizes such an increase subject to all of the Ordering Paragraphs above and any other reporting requirements that Energy Division deems necessary to fulfill the requirements of this decision.

7. Assignment of Proceeding

Michael R. Peevey is the assigned Commissioner and Colette Kersten is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. This proceeding commenced on July 18, 2011.

2. D.12-05-037, which set procedures for the review of proposed research development and demonstration projects, was issued on May 31, 2012.

3. The CES-21 Project's objective is to apply computationally-based problem solving resources to the emerging challenges of the CES-21 of electrical and natural gas for California.

4. D.12-12-031 granted authority to Joint Utilities to enter into a research and development agreement with Lawrence Livermore Laboratory for CES-21 and for costs up to $152.19 million (including "franchise fees" and "uncollectibles") over a five-year period in the areas of gas system operations, electric system operations, electric resource planning, and cyber security.

5. SB 96 directed the Commission to limit the implementation of D.12-12-031 by reducing the five-year $152.12 million budget to $35 million, restricting research projects to "cyber security" and "grid integration" only, reducing a governing body from six members to three members (one each from PG&E, SCE, and SDG&E), and directing specific reporting requirements to ensure program objectives are met.

6. Given the new requirements, it was appropriate to reopen the proceeding and solicit feedback from parties as to how parties should revise D.12-12-031.

7. Accordingly, the assigned Commissioner and ALJ issued a Scoping Ruling on October 24, 2013, amending the scoping of the proceeding to accommodate new issues and permit resolution of them by April 21, 2015.

8. As a consequence of SB 96 and October 24, 2013 Scoping Memo, Energy Division rejected Joint Advice Letters filed by PG&E (AL 3379-G/4215-E), SCE (AL 2887-E), and SDG&E (AL 2473-E) dated April 19, 2013.

9. As a consequence of SB 96 and October 24, 2013 Scoping Memo, Energy Division also rejected without prejudice an Annual Report filed by PG&E, SCE, and SDG&E dated November 27, 2013.

10. SB 96 addresses various policy, programmatic, and governance implementation issues pertaining to D.12-12-031 so it is not necessary to revisit broad foundational policy and legal issues related to D.12-12-031.

11. No parties have different views about what constitutes "cyber security" as addressed in D.12-12-031 and SB 96.

12. Parties have different views about an appropriate definition for "grid integration" and how this relates to proposed research topics "electricity operations" and "electric resource planning."

13. There is no known established definition of "grid integration" in SB 96 or in established energy glossaries and related proceedings; the term "grid integration" is not present in the evidentiary record or party briefs in D.12-12-031.

14. Parties do not object to defining "grid integration" the same as "renewable integration" as long as more guidance is provided regarding its definition and application in this decision.

15. The term "renewable integration" is cross-cutting and interdisciplinary, and spans multiple area of the value chain (e.g., transmission, distribution,

operations); as such, it is highly impractical to derive a narrow definition in a rapidly changing industry and technological environment.

16. Challenges with achieving successful "renewable integration" are well known and is interwoven with the state's overriding policy goals.

17. A broad definition of "grid integration" on a par with "renewable integration" provides the Commission flexibility to adopt areas of research that show promise and to abandon areas that will not be productive.

18. Researchers and operations specialists must have the capability to develop metrics and standards and other evaluation tools to ensure that newly proposed programs are successful and cost-effective.

19. While the definition of "renewable integration" is broad, rigorous justification requirements are still required for each proposed research project; for example, proposed projects must not be duplicative of other projects that the utilities, CEC, CAISO, and EPRI are conducting.

20. Joint utilities support using the same percentages in D.12-12-031 (i.e. 55% PG&E; 35% SCE; and 10% SDG&E) while TURN and ORA support using percentages consistent with the allocation adopted in the EPIC decision (i.e. 50% PG&E; 41% SCE; and 9% SDG&E).

21. There is no basis to retain the percentages in D.12-12-031 since the assumptions upon which they were originally based (e.g., inclusion of "gas operations" and "gas safety") have changed dramatically.

22. SB 96 shifts the research focus from electrical and gas service to electrical service only so this should warrant less reliance on PG&E gas related research than was previously authorized.

23. Using the EPIC percentages—50% PG&E; 41% SCE; and 9% SDG&E—reasonably allocates the costs of "cyber security" and "grid integration" based on utility load share.

24. Given the reduced number of projects and level of funding for the CES-21 Program, parties agree that there does not need to be an annual cap during the five-year program.

25. Without an annual spending cap, annual expenditures need to be closely monitored through other means.

26. It is prudent to develop a business case for each particular research project that: 1) maps planned research projects to the energy system value chain, 2) allocates funds from within the overall allocation to specific projects, 3) analyzes the justifications for specific projects against the goals for CES-21 listed in § 740.1, 4) reviews the project to ensure that it does not duplicate other research, and 5) assesses the project's benefits, including safety and environmental benefits, and its costs.

27. It is reasonable to require that the Project Managers of the CES-21 review and approve a business case for each particular business project.

28. It is reasonable to require that the CES-21 Project Managers hold a public workshop with the Commission at least 45 days in advance of the filing of a supplemental Tier 3 Advice Letter seeking approval of the each research project to review research priorities and the business case for each of the proposed research projects.

29. It is reasonable to require that the Joint Utilities submit an initial Tier 3 Advice Letter filing seeking approval for the CRADA and for each research project. The advice letter should include the business case justification for each project.

30. Consistent with SB 96, and in parallel with the initial Tier 3 Advice Letter, it is reasonable to require the Joint Applicants to submit a "Joint Utility Report" on the scope of all projects, how the proposed project may lead to technological breakthroughs in cyber security and grid integration, and the expected timelines for concluding the projects.

31. It is reasonable to waive a workshop prior to this initial Tier 3 Advice Letter filing and "Joint Utility Report" because formal stakeholder comments will allow any concerns to be publicly aired and considered before the Commissions approves any investment plan.

32. It is reasonable to have a Tier 3 Advice Letter review process because of the importance of the research proposed in the CES-21 for California. A Tier 3 review ensures consideration of a resolution by the full Commission at a public meeting.

33. It is reasonable to require the advice letter to assess the net present value of the costs and projected benefits of a proposed research project following standard procedures used by the Commission, such as those used to calculate a Market Price Referent.

34. It is reasonable to require that the advice letter seeking approval of a specific research project demonstrate that it is not duplicative of existing research by reviewing research conducted by California utilities, CEC, CAISO, EPRI, and the Department of Energy.

35. It is reasonable to allow the Joint Utilities to shift up to 5% of the budget for each category of expenses approved in an original project plan to the other authorized category; any proposed shift above this amount requires prior Commission approval.

36. It is reasonable that the advice letter seeking approval of a specific research project demonstrate that it has the support of the Joint Utilities and/or CES-21 Project Managers.

37. It is reasonable to require that, if an advice letter proposes a research project that is not funded by all three utilities, it must include an explanation.

38. The requirements that limit research to two productive areas and order the Project Managers to review the business case for each project and to provide an annual report to the Commission will ensure that all projects funded by the CES-21 program are consistent with the research guidelines set forth in § 740.1.

39. The requirement that the annual report provided to the Executive Director of the Commission by the CES-21 Project Managers provide information on the costs of research, the results of research, the participation of individuals outside of LLNL and the three utilities, and intellectual property that results from the research is reasonable and in the public interest.

40. Given the reduced scope and budgets for the CES-21 program, it is reasonable to eliminate annual advice letter filings concerning proposed research that would enable the Commission to ensure that research is limited to the two productive areas approved by the Commission and to ensure that each research has a positive business case.

41. In lieu of annual advice letter filings, it is reasonable to require supplemental Tier 3 Advice Letter filings if additional projects within the $35 million cap are recommended beyond any initial advice letter filings and if Joint Utilities seek to shift more than 5% between categories absent prior approval.

42. Parties agree that the six-member Board of Directors, comprised of three members from each of the utilities and three members who have experience

in research or academia, should be eliminated consistent with the major provisions of SB 96.

43. Consistent with SB 96, it is reasonable to replace the six-member Board of Directors with three CES-21 Project Managers, one chosen by each of PG&E, SCE, and SDG&E.

44. A formal advisory committee structure is not necessary for the CES-21 program because it risks inappropriate delegation of authority that rests with the Commission itself.

45. It is reasonable that the three CES-21 Project Managers shall coordinate with LLNL, administer the LLNL Program and CRADA, ensure that the CES-21 Program stays within authorized budget, and submit reports as required by SB 96 and this decision.

46. The Legislature has provided a clear signal that it does not support an elaborate or costly governance structure.

47. Consistent with SB 96, it is reasonable to void CES-21 program management or administrative expenses incurred to date by PG&E, SCE, and SDG&E. However, for the sake of consistent accounting, it is reasonable that any project costs incurred to date, in the areas of cyber security and grid integration, should count toward the $35 million cap.

48. Consistent with other Commission Energy Division programs, it is reasonable to limit administrative expenses to 10% of the total overall $35 million budget, not including evaluation expenses.

49. It is reasonable for the Director of Energy Division, or the designee of the Director, to serve as a liaison to the CES-21 Project Managers. The Director of the Energy Division can provide input in advance of advice letter filings concerning the information that the Commission needs to review in an advice letter.

50. It is reasonable to limit the duration of the CES-21 program to five years and allow projects that span multiple years.

51. It is reasonable to limit the overall expenditures on the CES-21 program to $35 million over five years (including "franchise fees" and "uncollectibles").

52. It is reasonable that PG&E allocate 100% of its costs to electric distribution and recover these costs through the Distribution Revenue Adjustment Mechanism. It is reasonable to allow PG&E to collect its annual revenue requirement and be permitted to modify cost recovery on an annual basis to true up for its actual share of expenses. It is reasonable that PG&E be authorized to open an electric balancing account to record the difference between its share of the program expenses and its annual revenue requirement.

53. It is reasonable for SCE to collect its allocated costs for CES-21 through its electric distribution rates using the same authorized rate recovery mechanism and structure of other program-related costs currently recovered through distribution rates. It is reasonable to authorize SCE to recover these costs through the Base Revenue Requirement Balancing Account and subsequently recover these costs.

54. It is reasonable for SDG&E to collect its annual revenue requirement through its electric distribution rates using the same authorized rate recovery mechanism and structure of other program-related costs currently recovered through distribution rates. It is reasonable for SDG&E to be permitted to modify the cost recovery on an annual basis to true-up its actual share of program expenses. It is reasonable that the ultimate disposition of this account shall be addressed at SDG&E's annual Electric Regulatory Account Balance Update filing or other applicable proceeding, to be collected from distribution customers.

55. This decision sets the policies to guide the drafting of the CRADA and the selection of research projects to include in a Tier 3 Advice Letter seeking approval of a specific CRADA and research projects.

56. The approval of the CES-21 project, as modified, promotes one of the cornerstones of California's energy policy, that of continuing ratepayer-funded research and development that ensures the continued safe, reliable, affordable, and environmentally sustainable electric service.

57. The approval of the CES-21 research project is intended to pool the experience, expertise, and resources of PG&E, SCE, and SDG&E to address some of the most challenging problems facing California energy policy: 1) integrating intermittent energy from renewable resources into their supply portfolios while ensuring reliable service, 2) combating cybersecurity threats, and 3) processing unprecedented amounts of data from smart meters using LLNL's supercomputing capabilities.

58. The pooling of resources in the CES-21 research project – and ratepayer funds – of PG&E, SCE, and SDG&E maximizes the likelihood of successful R&D and is therefore consistent with state policy. Indeed, pooling IOU resources is warranted and prudent, because of both the complexity and interdependence of the electrical systems in California and the magnitude of cost to undertake the research and development to address these 21st century challenges.

59. It is state policy to promote the efficient use of ratepayer funds in research on energy issues.

60. The approval of the CES-21 project, including the coordinated efforts of PG&E, SCE, and SDG&E under a CRADA with LLNL, in consistent with state policy.

Conclusions of Law

1. SB 96 provides specific guidance to limit implementation details pertaining to D.12-12-031.

2. Pursuant to its authority under Section 1708 of the Public Utilities Code, it is reasonable to reopen this proceeding to address these implementation issues in this decision; broad foundational policy and legal questions already addressed in D.12-12-031 remain intact.

3. As a consequence of SB 96, it is reasonable that many Conclusions of Law and Ordering Paragraphs in D.12-12-031 should be modified, replaced or eliminated.

4. Since this proceeding commenced before the institution of the EPIC rulemaking, the procedures adopted in that decision for the consideration of proposed research projects in triennial EPIC proceedings do not apply to the research projects proposed in this proceeding, unless otherwise indicated in this decision.

5. The requirements adopted for the CES-21 program that limit research to cyber security and grid integration, require a the business case for each project, require a demonstration that the research is not duplicative, and require an initial or supplemental Tier 3 Advice Letter filing to ensure that all projects funded by the CES-21 program are consistent with the research guidelines set forth in § 740.1.

6. If the CRADA and the research projects conducted under the CRADA meet the guidelines and criteria set forth in this decision, then the research is in the public interest and consistent with the law.

7. If the CRADA and the research project conducted under the CRADA meet the guidelines and criteria set forth in this decision, and the costs fall within the

$35 million five-year cap, and the ratemaking follows the procedures set forth, then the resulting expenses are reasonable and cost recovery should be authorized.

8. Since this decision adopts explicit guidelines for criteria that a research proposal must meet, a Tier 3 Advice Letter process provides an appropriate mechanism for exercising Commission oversight.

O R D E R

IT IS ORDERED that:

1. The Joint Application of Pacific Gas and Electric Company, San Diego Gas & Electric Company, and Southern California Edison Company to Recover Costs of an Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems, a proposed research project, is authorized subject to the conditions set forth in Section 740.5 of the Public Utilities Code and Ordering Paragraphs below.

2. Total funding for research and development projects for the purposes of cyber security and grid integration shall not exceed $35 million (including "franchise fees" and "uncollectibles") over the five-year research period. No research and development projects, other than for purposes of cyber security and grid integration, shall be funded by ratepayers. However, any 21st Century Energy Systems project costs incurred to date by Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company, in the areas of cybersecurity and grid integration, shall count against the $35 million cap.

3. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company must file a Tier 3 Advice Letter to modify the request authority to shift more than five percent of the adopted budget for each funding category/program area.

4. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company may shift funds within a funding category/program area without limitation.

5. The 21st Century Energy Systems funds that remain unspent at the end of the five-year budget period must be returned to ratepayers. Any unspent funds shall be returned to Pacific Gas and Electric Company, Southern California Edison Company and San Diego Gas & Electric Company ratepayers in the same proportion as the collection of funds.

6. Pacific Gas and Electric Company (PG&E) shall be responsible for 50% of the costs of the 21st Century Energy Systems (CES-21) research project. PG&E is authorized to allocate 100% of these costs to electric distribution and recover these costs through the Distribution Revenue Adjustment Mechanism. PG&E shall collect its annual revenue requirement and is permitted to modify the cost recovery on an annual basis to true up its actual share of program expenses. To the extent that a CES-21 project is generation related, PG&E shall allocate the generation-related costs using generation-based allocation factors, but with the cost recovery through distribution charges. PG&E is authorized to open a balancing account to record the difference between its share of the program expenses, and its annual revenue requirement.

7. Southern California Edison Company (SCE) shall be responsible for 41% of the costs of the 21st Century Energy Systems (CES-21) research project. SCE shall collect its allocated costs for CES-21 through its electric distribution rates

using the same authorized rate recovery mechanism and structure of other program-related costs currently recovered through distribution rates. To the extent that a CES-21 project is generation-related, SCE shall allocate the generation-related costs using generation-based allocation factors, but with the cost recovery through distribution charges. SCE is authorized to recover these costs through the Base Revenue Requirement Balancing Account and to subsequently recover these costs.

8. San Diego Gas & Electric Company (SDG&E) shall be responsible for 9% of the costs of the 21st Century Energy Systems (CES-21) research project. SDG&E shall collect its annual revenue requirement through its electric distribution rates using the same authorized rate recovery mechanism and structure of other program-related costs currently recovered through distribution rates. To the extent that a CES-21 project is generation-related, SDG&E shall allocate the generation-related costs using generation-based allocation factors, but with the cost recovery through distribution charges. SDG&E is permitted to modify the cost recovery on an annual basis to true-up for its actual share of program expenses. SDG&E is authorized to open a balancing account to record the difference between its share of the program expenses and its annual revenue requirement. The ultimate disposition of this account shall be addressed at SDG&E's annual Electric Regulatory Account Balance Update filing or other applicable proceeding, to be collected from electric distribution customers.

9. Project Managers are limited to three representatives, one representative each from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company. 21st Century Energy Systems (CES-21) Project Managers shall coordinate with Lawrence Livermore National Laboratory, administer the CES-21 Program and the

Cooperative Research and Development Agreement, ensure that the 21st Energy Systems stays within the authorized budget, conduct workshops prior to Tier 3 supplemental advice filings, submit the annual report with all of the requirements as listed in Attachments B and C, and submit a joint report summarizing the outcome of all funded projects 60 days following the conclusion of all research and development projects.

10. Any 21st Century Energy Systems (CES-21) program management or administrative expenditures, filed by the Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company Joint Utility Advice Letter on April 19, 2013 shall be voided. Any future administrative expenses (excluding evaluation expenses) shall be capped at no more than 10% of the CES-21 total budget.

11. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company may use 21st Century Energy Systems (CES-21) funds for costs incurred in connection with utility personnel working in-house in collaboration with a CES-21 Contractor. CES-21 funds may not be used for in-house activities where the utility is conducting all of the work using its own staff.

12. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company ensure that the research parameters reflect a new contribution to cyber security and that there is not a duplication of research being done by other private and governmental entities.

13. Prior to expending any funds authorized by this decision, Pacific Gas and Electric Company, Southern California Edison Company, San Diego Gas & Electric Company, and Lawrence Livermore National Laboratory will negotiate and enter into a Cooperative Research and Development Agreement (CRADA)

consistent with Section 740.5 of the Public Utilities Code. This CRADA shall be subject to final approval through a Tier 3 Advice Letter filed at the Commission.

14. Within 30 days of the adoption of this decision, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall file the Cooperative Research and Development Agreement, along with the proposed implementation plan and *multi-year* projects, and associated business cases as a Tier 3 Advice Letter with this Commission. The Commission will review this filing to ensure its consistency with the policy requirements set forth in Section 740.5 of the Public Utilities Code and as adopted in this decision.

15. Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company (Joint Utilities) shall ensure the preparation and the filing of the initial Tier 3 Advice Letters listing proposed multi-year research projects. Specifically, the Joint Utilities shall ensure that the initial Advice Letter demonstrates:

a. That research projects are limited to cybersecurity and grid integration which this decision has identified as offering major research opportunities consistent SB 96 and the needs of ratepayers;

b. that the total spent on research for the five-year projection period in the 21st Century Energy System research projects for the purposes of cyber security and grid integration not exceed $35 million;

c. that there is a positive business case for each proposed research project. The business case for each new research project should: i) demonstrate quantifiable customer benefits, including a demonstration that safety and environmental benefits exceed costs on a net present value basis, using a Commission approved methodology, such as that used in calculating a Market Price Referent. The business case should also, ii) map

planned research projects to the energy system value chain, iii) detail the project costs fall within the overall allocation to each specific project, iv) analyze the justifications for specific projects against the goals in Section 740.1, and v) ensure that the project does not duplicate other research. The purposes of the business case are to ensure that funded projects in each of the four research areas are beneficial to ratepayers and to facilitate review and approval by the Commission. Therefore, the business case shall discuss the following: i) What is the overall value of the results from the potential research to ratepayers and to the utility system's safety and reliability? ii) How do the costs of the research compare to potential benefits? iii) Would the results of the research have an impact on the ability of the grid to support the competitive provision of electric power or on the ability to integrate non-utility assets and distributed generation onto the grid? iv) Does the proposed research align with CPUC policies? Does it, for example, support, specific programs such as the Commission's 33% renewable goal by 2020? v) Does the proposed research produce specific benefits concerning utility resources including transmission, distribution, generation, system operations, management, and oversight? vi) Does the research help foster safe, reliable service at just and reasonable costs?

d. that the research projects do not duplicate other research funded by California utilities, the California Energy Commission, the California Independent System Operator, the Electric Power Research Institute, or the United States Department of Energy.

e. that each proposed research project has the approval of the Joint Utilities of the 21st Century Energy System research project.

f. that, in the event that a research proposal is not funded by all research participants, that the advice letter include a full explanation for consideration by the Commission.

16. Within 30 days of the adoption of this decision, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company (Joint Utilities) shall also resubmit its rejected November 27, 2013 Joint Report, and consistent with requirements listed in Ordering Paragraphs 14-15 above, Joint Utilities shall ensure that the Joint Report specifies the full scope of proposed research projects, how the proposed project may lead to technological breakthrough advancements and potential breakthroughs in cybersecurity and grid integration, and the expected timelines for concluding the projects. Within 30 days of receiving the report and after receiving stakeholder comments, Energy Division shall determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient, subject to Commission review and approval, shall submit the report to the Legislature in compliance with Section 9795 of the Government Code.

17. To the extent that the initial Tier 3 Advice Letter does not meet the $35 million funding cap, or if funds are projected to shift 5% between project categories absent prior approval, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company must submit Supplemental Tier 3 Advice Letters requesting appropriate authorization and funding for newly proposed projects subject to the same requirements in Ordering Paragraphs 15.

18. As part of the Supplemental Advice Letter process, the Project Managers, in cooperation with Energy Division, shall hold a public workshop including the California Public Utilities Commission at least 45 days in advance of the filing to discuss the proposed research and priorities and to review the business case for proposed research. The Commission shall review the Tier 3 Supplemental

Advice filing to ensure its consistency with the policy requirements adopted in this decision and enumerated in Ordering Paragraphs 15-16.

19. The 21st Century Energy Systems research program is authorized for five years beginning immediately after Commission approval of the initial Tier 3 Advice Letter filing.

20. Within 60 days following the conclusion of the 21st Century Energy Systems Program, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas & Electric Company shall prepare and submit to the Executive Director of the Commission the report required by Public Utilities Code Section 740.5(e)(2) summarizing the outcome of all funded projects, including an accounting of all expenditures by project managers and grant recipients on administrative and overhead costs, and whether the project resulted in any technological advancements or breakthroughs in promoting cyber security and grid integration.

21. By March 31st of each year, Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) shall submit an annual report to the Executive Director of the Commission that provides information on the operations of the project, including projects funded, the results of the research, the efforts made to involve academics and other third parties, and the intellectual property that results from the research. PG&E, SCE, and SDG&E shall follow the outlines contained in Attachments B and C in this decision when preparing the annual reports required by this decision

22. If total funding of the 21st Century Energy Systems five-year program is increased over the $35 million cap (including franchise fees and uncollectibles) as a result of any future approved state legislation, and if such increased funding aligns with existing requirements of D.12-12-021, and this decision, then this decision authorizes such an increase subject to all of the Ordering Paragraphs above and any other reporting requirements that Energy Division deems necessary to fulfill the requirements of this decision.

23. Application 11-07-008 is closed.

This order is effective today.

Dated _____, at San Francisco, California.

ATTACHMENT A

SENATE BILL 96 (CHAPTER 356, STATUTES OF 2013)

SEC. 44. (a) The Legislature finds and declares that the purpose of adding Section 740.5 to the Public Utilities Code is to limit the implementation of the Public Utilities Commission Decision 12-12-031 (December 20, 2012), Decision Granting Authority to Enter Into a Research and Development Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems and for costs up to $152.19 million so that:
(1) No research and development projects other than for the purposes of cyber security and grid integration shall be funded by ratepayers as a result of Decision 12-12-031.
(2) Total funding for research and development projects for the purposes of cyber security and grid integration shall not exceed $35 million over the five-year research period.
(3) Those program management expenditures proposed, commencing with page seven, in the joint advice letter filed by the state's three largest electrical corporations, Advice 3379-G/4215-E (Pacific Gas and Electric Company), Advice 2887-E (Southern California Edison Company), and Advice 2473-E (San Diego Gas and Electric Company), dated April 19, 2013, be voided.
(4) Project managers be limited to three representatives, one representative each from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company.
(5) The Lawrence Livermore National Laboratory, Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company ensure that research parameters reflect a new contribution to cyber security and that there not be a duplication of research being done by other private and governmental entities.
(b) Nothing in this act authorizes the Public Utilities Commission's adoption of Decision 12-12-031.

SEC. 45. Section 740.5 is added to the Public Utilities Code, to read:
740.5. (a) For purposes of this section, "21st Century Energy System Decision" means commission Decision 12-12-031 (December 20, 2012), Decision Granting Authority to Enter Into a Research and Development Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems and for costs up to $152.19 million, or any subsequent decision in Application 11-07-008 (July 18, 2011), Application of Pacific Gas and Electric Company (U39M), San Diego Gas and Electric Company (U902E), and Southern California Edison Company (U338E) for Authority to Increase Electric Rates and Charges to Recover Costs of Research and Development Agreement with Lawrence Livermore National Laboratory for 21st Century Energy Systems.
(b) In implementing the 21st Century Energy System Decision, the commission shall not authorize recovery from ratepayers of any expense for research and development projects that are not for purposes of cyber security and grid integration. Total funding for research and development projects for the purposes of cyber security and grid integration pursuant to the 21st Century Energy System Decision shall not exceed thirty-five million dollars ($35,000,000). All cyber security and grid integration research and development projects shall be concluded by the fifth anniversary of their start date.
(c) The commission shall not approve for recovery from ratepayers, those program management expenditures proposed, commencing with page seven, in the joint advice letter filed by the state's three largest electrical corporations, Advice 3379-G/4215-E (Pacific Gas and Electric Company), Advice 2887-E (Southern California Edison Company), and Advice 2473-E (San Diego Gas and Electric Company), dated April 19, 2013. Project managers for the 21st Century Energy System Decision shall be limited to three representatives, one representative each from Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company.
(d) The commission shall require the Lawrence Livermore National Laboratory, as a condition for entering into any contract pursuant to the 21st Century Energy System Decision, and Pacific Gas and Electric Company, Southern California Edison Company, and San Diego Gas and Electric Company to ensure that research parameters reflect a new contribution to cyber security and that there not be a duplication of research being done by other private and governmental entities.

(e) (1) The commission shall require each participating electrical corporation to prepare and submit to the commission by December 1, 2013, a joint report on the scope of all proposed research projects, how the proposed project may lead to technological advancement and potential breakthroughs in cyber security and grid integration, and the expected timelines for concluding the projects. The commission shall, within 30 days of receiving the joint report, determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient submit the report to the Legislature in compliance with Section 9795 of the Government Code.
(2) The commission shall require each participating electrical corporation to prepare and submit to the commission by 60 days following the conclusion of all research and development projects, a joint report summarizing the outcome of all funded projects, including an accounting of expenditures by the project managers and grant recipients on administrative and overhead costs and whether the project resulted in any technological advancements or breakthroughs in promoting cyber security and grid integration. The commission shall, within 30 days of receiving the joint report, determine whether the report is sufficient or requires revision, and upon determining that the report is sufficient, submit the report to the Legislature in compliance with Section 9795 of the Government Code.
(3) This subdivision shall become inoperable January 1, 2023, pursuant to Section 10231.5 of the Government Code.

(END OF ATTACHMENT A)

ATTACHMENT B

CES-21 ANNUAL REPORT OUTLINE

(in lieu of Annual Advice Letter as stipulated in D.12-12-031)

Purpose: State Legislative and Commission Oversight of ongoing CES-21 Cyber security and Grid Integration Programs

1. Executive Summary
   a. Overview of Programs/Plan Highlights
   b. Status of Programs
   c. Lessons Learned

2. Introduction and Overview
   a. Background on CES-21 (General Description of CES-21)
   b. CES-21 Program Components
   c. CES-21 Program Regulatory Process
      (e.g., Tier 3 Advice Letters and Commission Outcomes; other informational reports provided)

   d. Pre-FilingWorkshop Results
   e. Industry Trends Impacting Program and Projects
   f. Coordination

3. Budget (By Year, by Research Area)
   a. Authorized Budget (Table Format)
   b. Commitments/encumbrances
   c. Dollars spent on in-house activities

4. Projects
   a. High level summary of each project undertaken by the Joint IOU's
   b. Project Status Report (see Attachment C)
   c. Description of Projects:
      i. Objective
      ii. Scope
      iii. Deliverables
      iv. Business Case Analysis (See Ordering Paragraph 15)

v. Evaluation Metrics
vi. Schedule (provide detailed Gant chart)
vii. CES-21 Funds Spent
viii. Treatment of Intellectual Property (e.g., copyrights or patents)
ix. Status Update

5. Conclusion
   a. Key results for the year for the joint IOU's CES-21 programs
   b. Next Steps for CES-21 projects
   c. Issues that may have major impact on progress in projects (if any).
   d. Lessons Learned

(END OF ATTACHMENT B)

ATTACHMENT C

PROJECT STATUS REPORT TO ACCOMPANY ANNUAL REPORT

Purpose: State Legislative and Commission Oversight of ongoing CES-21 Program

The information below must be reported electronically in spreadsheet format. Information for each project must be listed on separate rows in the columns specified below.

Column	Information Reported by the Joint Utilities	Comment/Instruction
A	Investment Year	Enter the year the reporting is being done for.
B	Project Name	Enter project title.
C	Project Type	Describe the type of project (Cyber Security etc.).
D	A brief description of the project	General description (objective, scope, deliverables, schedule).
E	Date of the award	The date the award/grant was made. (Format: XX/XX/XXXX)
F	Funding Amount	($)
G	Funds Expended to date: Contract/Grant Amount	($)
H	Funds Expended to date: In house expenditures	($)
I	Funds Expended to date: Total Spent to date	($)
J	Description of why this project was selected above other	State the reasons why this project was prioritized.

Column	Information Reported by the Joint Utilities	Comment/Instruction
K	Administrative and overhead costs to be incurred for each project (In-house)	($)Does not include CES-21 administration costs. Includes only project specific administrative and overhead costs.
L	Intellectual Property	Describe any Intellectual Property (is) for this project (if applicable).[1]
M	Update Year	Enter the year the update is being done for.
N	Update	Describe work accomplished during the year.

(END OF ATTACHMENT C)

[1] Please note D.12-12-031 Ordering Paragraph 15 guidelines pertaining to management of intellectual property.