Decision **PROPOSED DECISION OF ALJ DeBERRY (Mailed 4/29/2008)**

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Application of Pacific Gas and Electric Company and San Diego Gas & Electric Company for Approval of Their Separate Emerging Renewable Resource Programs. (U39E) (E902E)	Application 07-07-015 (Filed July 18, 2007)

INTERIM OPINION AUTHORIZING EMERGING RENEWABLE RESOURCE PROGRAMS

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INTERIM OPINION AUTHORIZING EMERGING RENEWABLE RESOURCE PROGRAMS

1. Summary

Today's decision authorizes Emerging Renewable Resource Programs (ERRP) for Pacific Gas and Electric Company (PG&E) and San Diego Gas & Electric Company (SDG&E) (Joint Applicants). The adopted ERRP allows PG&E and SDG&E to expend up to $30 million and $15 million, respectively, on external costs for a period of two years. ERRP expenses will be recorded in each utility's Energy Resource Recovery Account (ERRA).

The adopted ERRP includes project approval and oversight through the Commission's Energy Division (ED) assisted by consultants using our adopted Technical Review Process (TRP). In addition, an independent evaluator (IE) will review ERRP project solicitations.

Although this decision authorizes Joint Applicants' ERRP funding request, it provides that ratepayers will only fund up to 80% of the estimated costs for an ERRP project.[1] The additional 20% funding will be from shareholders, governmental agencies, technology developers, or other third parties. Thus, ratepayers do not bear all of the risk of ERRP projects but rather share these risks with those providing the 20% in matching funds. The decision does not adopt intellectual property (IP) policies for IP produced from ERRP projects. Instead, IP will be addressed on a project-by-project basis until it is addressed through the workshop process.

PG&E's request for $2 million for the University of California Merced Solar Center (Solar Center) and $3.2 million for SDG&E's request for a

[1] The maximum funding for a single ERRP project is limited to $7 million.

Wastewater Biomethane Demonstration (WBD) project are authorized. However, only $2 million of PG&E's requested $6 million for its wave energy (WaveConnect) project is authorized at this time pending further review by the TRP consultants and approval by ED.

Because ERRP is a new utility program addressing the development of new renewable energy technologies, we will closely monitor and evaluate the program results during the next two years, and then decide whether the program should be continued, modified, or cancelled.

This proceeding is closed.

2. RPS Background

The California Renewables Portfolio Standard (RPS) Program was established by Senate Bill (SB) 1078[2] and codified by California Public Utilities Code Section 399.11, et seq. The statute required that a retail seller of electricity such as PG&E purchase a certain percentage of electricity generated by Eligible Renewable Energy Resources (ERR). Originally, each utility was required to increase its total procurement of ERRs by at least 1% of annual retail sales per year until 20% is reached, subject to the Commission's rules on flexible compliance, no later than 2017.

The State's Energy Action Plan I (EAP I) called for acceleration of this RPS goal to reach 20 percent by 2010.[3] This was reiterated again in the Order

[2] Chapter 516, statutes of 2002, effective January 1, 2003 (SB 1078).

[3] The Energy Action Plan I was jointly adopted by the Commission, the California Energy Resources Conservation and Development Commission (CEC) and the California Power Authority. The Commission adopted the EAP I on May 8, 2003.

Instituting Rulemaking (R.04-04-026) issued on April 28, 2004,[4] which encouraged the utilities to procure cost-effective renewable generation in excess of their RPS annual procurement targets (APT),[5] in order to make progress towards the goal expressed in the EAP. On September 26, 2006, Governor Schwarzenegger signed Senate Bill (SB) 107,[6] which accelerates the State's RPS targets to 20% by 2010, subject to the Commission's rules on flexible compliance[7]. During the past four years, California utilities including PG&E and SDG&E have sought to increase the amount of eligible renewable energy procurement to meet RPS targets.

In addition to the 2010 mandate, in 2005 the EAP II set a more ambitious goal to reach 33% renewable energy by 2020.[8] In 2005, the Governor called for an acceleration of the RPS to 33 percent by 2020. While the state is not mandated by legislation to reach this more ambitious goal, the Commission is working with the investor-owned utilities (IOUs) to evaluate to what extent this goal can be achieved.

3. Procedural Background

Joint Applicants filed Application (A.) 07-07-015 (Application) on July 18, 2007, requesting approval for separate ERRP programs to support the

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[4] http://www.cpuc.ca.gov/Published/Final_decision/36206.htm.

[5] A Load Serving Entity's (LSE) APT for a given year is the amount of renewable generation an LSE must procure in order to meet the statutory requirement that it increase its total eligible renewable procurement by at least 1% of retail sales per year.

[6] Chapter 464, Statutes of 2006 (SB 107).

[7] Public Utility Code Section 399.14(a)(2)(C).

expansion of renewable energy development and undertake specific projects leading to commercialization of identified technologies. PG&E and SDG&E request authorization for ERRP funding of $30 million, and $15 million, respectively, for two years. PG&E and SDG&E propose that ERRP costs will be recovered in the ERRA and charged to bundled service customers, but will not include administrative costs. PG&E and SDG&E expect to coordinate with other utilities, government entities and non-market participants involved in renewable energy technologies and seek joint funding and partnership funding for ERRP projects.

The Application requests that ERRP projects be approved through the Tier I advice letter (AL) process thereby delegating authority to Commission staff for project acceptability and eligibility for rate recovery. Joint Applicants propose establishing an Emerging Renewable Resources Coordinating Council (ERRCC), which would meet quarterly to facilitate information-sharing, coordination and potential cost-sharing of projects. ERRCC members would include representatives of the California Energy Commission (CEC), ED, the Division of Ratepayer Advocates (DRA), The Utility Reform Network, Joint Applicants and other California utilities.

The Application proposes that information deemed proprietary by project participants be protected, and that commercially sensitive information about emerging technology or resource projects not be publically available. PG&E and

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[8] EAP II, released October 2005, supports and expands the commitment to cooperation among state agencies embodied in EAP I and reflected in the State's coordinated actions since adoption of EAP I.

SDG&E would share such information with their respective Procurement Review Groups (PRG) and through confidential AL filings.

In addition to establishing separate ERRPs, the Application requests approval of three ERRP projects.[9]

DRA timely protested the Application requesting that the proceeding consider whether other sources of ERRP project funding were available. DRA also questioned whether ratepayers should bear all of the costs if utility shareholders and other states benefit from the ERRP studies, and whether ERRP will produce IP that should accrue rights to ratepayers. On August 27, 2007, PG&E and SDG&E responded.

At a September 14, 2007 prehearing conference (PHC), DRA explained that it was obtaining information from the Joint Applicants and was unsure whether it would continue to protest the Application. During the PHC the assigned Administrative Law Judge (ALJ) asked the utilities a series of questions regarding ERRP. On September 24, 2007, PG&E and SDG&E filed a joint response to the ALJ's questions.

On October 11, 2007, the assigned ALJ issued a ruling asking PG&E and SDG&E additional questions about ERRP. On October 23, 2007, PG&E responded (PG&E Response), and on October 26, 2007, SDG&E responded (SDG&E Response).

At a second PHC on October 30, 2007, the Independent Energy Producers Association (IEP) stated its desire to make ERRP research public. IEP also

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[9] PG&E proposes to expend up to $2 million towards the Solar Center and $6 million towards WaveConnect. WaveConnect consists of two wave power projects off the coast of Northern California. SDG&E proposes to expend up to $4 million on the WBD project in SDG&E's service territory.

indicated its concern that PG&E's proposed WaveConnect project could be viewed as utility-owned project development. IEP argued that research towards project development may not comply with competitive project solicitations required under Decisions (D.) 04-12-048, D.06-05-016, and D.07-12-052. Also, at the second PHC, Southern California Edison Company (SCE) indicated it would be filing an application similar to A.07-07-015 but with a focus on grid integration of renewable energy.[10] SCE also stated it was willing to participate in the ERRCC. No party requested an evidentiary hearing. Parties filed briefs and reply briefs on November 19 and 29, 2007, respectively.

The proceeding was submitted on November 29, 2007.

4. Discussion

We find there is sufficient merit to establish ERRP for PG&E and SDG&E. As pointed out by Joint Applicants, the primary ERRP activity is to demonstrate renewable resources or technologies that have completed preliminary assessment or testing but require performance validation to confirm their feasibility for commercial use.

One of the two central recommendations of the Economic and Technology Advisory Committee (ETACC) to the Air Resources Board (ARB) is to "Promote Clean Energy Innovation and Commercialization."[11] Specifically, ETACC urges the ARB to support California research, development and demonstration (RD&D) and commercialization efforts today to ensure that critical innovations

[10] SCE filed A.08-03-014 for a Renewable Integration and Advancement Program on March 18, 2008.

[11] ETACC is an advisory committee to the ARB and adopted the report on February 11, 2008, pp. 2-9.

are available to contribute to greenhouse gas (GHG) reductions in future years. The ETACC financial sector subgroup recommends that the state support demonstration finance. Specifically, the subgroup recommends the ARB to:[12]

> Create a single or a series of financial vehicles to support demonstration finance for projects that have particularly high climate change abatement potential. This may include, but is not limited to, clean generation technologies, energy efficiency industrial applications and vehicle demonstrations of new low and zero tailpipe transportation options. The absence of funding for project demonstrations is a significant impediment to the maturation of new technologies and is consistently identified by thought leaders as a major gap in the financial architecture of clean energy. Public sector managers view demonstration as the responsibility of the private sector, while private sector investors view it as too risky.

The ETACC also singled out clean generation as a specific technology area that merits attention from a demonstration finance program. Specifically, the ETACC recommends support for initial megawatt (MW) scale installations that prove technical feasibility and enable project financing for emerging clean generation technologies.[13]

The ETACC's recommendations and the anticipated increased demands for renewable energy procurement underscore the need for the action we take today. In their response to the ALJ's October 11, 2007 Ruling, Joint Applicants emphasize that the RPS mandate for 20% renewable energy will be increasingly difficult to obtain due to increased demand for limited renewable resources on a regional and national level, rising prices and grid integration issues. Joint Applicants state that the National Renewable Energy Lab (NREL) estimates that

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[12] *Id*. pp. 2-11.

[13] *Id*. pp. 4-12

by 2010 clean energy demand will outpace generation by at least 37%, unless new projects are built. In addition to challenges cited for 2010, procuring renewables will become even more difficult if utilities are mandated to procure 33% renewables by 2020 without commercialization of emerging technologies.

No party disagrees with this assessment. We too have noted the increasing prices in RPS proposals, as cited in the April and July 2007 RPS Quarterly Reports to the Legislature. Since both investor-owned and municipal utilities, as well as other energy suppliers are mandated to meet the 20% by 2010 RPS goal, we are faced with increased demand, limited supply, and increasing prices.[14] It is also apparent that there is increasing demand for renewable energy sources from other states that will place additional competitive pressure on renewable prices.

With these current and expected demands on renewable resources, it is reasonable to develop mechanisms to facilitate commercialization of emerging renewable energy technologies and thus help reduce the imbalance between supply and demand that will exist in the renewable energy market for the foreseeable future. Thus, ERRP serves to advance the public interest in renewable energy technology utilization and helps alleviate pressure on renewable energy prices.

In making this determination, we note that none of the interested parties opposes the concept of establishing ERRP.[15] While the interested parties do not oppose ERRP, they do address certain elements of ERRP's structure including

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[14] http://www.cpuc.ca.gov/PUC/energy/electric/RenewableEnergy/progress.htm.

[15] DRA states it supports ERRP subject to certain conditions such as funding support by PG&E's and SDG&E's shareholders.

funding, IP, and whether ERRP will lead to development of utility-owned energy projects.

5. ERRP Process and Procedures

In order to ensure transparency and efficient utilization of ratepayer funds, the Commission will establish ERRP process and procedures. First, the Commission will develop a renewable technology assessment report that will guide utilities in development of their investment plans. At the beginning of each two-year ERRP funding period, the utilities will be required to file individual investment plans that will serve as a framework to select the best projects that meet the state's long-term renewable energy goals. Second, the utilities, with the assistance of an independent evaluator, will select projects through a competitive project solicitation process. Third, the utilities will work with technical consultants to select the best projects that fit their investment plans. The Commission will oversee this process and has final approval over which projects will receive ERRP funding. Lastly, ED will hold a workshop within 90 days of this decision to address all outstanding implementation issues.

5.1. Renewable Technology Assessment Report

In order to efficiently utilize ratepayer funds, ensure coordination between utilities, and develop technologies that match the state's renewable resource needs, we will develop a renewable technology assessment report (Assessment Report). ED will develop the Assessment Report. The Assessment Report will assess, on a state-wide basis, the renewable technologies that meet the principles and guidelines established here. The Assessment Report will also identify priority technologies that fit the renewable resource needs of each IOU. The

report will identify both renewable generation technologies as well as technologies that facilitate utilization and integration of renewable energy.

We adopt the following principles to serve as a guide in development of the renewable technology assessment report:

1. Projects must possess sufficient renewable potential to address state renewable and climate change goals. [16]
2. Projects must achieve commercialization at a competitive price within the 2020 timeframe.[17]
3. ERRP must benefit California ratepayers through a) developing technologies specific to California and the Western region, and b) coordination between IOUs and other emerging technology programs to avoid duplication.

An important element of the Assessment Report will be to categorize emerging technologies according to their commercialization potential over the short, medium, and long-term, which corresponds to the relative risk of investing in that project. For example, a project that is estimated to reach commercialization in 8 years has a higher risk compared to a project that will reach commercialization in 1-3 years. The California Solar Initiative (CSI) RD&D program established three categories to define risk and results timeframes, which are listed in Table 1 below.

[16] The 2005 Energy Action Plan identified a goal of 33% renewable energy by 2020. In 2006 Assembly Bill (AB) 32 was passed which caps global warming emissions at 1990 levels by 2020.

[17] *Id*.

Table 1: Risk and Results Timeframes in the CSI RD&D Program[18]

Term	**Risk and Results Timeframes**	**Percent of Funding (risk ranking)**
Short-term	Project results in 1-3 year horizon	60 % (lowest risk)
Medium-term	Project results in 4-7 year horizon	20 %
Long-term	Project results in 8+ year horizon	20 % (highest risk)

We establish these risk and results timeframes at this time. We do not yet adopt a percent of funding for each category, but do require that the majority of ERRP funds be spent on projects that will reach commercialization in the short to medium term.

After we develop the renewable technology assessment report, utilities will be required to file individual investment plans. Using the renewable technology report as a guide, the utilities will submit individual investment plans to the Commission before each funding cycle, which will provide a framework for project selection.

5.2. Investment Plans

The ALJ's October 11, 2007 Ruling required Joint Applicants to submit information which provided preliminary ERRP investment plans for a 6-year planning horizon. Preliminary investment plans are included in PG&E's and SDG&E's Responses. We do not authorize these investment plans at this time, since these investment plans were only preliminary and were developed without guidance from the ED.

[18] *See*, D.07-09-042, p. 12

We will require investment plans at the beginning of each funding cycle. While we do not set out complete guidelines for future investment plans in this decision, we do delegate authority to ED staff to develop additional guidelines through the workshop process.[19]

At this time, we will adopt two guidelines for ERRP. DRA in arguing for a strong Emerging Renewable Resource Coordinating Council (ERRCC)[20] recommended a useful criterion that we will adopt.[21] DRA suggested that ERRP projects should not duplicate existing efforts. This criterion, which helps direct the efficient use of ratepayer funding, is particularly important as there are numerous RD&D programs including Public Interest Energy Research (PIER), the CSI, the California Institute for Climate Solutions (CICS), and the annual gas RD&D program receiving ratepayer funding through Commission regulated IOUs. In addition, there are other organizations such as NREL and the Electric Power Research Institute involved in various stages of RD&D. It is possible that elements of some projects in these programs will overlap and duplicate project work proposed in ERRP, thus reducing the efficiency of ratepayer funding. While our intent is not to duplicate efforts of the newly established CICS, it should be noted that the CICS is directed to coordinate technology transfer and commercialization efforts with ERRP since the relatively small amount of CICS

[19] We provide the October 11, 2007 ruling in Attachment A as an illustrative example of an investment plan.

[20] See Section 4.1.3 for a description of the proposed ERRCC.

[21] DRA Opening Brief, November 19, 2007, p. 7.

money available for commercialization is insufficient for utility-scale demonstration projects.[22]

As an additional guideline for ERRP projects we note that the CEC defines RPS eligible resources according to specific renewable resources or fuels.[23] We find that this list of eligible renewable energy technologies is appropriate for defining eligible ERRP projects. In addition, we will also allow technologies that facilitate utilization and interconnection of renewable energy technologies to the grid.[24]

Thus, Joint Applicants are directed to file ERRP investment plans through a Tier 3 advice letter at least four months in advance of the start of each ERRP funding cycle. During this initial two-year period, ED will require the utilities to file updated investment plans based on the renewable technology assessment report in order to authorize investment categories to guide project selection.[25]

5.3. Competitive Project Solicitation

Joint Applicants propose various means to identify potential ERRP projects including solicitations, bilateral discussions, agreements, and other outreach efforts.[26] Joint Applicants would then evaluate projects based on a two-tiered screening process that considers initial factors such as the degree of

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[22] See, D.08-04-039.

[23] http://www.energy.ca.gov/2007publications/CEC-300-2007-006/CEC-300-2007-006-ED3-CMF.pdf.

[24] The adopted CSI program provides that energy storage and grid integration are important to developing renewable energy sources. D.07-09-042, September 20, 2007, Appendix A, p. A-2, and p. A-4.

[25] ED will direct Joint Applicants when to file an updated investment plan.

[26] Application, Appendix 1, pp. 1-23 to 1-24.

commercial development and completion of research and development and compatibility with RPS goals.[27] Projects meeting these evaluation criteria would then be submitted to the Commission through the Tier 1 AL procedure. The Joint Applicants proposal, however, is not adequate for the purposes of evaluation, and selection of potential projects.

We direct Joint Applicants to identify potential ERRP projects through project solicitations and not through bilateral discussions or agreements, in order to maintain transparency and minimize technology cost. As stated in Section 5.2., the pre-approved investment plans will provide the framework directing the Joint Applicants on which type of technologies to solicit on a competitive basis. We will employ the services of an IE, currently being utilized in RPS and all-source procurement, to oversee the transparency and fairness of project solicitations.[28] We expect that an IE will review solicitation materials prior to the start of a project solicitation. After the project solicitation is complete, the IE will ensure that the utilities conducted a transparent solicitation and fair review of the project bids.

5.4. Role of ERRCC and PRG

Joint Applicants propose establishing the ERRCC to coordinate with other utilities, government entities and non-market participants. Although, we agree these functions are useful to the efficient operation of ERRP, the types of projects proposed for ERRP are complex and specialized and thus require a greater level of expertise than those provided by an ERRCC, or by the Commission's ED. Joint Applicants also propose that the PRG review proposed projects.

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[27] Application, Appendix 1, pp. 1-24 to 1-26.

Although, DRA does not oppose the general function of the ERRCC, DRA contends that other advisory groups such as the Emerging Technologies Coordinating Council, an advisory council for energy efficiency, has not functioned well as an advisory group and is not a proper model for the ERRCC.

DRA recommends that ERRP projects be subject to one of three tiers of the AL process based on the degree to which the projects meet the ERRCC's approval. The ERRCC would thus evaluate ERRP projects and provide comments. The project proponent would resolve these comments before Commission approval. DRA believes strengthening the role of the ERRCC will develop the factual record and the ability of the ratepayers to contest any project issues. DRA also proposes that the ERRCC be enabled to recommend ERRP projects and question project fund expenditures.

We agree with DRA that expenditure of ratepayer funds on ERRP projects requires close monitoring by the Commission and evaluation and assessment by technical and financial experts. However, the proposed members of the ERRCC, including utility staff, Commission staff and CEC staff, may not have the necessary expertise for effectively evaluating projects for commercialization potential, financial considerations, and technical merits. Furthermore, it is unlikely these proposed ERRCC members would be able to completely assess the commercial risks and costs of ERRP projects.

Joint Applicants propose that projects also be reviewed by the PRG. We will only require that the PRG be informed of ERRP projects. The PRG will not otherwise participate in the ERRP process or project approval since we establish a process to fulfill this role as explained in Section 5.4.

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[28] *See*, D.07-12-052, pp. 131-141.

5.5. Technical Review Process (TRP)

Instead of establishing the ERRCC or utilizing the PRG, we will establish a TRP. The TRP will assist ED and the utilities in soliciting, evaluating and selecting projects. The TRP should consist of a pool of consultants with expertise in renewable energy technologies and renewable energy markets.

The ED will select the TRP consultants through an IOU's Request for Proposal (RFP) process or other agreed upon contracting process, and will direct one of the two IOUs to enter into a contract with them. The ED will direct the TRP consultants throughout the life the contract. The two IOUs will enter into a co-funding agreement for the purpose of making all the necessary payments on this contract. The TRP consultants will be paid from ERRP authorized funds, which is similar to the methodology established for technical contractor activities in the RPS program.[29] TRP consultant invoices should be sent to ED for review and approval, and forwarded to the selected utility for payment. PG&E and SDG&E should establish a line item in the ERRP sub-account portion of ERRA to reflect TRP costs as discussed further in Section 5.11.

In D.06-10-050, we determined that a reasonable cap for technical contractor activities is $400,000 per year.[30] In this proceeding we shall limit the amount of consultant costs up to a maximum of 2% of the authorized ERRP funds for each utility, or $600,000[31] for PG&E's ERRP and $300,000[32] for SDG&E's

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[29] In D.06-10-050 (pp. 52-54) regarding our rulemaking to continue the implementation and administration of the RPS program, we authorized expenditures for additional technical resources to assist staff in its duties, and authorized that these costs would be recorded in a RPS memorandum account.

[30] *Id*.

[31] $600,000 is 2% of PG&E's two-year budget of $30 million.

ERRP during the two-years authorized for ERRP in this decision. To the extent that the maximum amount for each utility is not expended each year authorized for ERRP, such amounts may carry over and be expended in subsequent years.

5.6. Project Selection

The Commission will have an active role throughout the project selection process. First, the Commission will assess utility investment plans to ensure they are consistent with the Assessment Report and renewable energy and climate change goals, policies and programs. Second, ED will work with TRP consultants to ensure that the IOU project solicitations are consistent with the investment plans. Third, ED will determine bid-ranking criteria for project selection. Lastly, the Commission will determine which projects are eligible for ERRP funding through review of utility AL.

We expect that Joint Applicants, with guidance from TRP contractors and the IE, will use the investment plans as a framework for determining which type of technologies to solicit through the competitive project solicitations. After the utilities select projects from the solicitations, they will provide their proposed projects to the TRP consultants for review. The utilities will then submit the projects to ED through Tier 2 or Tier 3 ALs[33] and will include analysis and recommendations provided by the TRP consultants.

5.7. Project Funding and Cost Sharing

PG&E's request for $30 million and SDG&E's request for $15 million in ERRP funding would be used to pay for external costs related to the

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[32] $300,000 is 2% of SDG&E's two-year budget of $15 million.

[33] The ED will direct the utilities which AL to file on a project-by-project basis. ERRP projects greater than $1 million in total project cost shall be filed using Tier 3 AL.

development of emerging renewable resources such as consultant fees and equipment purchases.[34] The requested amounts would be used to fund a two-year program, but do not include administrative costs associated with utility staff.[35] The requested amounts would be used exclusively for equipment purchases, third-party consultants and specialists to provide the services necessary to carry out ERRP. Joint Applicants propose that all ERRP costs be funded by ratepayers, although they will seek out joint funding and partnership opportunities for ERRP projects.[36]

Although, DRA supports the requested amounts of $30 and $15 million for PG&E and SDG&E respectively, DRA recommends that shareholders in both utilities contribute 33%[37] of the requested funds for ERRP projects. DRA argues that shareholders stand to gain significantly from successful ERRP projects because successful projects will increase return on equity and allow utilities to meet RPS obligations, thus helping the utilities avoid potential RPS penalties. DRA adds that other ERRP benefits such as resource diversity, GHG reductions and improved public relations also provide advantages to the utilities.

IEP argues that there are many other funding sources available for renewable technology projects, including private venture capital and governmental sources. IEP contends that ERRP should concentrate on R&D rather than commercialization of technologies for the marketplace.

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[34] Application, Appendix 1, p. 1-3.

[35] Application, Appendix 1, p. 1-31.

[36] Application, Appendix 1, p. 1-7.

[37] DRA bases its recommendation for a 33% contribution on D.06-12-043 which allocated a gain-on-sale of 33% to ratepayers and 67% to shareholders.

Joint Applicants contend ERRP does not produce any assets nor is there any comparable asset sale which benefits shareholders. Furthermore, Joint Applicants argue shareholders do not benefit from ERRP either through production of additional renewable resources for meeting RPS goals or through indirect value such as improved public relations. Instead, Joint Applicants believe ERRP provides benefits to ratepayers as the supply of renewable resources is expanded and GHG reductions are increased.

While there are differences between the various ratepayer funded RD&D programs, ERRP bridges the gap between research and development and actual demonstration and commercialization of an emerging technology. ERRP projects should already be proven in the laboratory, and it is reasonable to expect that project developers and proponents have some assurance of success. The unanswered questions for ERRP projects are whether the project will work efficiently on a large scale and whether the technology will be able to compete in a utility-scale project solicitation.

We also believe that ERRP projects should not be totally funded by ratepayers. For example, the PIER program requires matching funds for many of its projects. The Commission adopted CSI Plan states that cost-sharing is a criterion for project selection.[38] In addition, the CICS requires that the Institute receive matching funding.[39] Similar programs in other states such as the New

[38] D.07-09-042, Appendix A, p. A10.

[39] *See*, D.08-04-039.

York State Energy Research and Development Authority (NYSERDA)[40] also require matching funds.[41]

Rather than placing all of the risk for project success on ratepayers, we will require that at least 20%[42] of ERRP project costs be provided from non-ratepayer sources. If a project has multiple stages, each stage must adhere to this cost-sharing requirement. Thus, the maximum amount of ERRP project funding by ratepayers would be 80% of the estimated cost for any single project.[43] The 20% of non-ratepayer funding may be provided by owners of products to be tested or demonstrated, governmental sources, shareholders, venture capitalists, or other non-ratepayer sources.

Requiring parties other than ratepayers to participate in the risk of ERRP projects provides some additional assurance that another party has evaluated an ERRP project and believes in its success. Simply stated, project proponents, including technology owners and utilities, should be willing to accept some risk in the projects they propose. Our adopted sharing of risk and project cost is not burdensome, is unlikely to halt project proposals, and recognizes the cost sharing principles existing in similar RD&D programs.

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[40] Application, pp. 1-12.

[41] The NYSERDA program requires cost sharing in the form of matching cash support. In-kind contributions are not allowable as matching funds. Cost-sharing may include funding from other organizations. On most projects NYSERDA will contribute 50% of study costs, up to $50,000, based on an approved scope of work. NYSERDA contributions are reduced depending on other project factors. (www.NYSERDA.org)

[42] In-kind contributions do not qualify as matching funds.

[43] Although, DRA recommends a 33% contribution by shareholders, this calculation is based on the gain-on-sale reflected in D.06-12-043. Because ERRP is different from a typical gain-on-sale due to differences in the types of assets that may have value, we will apply a factor of 20% which recognizes the greater uncertainty of asset value.

Joint Applicants request that ERRP projects range from $100,000 to $7 million. Because ERRP is a new program, and the categories of ERRP projects are uncertain, we will adopt this range as well as DRA's suggestion that ERRP funding should have a direct impact on the commercialization of a selected project.[44] Since the maximum ERRP project funding will be limited to $7 million, projects requiring greater amounts of ERRP funding to demonstrate commercial success should be rejected or utilities should seek funding above the $7 million cap from other sources. In this way, ratepayer funds should not be committed to projects which require more than the maximum amount of ERRP funding.[45]

Although Joint Applicants indicate that administrative costs will be recovered through existing revenue requirements,[46] we expect PG&E and SDG&E to identify all ERRP-related administrative expenses in future general rate cases (GRC).

5.8. Commission Oversight and Utility Accountability

Joint Applicants propose ERRP oversight through ED's participation in the PRGs and the ERRCC, and through ED's review and approval of ERRP project AL. Joint Applicants anticipate an ERRP report providing information on project expenditures, and discussion on ERRP project progress, issues and projected expenditures in PRG meetings.[47]

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[44] DRA Opening Brief, November 19, 2007, p. 7.

[45] For example, WaveConnect consists of multiple phases. We consider the multiple phases as part of one project.

[46] Application, Appendix 1, p. 1-31.

[47] Application, App., pp. 29-31.

The Joint Applicants performance will be evaluated according to their stated goals in the investment plan since the investment plan is the guiding document that provides a framework for measuring success. In addition, we agree that ERRP needs a reporting system as well as a process to review ERRP project progress, in order to decide whether adjustments, including project termination,[48] should be implemented. Since ED will be providing ERRP oversight, ED shall perform this function. We will not adopt a specific reporting process at this time, but ED should develop a method through workshops that allows it to track project progress, milestones, and expenditures.

5.9. IP

Parties expressed concern about the disposition of IP rights, or revenues arising from the proposed work done through ERRP projects. IEP contends the IP developed from ERRP projects should be broadly disseminated so that production of cost-competitive renewable energy and the benefits for ratepayers are maximized. DRA argues that to the degree that ratepayers are funding ERRP, any IP which is developed belongs to ratepayers in proportion to their contribution to the ERRP budget. Joint Applicants agree with DRA regarding ownership by ratepayers of IP, and add that owners of technology are unlikely to participate in ERRP if the owners believe that their technologies will be shared with the public. Joint Applicants also recommend that it is premature to determine the treatment of any ratepayer benefits from IP which is developed in ERRP projects.

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[48] Joint Applicants state that each project will include a schedule or plan, objectives, and critical milestones to monitor progress. Joint Applicants also list examples of reasons for terminating projects. (Joint Applicant's Response to ALJ DeBerry's questions, September 24, 2007, pp. 9-10.)

D.07-09-042,[49] establishing the CSI RD&D Plan, adopted a flexible treatment of IP and confidential information based on the scope of the research and the specifics of the project, as well as adoption of certain general rules. Although subject to change, D.07-09-042 adopted the same treatment of IP as provided in the CEC's PIER program.[50] PIER provides that a project contractor owns all IP developed prior to the contract, and CEC has no interest in this IP. IP developed by PIER funds is owned by the contractor but the CEC has a license to use it and let others use it too. Items specifically mentioned in a project contract to be delivered to CEC such as reports become the property of CEC. CEC retains "march-in rights"[51] for the situations in which a contractor develops a patentable technology and either does not patent it in a timely manner or patents it but does not take subsequent steps to commercialize it.

ERRP is different from PIER and CSI projects in that ERRP is focused on demonstration projects rather than research and development. However, there are similarities in these programs. For example, all programs will utilize contractors, involve funds provided by ratepayers, and are likely to involve a diverse variety of projects. We agree with Joint Applicants that in order to attract potential contractors, we must provide certain IP protections including the confidentiality of information. However, it is also important that information developed by ERRP be shared broadly if the goal of expanding renewable energy supplies is to be realized. Although our preference is that all non-IP protected

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[49] See, pp. 29-30.

[50] See, D.07-09-042, Appendix A, p. A14.

[51] March-in rights are those rights associated with an invention or IP developed by a contractor, such as patent application or practical application, which have not been exercised by the contractor within a reasonable period of time.

information be made public, this issue is complex and not easily resolved without further input from parties.

Other IP issues need to be discussed and resolved before settling upon a reasonable IP policy. For example, how long should the IP reside with the utility, and what are the conditions when IP should be made public. Because it is critical to pursue the development of alternative forms of renewable power we do not want to delay ERRP projects while the matter of IP is being resolved. ED will further explore this issue through the workshop process.

A review of the three ERRP projects proposed in this Application indicates that ERRP is likely to include a broad array of diverse projects. Thus, adopting detailed IP procedures applicable to all ERRP projects may be difficult and time consuming. Therefore, we will not adopt strict IP provisions at this time but will adopt some IP guidelines. We will address additional provisions through the workshop process.

As a starting point we will allow the IOUs to negotiate IP terms in each contract, and ED will then review these contract terms. We expect that each ERRP project contract will address IP already owned by a contractor, and will identify that information which can be shared as the project proceeds. In addition, contracts should include a clause providing march-in rights in the case that a technology owner does not proceed to commercialize a successful technology. This clause should state that IP will reside with either PG&E or SDG&E, and that any IP value that resulted from ERRP funding will accrue to ratepayers according to their share of the funding.

5.10. ED Workshop

Although we provide general guidelines for identifying, soliciting, and evaluating ERRP projects, other issues remain. Among these remaining issues

are the development of the renewable technology assessment report, utility investment plans, program guidelines, bid-ranking criteria, reporting requirements, and IP guidelines.

In order to resolve these matters, ED should sponsor a workshop within 90 days of the effective date of today's decision. Because it is important to begin ERRP to develop new renewable energy technologies, we will not delay the approval of the proposed ERRP projects pending the outcome of this workshop, but will approve the projects as further discussed in Section 7. Utilities, however, cannot seek funding approval for future projects until we approve the investment plans. It is the Commission's intent to create a fair and efficient process that provides a clear framework for project selection from the program's onset instead of case-by-case review of individual projects. The outcome of the workshop process will be a Commission-adopted guiding document that contains all of the process and procedures adopted in this decision or decided through the workshop process.

5.11. ERRP Costs Should Be Recorded in the Appropriate Utility ERRA

Joint Applicants request that ERRP expenditures be recorded in the ERRA, and that a new line item be added to the Electric Preliminary Statement Part CP-Energy Resource Recovery Account authorizing a debit or credit entry equal to actual ERRP expenses. PG&E states it has already reflected 50% of its ERRP request, or $15 million in its 2008 ERRA Forecast Application (A.07-06-006), which was filed on June 1, 2007.[52] Similarly, SDG&E states it has requested 50%

[52] D.08-02-018 approved PG&E's 2008 ERRA forecast in its entirety.

of its ERRP request, or $7.5 million, in its 2008 ERRA Forecast Application filed on October 1, 2007.[53]

We agree with Joint Applicants that this method of accounting for ERRP costs will provide transparency in tracking ERRP actual expenditures against the budgeted amounts and we will adopt it. As noted above, we require Joint Applicants to track internal labor costs associated with ERRP and seek recovery in future GRC.

Joint Applicants also request that in the event that any of the outputs from the ERRP-funded activities such as site-development work products, facilities or equipment are later used to support a commercial project owned by PG&E, SDG&E or a third party, the owner of the project will be required to acquire the material at the higher cost (or appropriate share thereof) or market value, and the proceeds would be credited to the ERRA account.

Although, we agree that ERRP work products, facilities or equipment remaining after ERRP projects are completed should be identified and included in appropriate accounts, it is premature to adopt accounting for these assets since these assets may vary among ERRP projects. Instead, we will require PG&E and SDG&E to file a Tier 2 or Tier 3 AL with ED[54] denoting the specific ERRP-related assets to be disposed of and their potential value.

6. Emerging Technology will not be Evaluated through RPS Procurement Process

Parties should note our overall concern with the IOUs proposing power purchase agreements (PPAs) with emerging technologies because of the

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[53] D.08-02-030 approved SDG&E's 2008 ERRA forecast in its entirety.

[54] ED will determine the AL tier.

potentially greater costs of deploying such projects. In D.08-02-008,[55] we stated that emerging projects may perhaps be better evaluated via ERRP rather than periodic RPS project solicitations since RPS contract evaluation protocols are not designed to evaluate pre-commercial technologies. ERRP, however, in coordination with the renewable technology assessment report and approved investment plans, is structured to provide the necessary technical and financial review for emerging technology projects. Furthermore, we desire that emerging renewable technology projects be developed to reduce energy costs. Rather than committing limited above market funds[56] to PPAs with emerging technologies, we encourage such projects utilize ERRP as a mechanism towards commercialization.

7. ERRP Projects

7.1. Solar Center

PG&E has requested $2 million to support advanced solar technologies through the California Solar Testing Center at the University of California Merced. This proposed solar testing center will test utility-scale advanced solar technologies, which fall into two categories: solar electric technologies and solar thermal or concentrating solar power (CSP). Solar electric technologies include thin-film photovoltaic (PV) and CSP technologies include dish engine, power tower, and trough. PG&E states that the Solar Center project will assess and provide independent evaluations of the effectiveness of solar equipment

[55] page 31.

[56] SB 1036, effective January 1, 2008, modifies elements of the RPS program. SB 1036 eliminates the responsibility of the CEC to award supplemental energy payments (SEPs) to eligible renewable energy resources to cover above-market costs of renewable energy contracts.

systems. PG&E explains there are few such testing facilities in the world, and the two accredited facilities in the United States are experiencing a backlog.[57]

PG&E's funding request of $2 million is only 20% of the facility's required budget of $8 million over the next five years. PG&E is structuring the arrangement so that 75% of its $2 million contribution requires formal commitments for matching funds by other sources.[58] In addition, PG&E expects the Solar Center will charge fees-for-service that will provide additional funding. In return for its contribution, PG&E will receive solar testing services from the Solar Center and expert consultation for the next five years. As a result of this project, PG&E expects to receive critical information related to performance, safety and reliability from a broader range of solar technologies than under commercial use today.

We agree this is a worthwhile ERRP project that is consistent with our goals for ERRP. As explained by PG&E, the Solar Center project should reduce the cost of solar technology, accelerate market entry, and demonstrate the potential for commercial applications. Since California leads the country with the most installed megawatts of solar thermal and solar PV, California ratepayers can benefit from a solar testing facility located within the state that helps accelerate deployment of new, cost-effective technologies. The untapped solar potential in the state is substantial.[59] On a statewide basis, NREL estimates

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[57] Accredited solar testing facilities are available in Arizona and Florida, and similar but non-accredited facilities in New Mexico and Colorado.

[58] PG&E's Response, p. 32.

[59] See, www.seia.org/yearinreview.php., p. 5.

the potential of advanced solar thermal technologies to be 877 gigawatts (GW) of capacity, or over 2 million gigawatt hours (GWh).[60]

The center will benefit all three investor-owned utilities since they all have a good solar resource within their territories. Other publicly-owned utilities can benefit as well since the solar resource is distributed throughout the state. The information provided by the solar testing center will help the IOUs and other utilities exploit the sun's potential and help the state meet its long-term renewable and GHG goals. We also note that this project meets our criteria that maximum project funding is limited to 80% of total estimated project cost.

Therefore, we authorize PG&E to incur up to $2 million for the UC Merced Solar Testing Center as described in the Application and record and recover these costs as described in Section 5.11.

7.2. Wastewater Biomethane Demonstration Project

SDG&E has requested $4 million to fund the WBD project that will test and commission biogas cleaning equipment at one or more installations in order to produce pipeline quality biomethane. SDG&E states this project is intended to upgrade biogas from 55-75% methane to 97% methane and also remove trace components so that the biogas can be used in natural gas pipelines. SDG&E notes that wastewater biogas has been demonstrated in Europe, but not commercially in California. While California can learn from Europe's experience, the technology is not completely transferable since California has different air quality standards and the composition of the wastewater is site-specific. SDG&E explains that the WBD project will further the potential for cost

[60] *Id.,* p. 16.

reductions due to increased economies of scale, and address permitting, quality control and monitoring standards. SDG&E also points out that the WBC project will utilize an existing resource, help meet GHG targets, and can be used in existing natural gas-fueled generators.

SDG&E estimates that there are twenty potential sites within SDG&E and Southern California Gas Company (SoCalGas) service territories that can use this technology. Depending on the size of the plant, the total potential at these twenty sites is between 10 – 100 GWh [61] of Electric Energy Equivalent.[62] According to the CEC PIER's preliminary roadmap for development of biomass in California[63], the statewide potential for wastewater biomethane is approximately 10 trillion Btu, or approximately 1400 GWh of Electric Energy Equivalent.

We agree that the WBD project should be approved. However, consistent with our cost sharing requirement that maximum ratepayer funding is limited to 80% of estimated project cost, we will only authorize SDG&E to incur up to $3.2 million instead of $4 million for the WBD project as described in the Application and to record and recover these ERRP costs as described in Section 5.11. We are approving this project although no matching funds have been proposed. Rather than risk a delay in initiating the WBD while other funds are identified, we believe that SDG&E should begin this project now. SDG&E,

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[61] SDG&E's Response, p. 8.

[62] Electric Energy Equivalent is calculated using a combined cycle heat rate of 7000 British thermal units (Btu) per kilowatt hour.

[63] CEC-500-2006-095 p. 10.

however, is required to obtain the 20% in matching funds and report to the ED when it obtains this additional funding.

7.3. WaveConnect

PG&E proposes to document the feasibility of a facility that converts wave energy into electricity by using wave energy conversion (WEC) devices in the open ocean adjacent to PG&E's service territory. PG&E explains that WEC devices have been tested in Europe and Hawaii but have not demonstrated for commercial viability. PG&E believes that wave power is a viable energy source along California's coast, and received preliminary Federal Energy Regulatory Commission (FERC) permits in March 2008.

PG&E proposes that WaveConnect will be funded in three stages. The first stage includes all of the feasibility and licensing work for the two wave sites and is estimated to cost $6 million over 3 to 5 years. These costs include fees for consultants, legal services, engineering and technical consultants, environmental studies, design and planning for WEC devices and costs for the deployment of a limited number of WEC devices for testing. The second stage, estimated to cost between $15-$20 million per site over 2-4 years, includes development of infrastructure, undersea cabling, and greater numbers of WEC devices.[64] During stage three, the most promising WEC devices will be deployed in larger quantities up to 40 Megawatts per site and connected to the grid. PG&E does not have a cost estimate for Stage 3. In the Application, PG&E is only requesting funding for Stage 1. PG&E states it will request funding for Stages 2 and 3 either

[64] PG&E's Response filing, p. 41.

in separate applications or through subsequent ERRP AL filings. A description of proposed activities for Stage 1 is provided below.

Table 2: Proposed WaveConnect activities for Stage 1, Years 1-5[65]

Year 1 Initial Assessment	**Year 1 - continued Detailed Assessment**	**Years 2-3 License Application Development**	**Years 4-5**
Begin discussions with stakeholders	Continue detailed discussions with stakeholders	Continue discussions with stakeholders	Continue environmental and other studies to support license application
Begin competitive selection process	Conduct detailed resource analysis	Finalize technology selection and design	Anticipate FERC development license granted
Begin wave resource studies	Identify and quantify site constraints	Perform technology testing	
Begin initial siting analysis	Develop construction and interconnection strategy for potential sites	Continue environmental and other studies needed for license activities	
Identify preliminary shortlist of deployment sites within permitted area	Begin WEC device evaluation	File license application	
Identify preliminary studies and begin preliminary work on those studies	Continue and expand environmental studies	Possibly install limited number of test devices to support licensing activities	
	Develop energy yield analysis		
	Develop initial financial models		
	Compile information for and file NOI/PAD		

Although interested parties do not object to either the Solar Center or WBD ERRP projects discussed above, IEP contends that WaveConnect should be

[65] *Id.,* adapted from information provided on pp. 33-34.

denied ERRP funding. IEP argues that PG&E's WaveConnect project would provide project development costs and give PG&E an unfair advantage over independent power producers in a competitive solicitation. IEP recommends that if PG&E wishes to pursue wave energy, it should do so through a competitive wave energy RPS solicitation. In response, PG&E argues that the results of the WaveConnect project will not be known for 3 to 5 years, at which time a commercial plant may or may not be proposed. Furthermore, PG&E notes the immediate aim of WaveConnect is not to develop a commercial generating facility to compete against other project developers, but to evaluate the feasibility of extracting energy from ocean waves.

PG&E states that wave energy has tremendous potential as a renewable energy source since California has over 750 miles of coastline, or over 37,000 MW of potential, of which an upper limit of about 20% could be converted into electricity. PG&E estimates that an average 7460 MW might be expected to generate up to 65 terawatt hours (TWh) per year from California's ocean waves.[66] California's 2005 total energy generated was 288 TWh. Thus, wave energy could potentially provide 23% of California's current electricity consumption.[67] It should be noted, however, that this estimate is an upper limit, since environment impacts, land-use, and grid interconnection constraints will likely impose limits on development. The wave potential along the 600 miles of Pacific Ocean coastline in PG&E's service territory is also very good, and has a higher wave energy climate than further south.[68]

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[66] PG&E's Response, p. 10.

[67] *Id*.

[68] *Id*., p. 13.

Other states and countries are in various stages of testing wave energy projects. Recently PG&E filed an AL for approval of a PPA from a potential wave energy provider.[69] The State of Oregon has also begun exploring wave energy projects.[70] While these developments suggest wave energy may become a more common energy source, the question remains as to whether we should wait until other possible wave energy developers enter the market, or approve the WaveConnect project as a means of furthering wave energy development now. It is apparent that legislation encouraging renewable power and reductions in GHG strongly support all reasonable cost effective means to achieve these ends. Furthermore, as proposed by PG&E, the commercial development of wave energy is not an immediate goal but rather a lengthy study necessary to prove or disprove the potential for wave energy from various WEC devices. On that basis we believe it important to begin expanding our knowledge and understanding of whether wave energy is a reasonable means for achieving these goals now rather than waiting to see how this market may develop.

We will conditionally authorize PG&E to begin the WaveConnect project as part of its ERRP. However we are less certain about the WaveConnect project as proposed over the many years outlined in the Application and WaveConnect information provided in PG&E's Response. We desire to allow PG&E to move forward with the tasks to complete the goals and milestones in year one, including steps necessary to file the Pre-Application Document by March 2009, which is the next milestone in the FERC licensing process. While PG&E is conducting these activities, ED and its TRP consultants will review the other

[69] AL 3181-E.

[70] PG&E Response, p. 42.

activities proposed in Stage 1 from years two through five. As a result, we only authorize PG&E to spend up to $2 million in ERRP funds to cover the expenditures necessary to complete the tasks for Year 1.

Once the TRP is established, it will review WaveConnect and recommend to ED whether, and how much additional spending is reasonable. Following this review, and upon receipt of a letter from the Energy Division directing PG&E on how to proceed, PG&E may file a Tier 2 or Tier 3[71] AL requesting additional funds for the WaveConnect project. In this AL filing, PG&E must demonstrate that it has acquired additional funds covering at least 20% of the total amount requested for Stage 1.[72] PG&E shall record and recover these costs as described in Section 5.11.

In addition to seeking funding for Stage 1, PG&E indicated that it would seek funding for Stages 2 and 3 through subsequent ERRP AL filings or through applications. Since the maximum ERRP funding for one project is $7 million dollars, PG&E cannot exceed this limit over the life of WaveConnect. Thus, if PG&E is authorized to expend up to $6 million for Stage 1 through ERRP, WaveConnect will only be eligible for $1 million in additional funding for future stages. PG&E cannot request over $7 million in ratepayer funding for WaveConnect through subsequent ERRP funding periods nor through a separate application.

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[71] ED will direct PG&E which AL to submit prior to the filing.

[72] For example, if PG&E needs $6 million to fund Stage 1, then it must demonstrate that other sources are providing at least $1.2 million.

8. Conclusion

For all of the foregoing reasons, we grant the request of Joint Applicants to establish ERRP as discussed herein.

9. Categorization and Need for Hearings

In Resolution ALJ 176-3196, July 26, 2007, the Commission preliminarily categorized this Application as ratesetting, and preliminarily determined that hearings were not necessary. Although DRA protested the Application, parties agreed that hearings were unnecessary, and that issues should be addressed through briefs. Given this status, an evidentiary hearing is not necessary and the preliminary determinations made in Resolution ALJ 176-3196 with regard to categorization and hearings are affirmed.

10. 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 _____, and reply comments were filed on _____ by _____.

11. Assignment of Proceeding

Timothy Alan Simon is the assigned Commissioner and Bruce DeBerry is the assigned ALJ in this proceeding.

Findings of Fact

1. ERRP addresses a strategic element in the RPS program intended to increase the supply of renewable energy technologies in order to put downward pressure on price.

2. One of the two central recommendations of ETACC to the ARB is to promote clean energy innovation and commercialization.

3. The RPS mandate for 20% renewable energy in 2010 will be increasingly difficult to obtain due to the increased demand for limited renewable resources, rising prices, and grid integration issues.

4. The RPS goal for 33% renewable energy in 2020 will be even more difficult to obtain due to the increased demand for limited renewable resources, rising prices, and grid integration issues.

5. The April and July 2007 RPS Quarterly Reports to the Legislature indicate increasing prices for renewable energy.

6. ERRP should encourage competition by supplying more renewable energy and giving utilities additional knowledge in making renewable energy procurement decisions.

7. The renewable technology assessment report will assess, on a state-wide basis, the renewable technologies that meet the high-level principles and guidelines established herein. This report will also identify priority technologies that fit the renewable resource needs of each IOU.

8. ERRP funds should be spent on projects that will reach commercialization in the short to medium term.

9. Individual IOU investment plans will provide a framework for project selection.

10. The types of projects proposed for ERRP are complex and specialized, and thus require a greater level of expertise than provided by ERRCC or ED.

11. ERRP projects require careful review, oversight and monitoring.

12. Expenditure of ratepayer funds on ERRP projects requires close monitoring by the Commission and evaluation and assessment by technical and financial experts.

13. It is unlikely that proposed ERRCC members would be able to completely assess the commercial risks and costs of ERRP projects.

14. ERRP projects should avoid duplication with other emerging renewable or RD&D programs.

15. ERRP should have a direct impact on the commercialization of an ERRP funded project.

16. RPS contracting protocols are not designed to evaluate pre-commercial technologies.

17. ERRP is structured to provide the necessary technical and financial review for emerging technology projects.

18. Joint Applicants requested that ERRP funds would be used to fund a two-year program, but do not include administrative costs associated with utility staff.

19. ERRP projects should already be proven in the laboratory and it is reasonable to expect that project developers and proponents have some assurance of project success.

20. The PIER program requires matching funds for many of its projects.

21. The CSI Plan states that cost-sharing is a criterion for project selection.

22. The CICS requires matching funds.

23. Requiring parties other than ratepayers to participate in the risk of ERRP projects provides some additional assurance that another party has evaluated an ERRP project and believes in its success.

24. Our adopted sharing of risk and project cost is not burdensome, is unlikely to halt project proposals, and recognizes the cost sharing principles existing in similar RD&D programs.

25. As ERRP is a new program and as the categories of ERRP projects are uncertain, a project cost range of $100,000 to $7 million is reasonable.

26. The Assessment Report will assess renewable technologies, identify priority technologies that fit renewable resource needs of each IOU, and will assess technologies to facilitate renewable energy utilization and integration.

27. It is reasonable to establish a TRP.

28. In order to attract potential technologies, IP must be protected. However, it is also important for IP information to be shared broadly if the goal of expanding renewable energy supplies is to be realized.

29. ERRP projects proposed in this Application are diverse.

30. Adopting detailed IP procedures applicable to all ERRP projects may be difficult and time-consuming.

31. The Solar Center will assess and provide independent evaluations of the effectiveness of solar equipment systems.

32. California currently does not have an accredited solar testing facility.

33. The Solar Center is a worthwhile ERRP project consistent with ERRP goals.

34. The Solar Center project should reduce the cost of solar technology, accelerate market entry and demonstrate the potential for commercial applications.

35. The WBD project is intended to test and commission biogas cleaning equipment and upgrade biogas from 55 - 75% methane to 97% methane, and remove trace components.

36. The WBD project will utilize an existing resource, help meet GHG targets, and can be used in existing natural gas-fueled generators.

37. WEC devices have been tested in Europe and Hawaii but have not been demonstrated for commercial viability in California.

38. The results of the WaveConnect Stage 1 will not be known for 3 to 5 years.

39. Legislation encouraging renewable power and reductions in GHG strongly support all reasonable cost effective means to achieve these ends, including consideration of wave energy.

40. WaveConnect is a lengthy study necessary to prove or disprove the potential for wave energy from various WEC devices.

41. Accounting for ERRP costs through the ERRA will provide transparency in tracking ERRP actual expenditures against budgeted amounts.

42. It is premature to adopt an accounting procedure for ERRP work products, facilities or equipment remaining after ERRP projects are completed.

Conclusions of Law

1. SB 1078 established the RPS program with a stated intent of attaining 20% renewable energy by 2017. SB 107 codified the acceleration of the 20% renewable energy target to 2010.

2. In order to expand the supply of renewable energy technologies, long-term strategies must develop new renewable energy technologies.

3. ERRP helps to fulfill the requirements of SB 1078, SB 107, and SB 1036 by providing additional renewable energy technologies.

4. IOUs are responsible for RPS procurement.

5. Joint Applicants should identify ERRP projects through project solicitations and not through bilateral discussions or agreements.

6. ED should establish the TRP consistent with the directives in this decision.

7. Joint Applicants with guidance from TRP contractors and the IE should use the investment plans as a framework for technologies in project solicitations.

8. IOUs should negotiate IP terms in each contract subject to review by ED.

9. The types of ERRP assets which might be sold and provide a gain-on-sale for ratepayers, are different than the gain-on-sale of assets reflected in D.06-12-043.

10. March-in rights should be available to ratepayers and others funding ERRP projects if an ERRP contractor develops a patentable technology but does not patent it or patents the technology but does not take subsequent steps to commercialize it.

11. It is reasonable to allow PG&E to recover up to $2 million in its ERRA for costs related to the Solar Center.

12. It is reasonable to allow SDG&E to recover up to $3.2 million in its ERRA for costs related to the WBD project.

13. It is reasonable to allow PG&E to recover up to $2 million in its ERRA for costs related to the first year of Stage 1 for the WaveConnect project.

14. This order should be effective today so that PG&E and SDG&E may establish their ERRP immediately.

INTERIM ORDER

IT IS ORDERED that:

1. Pacific Gas and Electric Company (PG&E) is authorized to establish an Emerging Renewable Resource Program (ERRP) as discussed herein and spend up to $30 million over a period of two-years on ERRP projects approved through Tier 3 Advice Letter (AL) filings with the Commission's Energy Division (ED).

2. San Diego Gas and Electric Company (SDG&E) is authorized to establish an ERRP as discussed herein and spend up to $15 million over a period of two-years on ERRP projects approved through Tier 3 AL filings with ED.

3. PG&E and SDG&E shall file ERRP investment plans every two years with the Commission, as discussed herein.

4. PG&E and SDG&E shall solicit projects through a competitive project solicitation and not through bilateral negotiations or other agreements.

5. PG&E and SDG&E shall each establish a sub-account within their respective Energy Resource Recovery Accounts (ERRA) to record ERRP costs.

6. PG&E and SDG&E shall track administrative and internal costs for review in future general rate cases.

7. The maximum ratepayer charge for any ERRP project is limited to $7 million regardless of project duration.

8. The maximum ratepayer funding of a single project is limited to 80 percent of the project costs.

9. ED shall establish a technical review process (TRP) as discussed herein.

10. ED shall develop the renewable technology assessment report as discussed herein.

11. Cost for TRP consultants shall be charged to ERRP.

12. ED shall develop procedures for monitoring and recommending changes in ERRP projects.

13. ED shall hold a workshop within 90 days of the effective date of this decision for the purposes described herein.

14. PG&E is authorized to undertake the University of California Merced Solar Center (Solar Center) ERRP project, and spend up to $2 million on the Solar Center ERRP project.

15. SDG&E is authorized to undertake the Wastewater Biomethane Demonstration (WBD) ERRP project, and spend up to $3.2 million for the WBD ERRP project.

16. PG&E is authorized to undertake its wave energy (WaveConnect) ERRP project, and spend up to $2 million on the WaveConnect ERRP project to complete activities for year one.

17. PG&E may file for authorization for additional WaveConnect funds following further review and approval by ED.

18. Application 07-07-015 is closed.

This order is effective today.

Dated _____, at San Francisco, California.