Decision **PROPOSED DECISION OF COMMISSIONER PEEVEY**
(Mailed 2/11/2008)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to establish the California Institute for Climate Solutions.	Rulemaking 07-09-008 (Filed September 20, 2007)

OPINION ESTABLISHING CALIFORNIA INSTITUTE FOR CLIMATE SOLUTIONS

TABLE OF CONTENTS

OPINION ESTABLISHING CALIFORNIA INSTITUTE FOR CLIMATE SOLUTIONS

1. Summary

Confronting climate change is the preeminent environmental challenge of our time. As we noted in the Order Instituting Rulemaking (OIR), stabilizing greenhouse gas (GHG) emissions will require an economic and technological transformation on a scale equivalent to the Industrial Revolution.[1] This decision, by creating the California Institute for Climate Solutions, (CICS or Institute) adopts a bold and innovative approach to expanding California's leadership on this most pressing of environmental issues. The mission of the CICS is consistent with the purpose and findings contained in Assembly Bill (AB) 32, The Global Warming Solutions Act of 2006,[2] and Senate Bill (SB) 1368, regulating emissions of GHG from electric utilities.[3] In AB 32, the Legislature found that global warming "poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Section 38501(a).) In SB 1368, the Legislature determined that "it is vital to ensure all electricity

---

[1] Eileen Claussen, *Technology and Climate Change: Sparking a New Industrial Revolution* (March 10, 2002), http://www.pewclimate.org/press_room/speech_transcripts/transcript_technolog.cfm

[2] AB 32 (Stats. 2006, Ch. 488, effective September 27, 2006), codified in Division 24.5 of the Health and Safety Code.

[3] SB 1368 (Stats. 2006, Ch. 598, effective September 29, 2006), codified in Division 4.1, Chapter 3, Section 8340 of the Public Utilities Code.

load-serving entities [LSE] internalize the significant and underrecognized cost of emissions recognized by the PUC with respect to the investor-owned electric utilities (IOU), and to reduce California's exposure to costs associated with future federal regulation of these emissions." (SB 1368, Section 1(g).)

The Institute will provide significant benefit to ratepayers by accelerating applied research and development (R&D) of practical and commercially viable technologies that will reduce GHG in order to slow global warming, as well as technologies that will allow California to adapt to those impacts of climate change that may now be inevitable. The Institute will have a particular focus on speeding the transfer of these technologies from the laboratory to market place.

The funding for the CICS, $60 million per year for 10 years via a new surcharge on customer bills, is an investment in California's future that we expect will benefit all Californians. We think it is appropriate to take steps to ensure that the benefits that flow from the Institute's research benefits all Californians, regardless of socioeconomic status. To this end, we form a Workforce Transition Subcommittee (WTS) of the Governing Board that will study ways to support the energy sector's transition to a carbon-constrained future through anticipating and preparing for the resultant changes in its workforce needs. This subcommittee will submit a report to the Governing Board and the Commission in one year from its initiation, and the Commission shall act on its recommendations within 120 days from receipt. Further, the Commission expects that the practices and policies of the hub and the resources of the host institution will be used to support participation that is broadly representative of the population of California in the projects funded by the CICS.

The investment in the Institute will leverage the State's considerable intellectual capital for the purpose of accomplishing the following mission:

(1) To administer grants for mission-oriented, applied and directed research that results in practical technological solutions and supports development of policies likely to reduce GHG emissions or help California's electricity and natural gas sectors adapt to the impacts of climate change.

(2) To speed the transfer, deployment, and commercialization of technologies that have the potential to reduce GHG emissions in the electric and gas sectors or otherwise mitigate the impacts of climate change in California.

(3) To facilitate coordination and cooperation among relevant institutions, including private, state, and federal entities, in order to most efficiently achieve mission-oriented, applied and directed research.

These pillars of the Institute's mission will be supported by the formation of new channels of communication between academics, utilities, business, environmentalists, researchers, policy-makers, investors, and the public.

In order to provide direction to the Institute's mission, maximize ratepayer benefit, and minimize unnecessary redundancy, the Institute's Strategic Research Committee (SRC) shall first develop a Strategic Plan that will identify those areas of research and technological innovation that are most likely to achieve the greatest GHG reductions in the energy sector at the lowest cost. The Strategic Plan will be the framework from which the Institute will formulate its budget, short-term and long-term goals and grant administration process. The Strategic Planning process is to be structured in a way to maximize ratepayer benefit and cost-effectiveness, while avoiding redundancy.

The Institute will fund mission-oriented applied and directed research with an emphasis on the development and rapid transfer of the knowledge gained to the electric and gas sectors for implementation. The Institute will reduce GHG emissions within the state both by transferring technology for cleaner energy and improved energy efficiency (EE) that has already been developed and by formulating new commercially viable technology.

In order to maximize the intellectual resources available within the State, the Institute will work collaboratively with California's academic institutions, including the University of California (UC), the California State University and Community College systems (CSU/CC), Stanford University (Stanford), the California Institute of Technology (CalTech), the University of Southern California (USC) as well as California's national research laboratories: Lawrence Berkeley National Laboratory, Lawrence Livermore National Laboratory, Sandia National Laboratory, the Jet Propulsion Laboratory, and the National Aeronautics & Space Administration Ames Research Center (National Laboratories). These institutions will be a critical link in developing and commercializing new technologies through the CICS grant process.

The location of the hub or headquarters of the Institute will be determined through a competitive, peer-reviewed process.

Finally, in today's decision, we take care to ensure that the Institute will remain accountable to the Commission and the ratepayers. First, one Commissioner and the Director of the Division of Ratepayer Advocates (DRA) have seats on the Governing Board. Second, the Commission will retain oversight over the Institute by having the following decisions placed on a Commission agenda for Commission approval: all non ex officio appointments to the Governing Board; appointments to the Executive Committee; the Strategic Plan; short-term and long-term strategic plans; slate of grant recipients; annual budget; and annual report.

And most importantly, this decision is not a contract and may be modified by the Commission at any time pursuant to its authority under Pub. Util. Code

§ 1708.[4] We also clarify that the Charter for the Institute may not be modified or changed without Commission approval. In addition, we recognize that the Legislature could initiate efforts to address climate change and replace ratepayer funding with funding from other revenue sources.

The Institute Charter, the Governing Board Conflict of Interest Policy, and the Governing Board composition chart are attached to this decision in Appendices A-C.

2. Background

On September 20, 2007, the Commission issued an Order Instituting Rulemaking (OIR) as part of its continuing effort to aggressively pursue creative and cost effective ways to reduce GHG emissions in the energy sector within California. The OIR included a proposal from UC to establish the CICS, hosted at UC, funded by ratepayers at a proposed level of $60 million per year for 10 years, dedicated to supporting California's research institutions in initiating applied and directed research with an emphasis on the development and rapid transfer of the knowledge gained to the electric and gas sectors for implementation. The OIR established that the proceeding would focus on the appropriate governance structure for the institute, on priorities for research and technology development that would benefit utility ratepayers by reducing GHG emissions, and on establishing a funding mechanism for the Institute.

---

[4] Pub. Util. Code § 1708 provides: 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 the parties , have the same effect as an original order or decision.

The OIR invited parties to comment on UC's proposal. The California Council on Science and Technology (CCST), California Farm Bureau Federation (CFBF), CSU, CalTech, the Community Environmental Council (CE Council), Consumer Federation of California (CFC), DRA, the Energy Producers and Users Coalition (EPUC), the Indicated Producers (IP) and the Western States Petroleum Association (WSPA), Environmental Defense, Greenlining Institute (Greenlining), Independent Energy Producers (IEP), Morrison and Foerster, LLP (Morrison and Foerster), Natural Resources Defense Council (NRDC), PacifiCorp, Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company and Southern California Gas Company (SDG&E/SoCalGas) Southern California Generation Coalition (SCGC), Stanford, USC, The Utility Reform Network (TURN), and UC filed comments on the proposal in the OIR. UC's comments included a refined proposal that incorporated many changes in response to questions and concerns that parties raised in response to the initial UC proposal. Alliance for Retail Energy Markets (AReM), CCST, CalTech, DRA, Greenlining, IEP, Merced Irrigation District and Modesto Irrigation District (MID/MID), Morrison and Foerster, NRDC, PacifiCorp, PG&E, SCE, SDG&E/SoCalGas, Stanford, USC, and UC filed response comments.

A workshop was held on December 12, 2007 and presentations were made by numerous stakeholders, including UC, Stanford, USC, CSU/CC, the California Institute for Energy and the Environment, the Commission's Energy Division (ED), PG&E and SCE, other state agency programs, including the Public Interest Energy Research (PIER) Program under the California Energy Commission (CEC) and the California Air Resources Board (CARB), environmental groups, including NRDC, and ratepayer and consumer groups.

Post-workshop comments were received from SDG&E/SoCalGas, MID/MID, NRDC, DRA, Greenlining, and the CE Council.

We greatly value the input and comments received by all parties. Opening, reply, and workshop comments are summarized and attached in Appendix D.

On February 11, 2008, the proposed decision (PD) was issued. Comments were received by March 3, 2008 from CCST, CFC, CE Environmental Council, DRA, EPUC/IP/WSPA, Greenling, IEP, NRDC, PG&E, SCE, SDG&E/SoCalGas, SCGC, Utility Consumers' Action Network (UCAN), California Manufacturers and Technology Association (CMTA), and California Hydropower Reform Coalition (CHRC).[5] Replies were received from CFC, DRA, SCE, TURN, and UC.

Overall, parties who had previously participated in this Rulemaking were generally supportive in their comments of the Institute and its mission and recognized the efforts that the PD made to incorporate many of the suggestions posited during the comment process. We appreciate, however, parties continued attempts to suggest ways we could clarify issues, correct errors, and make the Institute a reflection of the Commission's leadership in addressing global warming and climate change, while being mindful of our obligations to ratepayers. We acknowledge that not all comments were supportive and we seriously considered the arguments raised against the establishment of the

---

[5] Concurrently with the filing of comments, UCAN, CMTA and CHRC filed Motions for Party Status, which are hereby granted.

Institute, either in toto, or because it is funded by a surcharge on ratepayers of the ratepayer funding issue.

In response to both the supporting and opposing comments, we made many minor corrections and changes amendments, and we incorporated suggested modifications in the following areas:

- We amend the Charter to function as a stand-alone document without reference to the decision. We clarified that the Charter cannot be changed without approval of the Commission;

- We specify steps and procedures that ensure more oversight, governance and involvement by the Commission with the Institute and in particular with the selection of the non-ex officio appointments to the Governing Board, and appointments to the Executive Committee, the Strategic Plan with the approval of the long-term and short-term strategic plans, as well as the annual proposed budget, and annual reports and intellectual property (IP) policies and protocols specific to the Institute.

- We state that customers whose rates are frozen under AB 1X and customers eligible for California's Alternative Rates for Energy (CARE) program and customers eligible for the California's Alternative Rates for Energy (CARE) program shouldwill be exempt from paying for the electric and gas surcharge to fund the Institute;

- We now require more of an on-going consultation and collaborative process between the Institute Executive Director and the Commission on the preparation of the annual report, budget and Strategic Plan. Once these reports are submitted to the Commission, the Executive Director is to be available for a question and answer session at a public meeting of the Commission;

- We clarify that the Institute, its funding and its functions, are to work in concert with, but not duplicate, the programs implemented pursuant to AB 32, as well as the Commission's ongoing efforts in the areas of EE and clean energy;

- We added a requirement that 100% of the $600 million ratepayer investment will be matched with non-ratepayer funds over the 10-year life of the Institute;

- A ratepayer benefit index is to be a key component of the Strategic Plan that will then inform the grant selection process from solicitation through selection. Grant applications are to include a discussion of the ratepayer benefits the specific research project is expected to produce and the grant selection process must rank proposals based upon a ratepayer benefit index. Proposals with no discernable ratepayer benefit will not be chosen for CICS grant funding;

- Ratepayer funding is to be used as a catalyst for matching funds from other sources, and the Annual Report submitted by the Institute Executive Director will describe efforts each year to secure non-ratepayer funding, with a 100% match expected annually beginning in Year 5; and each year the Institute Executive Director will report, in the Annual Report, on efforts to secure non-ratepayer funding; and

- The Intellectual Property (IP) discussion now reflects is clarified changes so that the Technology Transfer Subcommittee (TTS) will establish IP policies and protocols specific to the Institute and submit them to the Commission for approval. We direct the TTS to return at least 10% of net revenues to ratepayers unless violative of any laws.

- The Workforce Training and Education section has been modified. Instead of the Commission making a determination in this decision about what kind of workforce development and education may be needed, the Workforce Transition Subcommittee (WTS) will study wether there is a need to support the energy sector's transition to a carbon-constrained future through anticipating and preparing for the resultant changes through workforce development and report back to the Commission on the study within six months of the Institute's inception. If the study supports having the Institute fund grants for the emerging workforce development, the Commission can allocate an appropriate percentage of Institute funds for that purpose. The Commission must act on the WTS report within three months.

3. The California Institute for Climate Solutions

3.1. Need

In the OIR, we asked parties to comment on whether there was a need for the types of research and educational programs outlined in the original UC proposal and whether there was a need for the scale of research contemplated by the $60 million per year funding proposal.

NRDC illustrates in its Opening Comments that public investment in energy R&D nationally has been declining for decades. Public interest energy R&D in California hit a high of $150 million in 1991, declined to $63 million in 1994, and, thanks to system benefits charge contributions to the PIER program, has only recently risen back up to its previous levels. Unfortunately, the $62.5 million approved for the PIER program is scheduled to sunset in 2011, at which point public funding of energy R&D may return to its 1994 level.

Both NRDC and the CE Council argue that, at least on a national scale, a five to ten fold increase in spending on energy and climate-related R&D may be needed to meet the problems of climate change and that such investment would be repaid in technological innovation, business opportunities, and job growth.[6]

SDG&E/SoCalGas contend that while there is a great deal being spent on climate-related research, there is little being done to bridge the "gap between the

---

[6] Daniel M. Kammen, Gregory F. Nemet, "Real Numbers" (Oct. 9, 2005). Issues in Science and Technology. The University of Texas at Dallas.

scientific frontier and practical technology." Similarly, Morrison and Foerster argue that there is a strong need for an organization, such as the CICS, that can evaluate climate change issues from a broader perspective than a pure grant-making body.

Several parties, including EPUC/IP/WSPA, maintain that while climate change is clearly an important issue, California is already spending a great deal on it and the Commission should first conduct an inventory of current state spending on climate change related research to avoid funding redundant programs. CFC, among others, contends that the PIER program is already doing much of what the proposed Institute would do and that creation of the Institute would, therefore, interfere with the coordination of state policy. Other programs and research efforts that some parties claim may overlap with some the Institute's functions are Helios, the Energy Biosciences Institute (EBI) and the Commission's proposed Emerging Renewable Resource Program (ERRP).

The Commission agrees that redundancy in research is not desirable because it may result in unnecessary ratepayer and taxpayer expenditures. To ensure that this does not occur, we have as the first priority of the Institute and the SRC, the development of an inventory that will catalog publicly and privately-funded climate change-related research. When the inventory is complete, it should be submitted to the Commission as a status report. This inventory, which should be informed by the listing prepared in response to a motion filed in this proceeding by Joint Parties, will ensure that there is no duplication of efforts or unnecessary expenditure of ratepayer or public funds.[7]

---

[7] On December 11, 2007, California Large Energy Consumers Association, TURN, EPUC/IP/WSPA, and California Manufacturers & Technology Association (Joint

Footnote continued on next page

In preparing this inventory, the Institute shall draw directly on the results of any previous inventory efforts and consult appropriate staff from relevant public agencies. The process of creating an inventory will promote efficiency and facilitate coordination and collaboration among affected agencies, academic institutions and the private sector.

Other parties indicate that there are specific areas of need that the Institute will be well positioned to address, such as: energy storage, the development of "second generation" EE and renewable technologies in the electric and natural gas sectors, smart technologies in the distribution and transmission of electricity and gas, and strategies for mitigating the physical impacts of climate change on California ratepayers. While these may all indeed be areas of great need, the Commission cannot determine at this time whether they are a better and more cost-effective investment of ratepayer funding than other possible areas of research. Accordingly, we do not, in this decision, prescribe any specific areas of research. Instead we require that the Institute engage in a comprehensive Strategic Planning process, through the SRC, prior to funding any grants in order to identify what areas of study can achieve the greatest reductions at the lowest cost, within appropriate time frames, and to the greatest ratepayer benefit.

Several parties question whether and how ratepayers will benefit from funding research and development of the kinds of technologies described in the

---

Parties) filed a Motion, in this proceeding as well as R.06-04-009 and Application 07-08-031, for an Inventory of all Utility Ratepayer Funded Programs and all GHG Reduction Programs for the Electricity and Natural Gas Sectors. In response to that motion, the Commission is directing parties in the 2008 LTPP OIR, R.08-02-007, the umbrella proceeding for procurement related issues, to produce such an inventory.

Footnote continued on next page

UC proposal. Others, including CFC are concerned with burdening California ratepayers with the cost of the CICS.[8] This line of reasoning brushes aside the near certainty that Californians will face higher electric bills and other expenses if global climate change continues unabated or efforts to reduce GHG emissions are deferred.

A national leader, the State of California, through passage of AB 32, set aggressive goals to reduce GHG emissions in the coming years. While the specific source of these reductions and how they will be achieved is far from certain, what is clear is that the electricity sector, which accounts for approximately 20% of all GHGs released within California each year, will play a central role in meeting targeted reductions. Since it is not possible to precisely predict what technologies Institute-funded research will yield, any effort to calculate the total monetary benefits, much less the portion of those benefits flowing to California ratepayers would be highly speculative. However, we believe, as the Stern Review[9] concludes, that the benefits of early action on climate change are likely to outweigh the cost of delaying action.

While it is difficult to quantify the benefits that the CICS will provide to California ratepayers, we can identify the likely sources of those benefits:

Pursuant to an Administrative Law Judge's ruling in R.08-02-007 the inventory is due May 16, 2008. We hereby rule that the motion filed in this proceeding is now moot

[8] CFC, Corrected Comments, p. 2.

[9] *Stern Review on the Economics of Climate Change*, 2006. HM Treasury, United Kingdom. http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm.

1. Technologies that improve efficiency in generating and using electricity and natural gas will provide a direct benefit to California ratepayers by reducing their utility costs and improving reliability of the electric system.
2. Given the high likelihood of a multi-sector state-wide, regional or national cap-and-trade program for GHGs, even technologies that contribute to cost-effective GHG reductions in other sectors of the economy will help to relieve demand for GHG allowances and thereby contribute to lower allowance costs for the consumption of electricity and natural gas.
3. To the extent that the CICS produces technologies that contribute to reductions of GHG emissions in California or elsewhere, California ratepayers will benefit from mitigation of the real costs of climate change.

Again, precisely quantifying these benefits is difficult. There is, however, convincing evidence that increased R&D in the energy sector saves ratepayers' money. Looking to data from other ratepayer-funded investments in R&D, such as a 1998 to 2003 review of the electric and natural gas PIER program, "[ratepayer] benefits from these investments are projected to be between $1.60 and $4.10 for every dollar contributed."[10] Preceding PIER, the utilities' investments in R&D via the Electric Power Research Institute (EPRI) also provided demonstrated return on investment to ratepayers.[11] Since we cannot

---

[10] NRDC Opening Comment at 9, citing *2004 Annual Review of the PIER Program Volume 1 - Commercial Successes and Benefits*, publication #CEC-500-2005-055-V1. March 2005 at p. 3.

[11] *See* NRDC Opening Comments at 9-10: "A 1994 report by PG&E on the value of its billpayers funded membership in EPRI showed that over the 1986-1993 period the benefit-to-cost ratio for billpayers was 6 to 1. When the anticipated benefits and costs for the period 1994-1998 were added to the 1986-1993 data, the resulting overall ratio was 5 to 1 for the 13-year period. An SCE study showed similar results. The high-benefit/cost results indicated that, in general, utility research money was well spent,

Footnote continued on next page

know what specific kinds of research will be conducted until after the Strategic Plan Roadmapping process has been completed, we cannot precisely determine the potential return for ratepayers at this time. Cost-effectiveness and potential return to ratepayers will be critical factors both at the Strategic Planning stage and in evaluating research proposals.

Ratepayer benefit, in terms of dollar-for-dollar return on investment, will only be bolstered by the Institute's commitment to collect additional funding from private sources. These matching funds will stretch the value of each ratepayer dollar contributed.

3.1.1. The CICS Mission will Help California Achieve the Goals Established in AB 32 and SB 1368

As discussed earlier, the mission of the CICS is consistent with the purpose and findings contained in Assembly Bill (AB) 32. In AB 32, the Legislature found that global warming "poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Section 38501(a).) The Legislature further found that global warming would have a particular impact on the electricity sector by increasing "the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state" while at the same time decreasing the "supply of water to the state from the Sierra snowpack." Investing in the development of innovative and pioneering technologies, the Legislature found, will assist California in achieving

---

but the high benefits also suggested to some that there were more potentially high-benefit projects that were not undertaken." (Citing *Working Group Report on Public Interest Research, Development and Demonstration Activities.* Submitted to the CPUC September 6, 1996 in R.94-04-031. pp 3-7.)

its GHG emission reduction goals and "will also help position its economy and businesses to benefit from future national and international efforts to reduce GHG emissions efforts world wide." (Section 38501(e).)

SB 1368 addresses the Legislature's concern that there is a future financial risk to California consumers for pollution-control costs once there is federal regulation of GHG emissions. In response to this legislation, the CPUC and CEC have developed Emissions Performance Standards which limit the rate of emissions from new long-term financial commitments to base-load generation from energy sources, acquired by investor and publicly owned utilities, whose emissions are to no more than the emissions of a combined-cycle gas turbine plant. Today, Coal-fired generation cannot meet this standard. Perhaps with directed and applied research into without the deployment of new carbon capture and storage technologies, coal could provide both fuel diversity and a source of electricity without an increase in GHG emissions. That today are still largely in the research and development stages. Commercialization of carbon capture and storage technologies would allow for fuel diversification while making possible significant further emissions reductions from gas-fired power plants.

CFC raisesd a novel argument that since the Legislature enacted AB 32 and directed CARB to undertake certain actions that the Legislature intended to "occupy the field of greenhouse gas emission control under the umbrella of another state agency."[12] By implication and argument, CFC contends that Commission funding of the Institute is preempted—however, CFC cites no

[12] CFC, Comments to PD, p. 10.

support for their argument that the doctrine of preemption applies to state agencies in a lateral fashion in the same manner that it applies to lower levels of government. We find no legal support for extending the concept of field preemption that addresses whether a lower level of government can regulate in an area in which a higher level of government has already regulated to co-equal state agencies.

Pursuant to the AB 32 legislation, CARB is preparing to prepare a Scoping Plan that identifies how to achieve technologically feasible and cost-effective reductions in GHG emissions based on existing and projected technological capabilities. It is the intent of this decision to have the CICS Strategic Plan build off of the AB 32 Scoping Plan and work in concert with, but not duplicate the work and funding of AB 32.

In addition, CARB established an Economic and Technology Advisory Committee (ETAAC) to recommend advise it on directions CARB and other state agencies can take in the research and development arenas to implement the emission reduction goals from AB 32. The Institute's Strategic Research Committee (SRC) is to utilize the advice from ETAAC in developing the Strategic Plan Roadmap and in designing the short-term and long-term strategic plans for CICS so the grant administration process complements, and does not duplicate, CARB's efforts pursuant to AB 32.

3.2. Funding and Budget

The OIR asked parties to comment on a number of issues, including whether the proposed budget was reasonable and a how the budget should be funded. Parties' comments on budget and funding can be organized into four separate issues:

1) Who should pay for the work of the proposed Institute?

2) What is the appropriate level of funding?

3) How should the costs be assessed?

4) How should the budget be allocated among the functions and tasks of the Institute?

The answer to each question informs the next. We will address each question in order, taking into consideration the comments submitted.

3.2.1. Funding

Who should pay for the work of the proposed Institute?

The OIR proposed that CICS be funded by ratepayers through a surcharge on electricity and natural gas consumption. The generation and consumption of electricity and natural gas accounts for approximately 20% of all GHG emissions released in California so there is a correlation between these industries and the climate change problem. Parties' comments ranged from strong support by NRDC for ratepayer funding to strong opposition from DRA and CFC. Many parties echoed NRDC's comments supporting the proposed budget and funding mechanism as adequate and appropriate to the task, but recommended narrowing the scope of the research to ensure that the costs borne by ratepayers are used to fund relevant and appropriate activities. We have amended the PD to specifically ensure, through the utilization of the ratepayer benefit index in the grant solicitation and selection process, that there is a nexus between ratepayer benefit and the work of the Institute.

UC, CSU and the private research institutions declined to comment on the appropriateness of ratepayer funding, but did make the argument that benefits could and would flow to the ratepayers as a result of the proposed activities, particularly with the narrowed focus offered in UC's revised proposal.

On the other hand, numerous parties shared DRA's concern that "[d]espite broad support for CICS among the parties, no one has provided sufficient justification for ratepayer funding," and "[t]here is, at best, a limited connection between [investor owned utilities] (IOU) ratepayers and the obligation to fund the wide scope of the Institute's activities."[13] Other parties observe that since climate change is a global problem with global impacts, the benefits of the Institute will fall to a far broader population of beneficiaries than just IOU ratepayers.[14] TURN, IEP, Greenlining, and CE Council all argued the scope of the CICS is broad enough that it should be funded "through legislative action and that public funding should be provided through taxes, rather than enacted by the CPUC and funded by ratepayers."[15] Ratepayers, they argue, are already overburdened by public programs, such as the CEC's PIER program, and should not bear this cost alone.

Some parties, and in particular CFC argue that the PD proposes "an unlawful levy of a special tax on ratepayers."[16] We dismiss CFC's argument since the Institute will be funded through a surcharge, and not a tax.

In addition to arguing that a tax would be more appropriate than a rate surcharge, parties, including TURN, Greenlining and CEC maintain that utility shareholders should bear a portion of the costs. The utilities, including PG&E, SCE, SDG&E/SOCALGAS, and PacifiCorp all reject that proposal, but echo the concern that their customers not bear an undue portion of the costs. PG&E

---

[13] DRA, Reply Comments, pp. 3-4.

[14] IEP, Opening Comments, p. 12.

[15] TURN, Opening Comments, pp. 2-3.

[16] CFC, Comments to PD, p. 1.

proposes including California's publicly-owned utilities (POUs) in both the funding and participation in the CICS programs. They note that one-third of California's consumers and businesses are served by POUs.[17]

While DRA objects to ratepayer funding for the Institute, DRA does offer constructive suggestions for protecting ratepayer monies if the Commission does go forward. DRA proposes that any funding approved by the Commission should be limited to initial seed funding and that private donors should provide the balance of funding going forward. DRA further suggests that the Commission should limit ratepayer funding to technology and policy research and should prohibit the use of ratepayer funds for administrative expenses.[18]

Greenlining contends that since ratepayer money is drawn from all segments of society, the Commission must ensure that the benefits are realized by all segments of society, including low-income and minority communities. Greenlining further argues that UC has historically been ineffective at reaching diverse and disadvantaged communities.

Discussion

Taxpayer funding may indeed be a preferred means of financing the Institute, as some parties have argued. We are concerned, however, that waiting for collective state-wide action to establish the framework for the Institute and authorize funding will incur undue delay. Put simply, given the urgency of the climate change issue as recognized by the Legislature and authorities such as the Stern Report, the time for action is now. We find, in the absence of statewide

---

[17] PG&E, Opening Comments, p. 2.

[18] DRA, Opening Comments, p. 12 and p. 14.

legislation authorizing a tax to fund the Institute, it is appropriate to use ratepayer monies.

While we are mindful of the Commission's responsibility to ratepayers and of the growing number of public programs they support financially, as we discussed above, we believe that the benefits of these programs will flow back to ratepayers and inaction now will likely result in higher costs for ratepayers in the future. Following the mandate of AB 32, if the electric and gas utilities are not able to reduce their emission levels, ratepayers will be paying more.

Furthermore, today's decision does not approve funding for unfocused, exploratory academic research, as asserted by some concerned parties. The primary mission of the CICS is to develop technologies and mechanisms that are practical, ready for implementation and will result in actual and cost-effective GHG reductions.

The causes and cures for climate change cannot be segregated on a sector by sector or industry by industry basis. Indeed, interconnection is the baseline premise on which various carbon reduction strategies are based. We agree with UC that the primary benefit to be gained as a result of the CICS is not revenue generated from IP or licensing agreements but a stream of commercially deployable technologies that will reduce GHG emissions or help California adapt to the impacts of climate change.

Nonetheless, we agree that there should be a direct tie between funded projects and benefits to ratepayers. Accordingly, a ratepayer-benefit index that ranks proposed projects from high ratepayer benefit to low, or no ratepayer benefit, will be an integral component that informs the entire grant process from the solicitations through selection. The high to low continuum would give a high index score to a proposal that is expected to produce a cost-effective measurable reduction in GHG emissions in the electric and gas sectors, and the index would go down as the measures were less cost-effective, had lower levels of measurable reductions, or promised significant reductions but in another sector with no nexus to the electricity or gas industries.

The ratepayer benefit index must be a key segment of the Strategic Plan so that there is a consistent thread of ratepayer benefit running through the grant process. Requests for applications (RFA) for grants must include the ratepayer benefits index score, grant applicants must include a ratepayer benefit analysis in their proposals, and the grant selection process will asses the applicant's score and employ it in weighing the ratepayer benefit component in comparing competing applications. While we recognize that the index is more qualitative than quantitative, and the scores are not exact measurements, its use will ensure that the focus of the funded proposals is consistent with the Commission's goals of having the Institute and its funding produce used and useful solutions that have the potential for a return on the ratepayer's investment. Any proposal that does not show that it will benefit the ratepayers will not be chosen for CICS funding. The Strategic Plan, including the ratepayer benefit index, shall be submitted to the Commission for approval.

We also agree with parties that ratepayers should not be the sole source of funding for the Institute. In a perfect world, we agree that POU ratepayers should also contribute funding to the Institute, and we urge the POUs to do so voluntarily. Other sectors, most notably transportation, should also contribute, expanding both the scale and scope of the Institute.

In order to leverage the initial funding and to spread the burden of the costs associated with funding the Institute, we include among the central duties of both the Institute Executive Director (Executive Director) and the Executive Committee of the Governing Board, the solicitation of additional funds from non-ratepayer sources. Ratepayer funds should be a catalyst for other public and private funding and we require that over the 10-year life of the Institute,, 100% of the $600 million ratepayer investment is matched with non-ratepayer funding. We expect a 100% match annually beginning in Year 5. Each year's Annual

Report is to include data on the amount of matching funds raised and the status of the Executive Director's fund-raising efforts.

What is the appropriate level of funding?

Climate change is a global problem and the total costs of mitigating its impacts and adapting to its consequences puts in perspective the $60 million per year expenditure proposed by UC. As noted by UC, the Stern Review on the Economics of Climate Change[19] suggests that California alone will ultimately pay many times this amount to combat the worst effects of climate change. DRA and others argue that there is insufficient detail to properly assess the level of funding, but many parties agree with CSU's comments that the budget is relatively modest given the scope of programs proposed.[20] USC suggests that funding levels be adjusted for inflation, "which would place the total 10 year budget on the order of $700 million."[21] Many parties emphasize the need to leverage additional funds, including federal and private monies, a concept we strongly endorse and specify as a duty of the Executive Director.

The revised UC proposal provides additional detail about the proposed budget and the relative size of the need. Comments by several parties and the presentations at the workshop support the proposed budget. Professor John Weyant of Stanford University's Department of Management, Science and Engineering praised the collaborative nature of the UC proposal and the ability

---

[19] Stern Review on the Economics of Climate Change, 2006, supra.

[20] CSU, Opening Comments, p. 13.

[21] USC, Opening Comments, p. 4.

of academic research to mitigate risk and speed technologies and innovation to the market, as well as producing significant "spillover benefits."[22] Leah Fletcher

---

[22] Statement of John Weyant, Stanford University, at December 12, 2007 CICS Workshop.

of NRDC endorsed the proposed budget, citing concern about declining investment historically, and stressing the need for CICS funding not to replace but to complement existing funding.[23] Meeting the goals of California's Energy Action Plan (EAP)[24] and AB 32 will be challenging. $60 million per year could be viewed as a down-payment on meeting the commitments that have been set by the Legislature. We do not suggest that this annual budget is adequate on its own, nor do we intend to shirk our responsibility to ratepayers to make sound investments for the future. Given the likely costs of inaction on climate change solutions and the limited resources currently available, we find that the proposed budget is appropriate and reasonable.

How should the costs be assessed?

In response to this question posed in the OIR, parties agree that the costs should be spread as equitably as possible across both electric and gas customers in the IOU service territories. The environmental and consumer groups, including DRA, argue that, if ratepayers must pay, it should be on an equal cents per therm or kWh basis, allocating costs based on the use of energy. Climate change, as discussed throughout this proceeding, is a global problem driven in

[23] Statement of Leah Fletcher, NRDC, at December 12, 2007 CICS Workshop.

[24] EAP I was issued jointly on May 8, 2003, by the Commission, the CEC and the California Consumer Power and Conservation Financing Authority. EAP I was updated with the adoption of EAP II, as a joint policy plan of the Commission and the CEC in October, 2005. The EAP established a set of priorities, or loading order, to guide the state's energy policy. The loading order prioritizes means of meeting California's energy needs, placing energy efficiency and demand response first, renewables, and clean distributed generation second, followed by the cleanest available fossil-fuel fired energy.

large part by our consumption of energy, so energy use is a logical and equitable means of apportioning the costs of mitigation.

On the electricity side, the three largest IOUs argue for an equal percentage of revenue basis, similar to the methodology used for EE and distributed generation (DG) incentive programs. This would have the effect of slightly shifting costs onto residential and small commercial customers, who are proportionally the greater beneficiaries of those programs. PacifiCorp is a notable exception, agreeing that an equals cents per unit charge is the most equitable.[25]

On the gas side, PG&E, SCE, SDG&E and SoCalGas join SCGC in recommending that CICS costs "should be recovered from gas ratepayers through the natural gas public purpose surcharge," which would *de facto* exempt natural gas-fired electricity generators from bearing CICS costs. If, on the other hand, the Commission recovers costs from the base rate of the gas utilities, SCGC argues that the gas-fired electricity generators should be explicitly exempted. As precedent for their exemption, SCGC cites the precedent established by the Legislature in creating the natural gas public purpose surcharge, the California Solar Initiative (CSI) and the Solar Water Heating and Efficiency Act of 2007.[26] They argue that if CICS costs are assigned to gas-fired electricity generation, California electricity consumers would potentially have to pay the direct costs on a cents per kilowatt (kWh) basis, the indirect costs of the equal cents per therm charge, and the higher price that "would be charged by non-gas-fired generators

[25] PacifiCorp, RC, p. 3.

[26] SCGC, Opening Comments, p. 4.

as a result of the wholesale spot price of electricity being inflated by the imposition of the new CICS charge on marginal gas-fired electricity generators."[27]

We agree that the costs of the Institute should be born by both electricity and gas customers, and that it should be on an "equal cents per unit" basis. We find that double-charging electricity consumers is an inequitable outcome and so gas used for electricity generation supplied to IOU customers should be exempted. The costs should be apportioned among the utilities and between gas and electric customers based on the percentage of total 2007 state revenues once wholesale sales of gas and electricity, sales of gas for electric generation and DWR revenues are excluded. Other exemptions, established consistently across all participating utilities and in consultation with the Energy Division, may be included. This should result in an approximately 70-30 split between electric and gas ratepayers respectively. The allocation across electric utilities will be based on recorded data from 2007 for kWh subject to this charge, and the allocation across gas utilities will be based on the recorded data from 2007 for therms.

AB 1X, enacted during the peak of the 2000-2001 electricity crisis, places additional restrictions on who will ultimately pay the costs of funding the Institute by freezing rates for residential ratepayers who consume less than 130% of baseline. To the extent that some low-income and small users will be exempted, the costs will be borne by a smaller percentage of IOU customers. Utilities are hereby ordered to submit advice letters detailing the rate impacts of an equal cents per therm and an equal cents per kWh charge, with all the

---

[27] SCGC, Opening Comments, p. 5.

exemptions detailed above and compliant with the restrictions of AB1X, and apportioned according to the percentage of revenues from gas and electricity consumption. The total budget for the Institute will be $600 million over ten years, with an annual budget of $60 million. Revenue collection for the funds for the Institute, should begin as early as feasible, consistent with standard practice and the Public Utilities Code.

3.2.2. Budget

How should the budget be allocated among the functions and tasks of the Institute?

Many parties commented on how the budget should be apportioned among the many tasks and priorities of the Institute. In response to parties' comments, we amend the Charter and the duties of the Executive Director to include the obligation to prepare and submit to the Commission for approval a yearly proposed budget. With this added layer of Commission oversight and control we do not find it necessary to be overly prescriptive with regards to the allocation of funds. The Institute's specific priorities will be established through the Strategic Planning process, and then yearly, the Executive Director, in consultation with the Governing Board can propose an allocation of the money among the Institute's mission objectives, and present it to the Commission for approval. Nonetheless, we provide general directives in order to ensure that ratepayers' needs are met and funds are used effectively.

First, the Institute will not be the repository of the CICS funds; the utilities will collect and hold ratepayer funds until the appropriate time for allocation. Administrative and hub expenses shall be paid out on a monthly basis. Grant awards shall be paid directly by the IOUs to the grantee. One IOU shall be designated as the collecting agent. The Institute will only be given the funds it needs to run the hub and carry out the necessary administrative functions of the Institute. However, funds held by the Institute should be strictly segregated from other funds for accounting purposes. Any and all funds paid by California IOUs on behalf of their ratepayers should be kept in an interest bearing account so that both the principal deposits and any interest generated by those deposits are reserved for the purposes of the CICS. No ratepayer money, or the interest generated by it, may be used for non-CICS purposes.

Next, we have identified "cost centers" or functions for the Institute:

1. Hub expenses – including administrative costs, staff salaries, development of the Strategic Plan, grant administration, and dissemination of research findings.
2. Money for grants and programmatic grants issued for the purpose of research, development, and commercialization of technology.

And finally, we clarify that any unspent monies from any yearly budget are to be rolled-over to the next budget year of the Institute. Any unspent funds remaining at the end of the 10^{th} year are to be returned to ratepayers, unless the Commission acts to continue ratepayer funding of the Institute.

Parties' Comments

All parties agree that administrative expenses should be kept to a minimum. Since the Institute hub will be responsible for overseeing and coordinating the Strategic Planning function as well as developing RFAs and awarding grants, we include these, along with more traditional administrative costs, as hub expenses. The parties also foresee relatively higher up-front costs for hub expenses, including staffing and leasing office space, and especially the initial Strategic Planning exercise, which must be completed before work in the other areas can begin. This means that the first year hub expenses may exceed the hub expenses incurred in following years. Parties estimated that the total amount needed to run the hub range from a low of 5% of the total budget up to 15% of the total budget.

Discussion

Mission-based applied and directed technological R&D, as facilitated by the grant administration process, is the primary purpose of the Institute. As such, the majority of the funds provided to the Institute should support such projects. Therefore, we establish that a minimum of 85% of the total CICS funding must be allocated to competitively awarded grants for applied and directed R&D. A maximum of 10% of the total CICS funding may be allocated to the hub and administrative functions, including the Strategic Planning process.

The Executive Director, in consultation with the Governing Board, may exercise discretion with any unallocated funds, and make recommendations to the Commission in each year's proposed budget for those funds.

Hub Expenses

The costs and expenses for activities that will occur within the Institute's hub or headquarters include the cost of leasing physical space, the salaries of the Institute's officers and staff, support and per diems for the SRC, grant administration, hosting relevant conferences and workshops directly related to R&D activities of the Institute, and the cost of necessary office equipment, computers and supplies. The amount set aside for hub expenses should also cover all costs related to developing and updating the Strategic Plan. In the first two years, we recognize that there may be high start-up costs, and thus we grant some latitude to the Institute to spend more on administrative fees during those first two years so long as this extra spending is justified in the audit and is reduced in later years to not overspend on administration.[28]

[28] The PD limited funding for all Institute hub functions and expenses to 10% of the total CICS yearly budget. Since the site of the hub is now subject to a competitive solicitation process, we expect applicants to be competitive on their anticipated hub related costs and expenses. We still limit hub administrative costs including officer salaries, per diems and expenses for the SRC, leasing physical space, hosting relevant conferences, purchasing computers and office supplies, and maintaining its web portal to 10% of the total CICS budget, but expect and anticipate that it will be much lower than that so more Institute money can go towards the mission functions, and not overhead.

Applied R&D

In order to meet California's aggressive clean energy and GHG emission reduction goals, a broad array of technology must be developed, much of which is far from market ready and some of which is still in early conceptual or design stages. Conducting R&D requires considerable resources. Technologies and innovations from CICS funding that are developed into useful products and services that can benefit the public are also likely to yield the highest direct ratepayer benefit. As such, it is reasonable to require that the bulk of Institute funding be used for this purpose. The Commission expects a minimum of 85% of the annual budget to be spent on grants for applied research intended to support the goals of AB 32, the state's EAP, and other policy directives. We expect the Institute to coordinate its IP technology transfer and commercialization efforts with the proposed Emerging Renewable Resource Program (ERRP), which, if approved, will consider applications for the use of emerging, commercially immature technologies in utility-scale renewable generation projects. The relatively small amount of Institute money available for commercialization is insufficient for utility-scale demonstration projects. Accordingly, we require that the Institute staff and the TTS coordinate with the Commission's Energy Division where appropriate.

3.2.3. Equipment Purchases

UC proposed that part of the budget should be set aside for the purpose of acquiring equipment to support complex monitoring systems, servers and databases for measurement and informatics.

We decline to dedicate any ratepayer funds for this purpose. UC has not sufficiently demonstrated how this equipment is necessary to support the Institute's other functions. While the Institute will certainly have to purchase or lease hardware and develop databases to construct the Strategic Plan and carry out its business, the Institute is primarily a grant-making body and not tasked with doing any original research. We therefore cannot support an equipment expenditure as large as UC requests. However, we do not restrict the acquisition of equipment by recipients of grants who have identified in their grant application the need for specific equipment as a necessary component of their research project.

3.3. Governance and Organization

The Institute will have a Governing Board with an Executive Committee, an Institute Executive Director, a Managing Director, necessary staff, SRC and subcommittees.

The geographical location of the Institute's headquarters or hub, at which the Institute's staff maintains offices, shall be determined by the Governing Board through a competitive solicitation. In its comments, UC offered its assistance to the Commission to run the competitive solicitation process for the hub. While we acknowledge UC's experience in running competitive solicitations, we do not want to create a potential conflict of interest if UC submits a proposal to host the hub. Therefore, we direct the Governing Board to conduct the solicitation for the hub by issuing a Request for Proposals to which all non-profit California-based entities, including, but not limited to, public and private universities, interested in hosting the hub may respond.

A peer review committee will rank proposals and present the rankings to the Governing Board for selection. We reiterate here that all members of the

Governing Board are subject to the Conflict of Interest provisions set forth in Attachment B, and therefore no member that is affiliated with an institution that submits a proposal to host the hub, may vote on the hub selection.

We adopt many of UC's suggestions as to what applicants should include in their proposals and add some additional ones. Specifically, institutions are to provide the following information that will be considered in the hub selection process:

- A detailed description of how they would host the Institute in a way that would advance the Institute's mission—applied and directed R&D and commercialization of technologies;
- How the hub would be structured to utilize the existing or planned resources of the institution;
- How the infrastructure and existing systems of the host institution can serve the Institute;
- Describe the physical space;
- What intellectual and other resources does the proposed hub have that could enhance the Institute;
- Whether the host institution would house the Institute wholly within;
- How they would control and manage the administrative costs of the hub,[29]
- How they would maintain a web portal;

- How they would approach the Strategic Planning process to ensure that the SRC fulfills its duties to create an inventory of existing programs, identify uncharted areas of R&D, and focus on R&D that has a ratepayer benefit;

- A description of practices and policies it intends to use to support participation of members who are broadly representative of the population of California in the projects funded by the CICS;

- How much matching funding they will commit to raise; and

- How they could ensure that whether its geographic location was northern or southern California, it could serve the interests of the entire state.

While the PD proposed that the Institute was to have a physical presence in both northern and southern California, we now defer to the Governing Board the decision on how best to ensure this presence, depending on what institution is chosen as the hub and how it plans to serve the needs of all of California.

3.3.1. Governing Board

The Governing Board will be responsible for ensuring that the CICS fulfills its mission and complies with the requirements set out in this decision.

The comments presented numerous suggestions for the Institute's Governing Board. In general, the parties advocated diverse and broad representation including stakeholders from all different arenas including the Senate and Assembly, utilities/ratepayers, experts in the scientific and academic fields, the California university community, consumer groups, the CPUC and other energy-related state agencies such as the CEC and CARB, the UC system, the environmental community, and private industry.

We find that the Institute would benefit from a broad-based Governing Board. (See Attachment C.)

In response to a consensus of opinion among the parties to this proceeding, no single organization or interest holds a majority of seats on the Governing Board. The Governing Board will be co-chaired by the President of the Commission, or his/her designee, and the President of UC, or his/her designee for the first three years of the Institute's existence. Thereafter the co-chairs shall be chosen by majority vote of the board. The Governing Board shall have an Executive Committee of nine, which shall also be co-chaired by the President of the Commission and the President of UC. The President of the Commission shall select four members from the Governing Board to serve on the Executive Committee and the President of UC shall select three members from the Governing Board for the Executive Committee. Members of the Governing Board shall serve for staggered three-year terms.[30] At all times between meetings of the Governing Board, the Executive Committee shall have all the duties and authorities of the Governing Board, except for the limitations set forth in the

---

[30] Once the Governing Board is established, the co-chairs will establish how the Governing Board should be staggered.

Charter. A two-third's vote of the Governing Board is necessary to remove any members.

All members of the Governing Board, including the Executive Committee and other subcommittees, will serve without compensation and shall be subject to the Governing Board conflict of interest policy, see Attachment B.

The Governing Board will select a location and host for the Institute's hub following the solicitation protocols set forth herein; appoint an Institute Executive Director and a Managing Director; appoint members to the SRC; review and approve the Strategic Plan, including short-term and long-term goals; review and approve the annual budget prepared by the Institute's staff;[31] and review and, if appropriate, approve aggregated lists of proposed grants compiled by the Institute's staff for each RFA cycle. The Governing Board shall have the power to establish any subcommittees necessary to perform its duties and responsibilities. At a minimum there will be a Technology Transfer Subcommittee (TTS), a Conflicts of Interest Subcommittee, and a Workforce Transition Subcommittee (WTS).

The TTS will be responsible for reviewing existing UC IP and technology transfer policies and developing IP and technology transfer policies and protocols specific to the Institute.

The Conflicts of Interest Subcommittee will be responsible for reviewing existing UC conflict of interest policies, and developing conflict of interest

---

[31] Budget is subject to CPUC approval and once established by the CPUC it is then up to the Governing Board to approve an annual budget that is consistent with the funding provided by the CPUC and with the Strategic Roadmap.

protocols that will apply to CICS staff and the SRC, and be submitted to the Governing Board as a whole for adoption.

The Workforce Transition Subcommittee of the Governing Board will study ways to support the energy sector's transition to a carbon-constrained future through anticipating and preparing for the resultant changes in its workforce needs and report back to the Commission on the study. The workforce transition study should identify gaps in current workforce development programs with specific reference to new professional and job opportunities likely to result from the transition of California toward its green energy economy goals. The study should make recommendations on how to best coordinate industry, government, academic, business and professional groups relevant to filling those gaps and should present a detailed plan. This plan may include a recommendation as to whether the Institute should take on a role in workforce development, and, if so, how the Institute could best collaborate with others as to how to fill the gaps, and specific recommendations to relevant State and public authorities such as educational and vocational institutions. We recognize that funding workforce training programs is not a direct purpose of this research Institute; however, the study may include suggestions for funding or providing matching money for discrete projects that are not to be funded by others in an effort to jumpstart appropriate emerging workforce development programs. The WTS subcommittee shall submit its study to both the Governing Board and the Commission within six months from its initiation, and Commission should act on the subcommittee's recommendations within three months of receipt. If the study supports having the Institute fund grants for the emerging workforce training and the

Commission concurs in this recommendation, the Commission may allocate an appropriate percentage of Institute funds for that purpose.

3.3.2. Institute Director

The Governing Board shall conduct a national search for a qualified Institute Executive Director. The Executive Director should have expertise in climate change science, technology, or policy, should have demonstrated fundraising abilities and should be familiar with grant administration processes.

The Director shall be responsible for:

1. Overseeing the requests for grant applications and managing the grant administration process, including the evaluation and approval of individual grants;
2. Organizing and supervising the peer review process;
3. Overseeing the Strategic Planning process;
4. Soliciting non-ratepayer funding for Institute programs and optimizing financial leverage opportunities for the Institute;
5. Supervising and causing the completion of all annual reporting and auditing processes;
6. Making all necessary arrangements for the biennial external performance review;
7. Interfacing with the California Public Utilities Commission, the California Environmental Protection Agency, the CEC, the California Legislature, the Governor's Office, all other relevant local, state and federal government agencies and organizations, and the public; and,
8. Negotiating the terms of grant awards, intellectual property agreements, and agreements to secure additional, non-ratepayer funding.

The Executive Director will have authority, subject to the oversight of the Governing Board, to: organize, administer, and commit the resources of the Institute as necessary for the administrative function of the Institute's hub; make personnel decisions; and appoint and replace members of the SRC and the subcommittees.

The Institute will also hire a Managing Director for the Institute. The duties and responsibilities of the Managing Director shall be established by the Governing Board in consultation with the Executive Director. The Executive Director may delegate any of his duties and responsibilities to the Managing Director.

The Executive Director shall submit to the Commission for approval the Strategic Plan, the annual proposed budget and the annual report that includes the annual audit. The Executive Director should be prepared to appear at a public Commission meeting to answer questions on the reports and to consult with the Commissioners.

3.3.3. Strategic Research Committee

The SRC will be chosen by the Governing Board from a list of nominees compiled by Institute staff. The SRC shall have no more than 20 members, all residing within California or associated with an entity with a presence in California. The nominees should be experts from universities, research institutes, government, industry, and the environmental community. The nominees must have subject matter expertise in the fields of climate change science; green technology; electrical generation, transmission, and storage; energy efficiency; renewable generation; engineering; biotechnology; carbon capture and sequestration technology; and forestry and agriculture.

The SRC will be responsible for:

1. Developing a Strategic Plan by March 13, 2009, and updating it on an annual basis.
2. Assisting the CICS officers in developing short term and long term goals that are consistent with the Strategic Plan.

3. Reviewing grant proposals recommended by the peer review committee.

The SRC will also provide a forum for researchers and research managers to have an ongoing dialogue with industry and government regarding the direction, scope, and relevance of the Institute's research. It will be responsible for recommending potential mid-course corrections, in the event that they become necessary, to the Strategic Plan. The SRC will allow for a convergence of technical insight, market intelligence and policy priorities with academic expertise

The SRC will assist the Institute's staff in developing and implementing the grant administration process. It is expected that the SRC will be involved in all planning phases prior to the release of RFAs so that the RFAs clearly reflect the priorities established in the short-term and long-term strategic plans.

Members of the SRC will serve at the pleasure of the Governing Board. They will be reimbursed for all direct expenses incurred as a result of serving on SRC and will collect a small per diem that will be established each year in the annual budget.[32] Members of the SRC are subject to the CICS conflict of interest policy statement.

3.3.4. Strategic Plan

The Institute will need a Strategic Plan to effectively and cost-efficiently administer grants in a targeted fashion. To accomplish this, the SRC is to undertake the following tasks:

[32] The initial per diem will not exceed $200.

1. Conduct an inventory of current publicly and privately funded research efforts to meet the requirements of AB 32;
2. Identify areas of technological innovation, not being developed, that will bring about the most promising options for reducing GHG emissions;
3. Develop a ratepayer benefit index and identify the uncharted R&D areas that will bring about the highest ratepayer benefits; and
4. Utilize the resources that the hub provides to execute the above functions.[33]

While CARB and the Climate Action Team are developing a scoping plan and analyzing a set of measures to meet the targets set in AB 32, the CICS will identify specific applied and directed research that is focused on practical technological solutions for reducing GHG emissions. There is currently no centralized statewide directed R&D for how to get from present emissions levels to those established in AB 32, and no one institution with the mandate to evaluate and fund the most promising options for reducing GHG emissions. We believe this is a key role that CICS can fulfill, and that the SRC can facilitate.

To implement this focus for the CICS, the SRC will begin by conducting an inventory of current publicly and privately funded research efforts. CARB and the Climate Action Team are developing a scoping plan and analyzing a set of measures to meet the targets set in AB 32. The SRC should utilize this scoping plan, as well as the recommendations the ETAAC is preparing, in developing a Strategic Plan for the Institute. By coordinating with the other state agencies

---

[33] Each proposal to host the hub is to specify how that institution can facilitate the functions of the SRC.

and programs that are also working on AB 32 goals, the SRC will avoid redundancy and waste.

Once the inventory is complete, it is to be submitted to the Commission as a report.

Next, the SRC is to identify areas where applied and directed research focused on practical technological solution is needed to reduce GHG emissions. As much as possible, the SRC shall rely upon and not duplicate existing work done by the CPUC, CARB, CEC, or other entities that have identified opportunities for and barriers to GHG emission reductions.

The third critical task for the SRC is to develop a ratepayer benefit index, that will then be a key component of the strategic plan and will inform the entire grant process from the solicitations through selection.

And, finally, the SRC is to utilize the resources available at the hub to create the CICS Strategic Plan.

3.3.5. Short-Term and Long-Term Goals

The SRC and Institute staff, shall develop short-term and long-term goals, that can implement the "umbrella" Strategic Plan. These goals should emphasize areas of research that will achieve the greatest GHG reductions at the lowest cost and to the greatest benefit of ratepayers as determined by the ratepayer benefit index.

The Strategic Plan will determine for which areas of research the Institute will develop the grant RFAs. The short-term strategic plan should identify technologies that are 1-5 years away from being commercially deployable. The long-term strategic plan should identify those areas in which the lowest cost GHG reductions can be accomplished to the greatest ratepayer benefit but that need technological innovation to be realized. The long-term strategic plan should be focused on technologies that are 5-50 years away from being commercially deployable.

3.4. Grant Administration and the RFA Process

One of the central functions of the Climate Institute is issuing RFAs for grant applications, reviewing proposals, and awarding grants. The grant award process must be competitive in order to ensure that the most qualified individuals and institutions with the most viable ideas carry out ratepayer-funded research.

The California Institute for Regenerative Medicine provides a useful model in its Grants Administration Policy.[34] While we decline to elaborate in detail how such a process shall work for the CICS, the Institute's staff shall develop a Grant Administration Policy specific to the Institute and present it to the Governing Board for adoption in the bylaws prior to the initiation of the first RFA. We repeat here the Conflict of Interest policy whereby no Governing Board member affiliated with a person, entity or institution that applies for a grant may vote in the grant selection process.

The Grant Administration Policy shall be consistent with the following:

1. Eligibility
   - (a) To be eligible to apply for a CICS grant an individual must be a resident of California,be employed full time by a California based entity, or be affiliated with a California institution.

---

[34] CIRM Grants Administration Policy for Academic and Non-Profit Institutions, OAL Approved – Eff. 3/30/07, available at http://www.cirm.ca.gov/reg/pdf/reg100500_policy.pdf

(b) Applicants for a CICS grant must submit a statement of qualifications demonstrating expertise in research, development, demonstration, deployment, or commercialization of technology relevant to a specific RFA. Specific qualification standards shall be adopted as part of the Grant Administration Policy.

(c) Applicants for a CICS grant need not hold an academic position or be affiliated with a University or publicly and privately funded research laboratory.

(d) Applicants for a CICS programmatic grant must be affiliated with a California institution.

(e) Collaborative teams including partnerships between relevant private and public sector entities should be encouraged.

(f) Individuals residing outside of California and entities based outside of California may apply as part of a collaborative team that includes a California-based entity.

2. Application Submission

Institute grant funding opportunities will be announced via an official solicitation, referred to here throughout as an RFA, on the CICS website. Each announcement or solicitation will specify the objectives and requirements that apply, and the review criteria that will be used to evaluate the merits of applications submitted in response to the announcement, including the ratepayer benefit index.

3. Application Review

The Grant Administration Policy should specify appropriate procedures and steps in the application review process. The Policy should establish specific criteria for review of research grant applications and create a formal process for appeals of scientific review, and approval of funding notices.

4. The application review process shall include:
   (a) An analysis of the nexus between the proposed project and ratepayer benefits using the ratepayer benefit index that will be incorporated into the RFA documents. Ratepayer benefit is to be used as an evaluative tool by grant reviewers in comparing grant applications and must be a factor that is explicitly considered in the peer review process (see below). Unless a proposal can articulate a ratepayer benefit it can not be the recipient of a CICS grant.
   (b) An objective scoring system for judging the scientific merit and viability of each application that will be used by both the SRC and peer review panels.
   (c) Anonymity of individual applicants and applicant entities, except as provided below.
   (d) A cutoff score to narrow the pool of applicants prior to compiling a shortlist of finalists.
   (e) An opportunity, if deemed necessary, for the SRC and peer review panels to interview finalists about details of each proposal prior to awarding a grant.
5. Sharing of Intellectual Property

   CICS grantees shall share IP generated under a CICS grant according to CICS IP and Technology Transfer protocols.
6. Preference for California Suppliers

   The CICS should expect the grantee to purchase from California suppliers, to the extent reasonably possible, the goods and services it uses in its CICS-supported research. The grantee must provide a clear and compelling explanation in its annual programmatic report for not purchasing more than 50 percent of its goods and services from California suppliers.
7. Confidentiality

   The Institute's grant administration policy should include confidentiality rules that, to the degree permitted by California law, allow applicants to designate commercially sensitive information as confidential.

8. Additional Funding

   Grant applicants are encouraged to seek funding from sources other than the CICS. Accordingly, the level of matching funds secured from other sources must be a factor that is explicitly considered in the peer review process.

3.4.1. Peer Review

Several parties strongly urged the Commission to ensure that grant awards be disbursed according to an open, competitive, peer-reviewed process. Many parties stated that peer review was the key to ensuring that individual grant awards generated the highest quality work. Both CCST and CSU urged the Commission to keep the process open by having peer review by recognized experts in the various disciplines. USC agrees that a peer review process would help ensure that project funds to the "most qualified" institutions.[35] Morrison and Foerster proposes that a peer review board should be established to review the grant proposals and assist with monitoring and evaluation.[36]

We agree that impartial peer review is an important function of any grant-making body. Peer review ensures that grants are awarded and administered in a fair and objective manner. We are not convinced, however, that a permanent peer review board would have the broad expertise required to effectively evaluate highly technical grant applications submitted in response to an RFA. Instead, ad hoc peer review panels should be assembled for each RFA. The expertise of each panel can then be tailored to match the subject area that is the focus of the RFA. If, for example, the Institute issues an RFA for a certain kind of electricity storage technology, the peer review panel should be composed

---

[35] USC, Opening Comments, p. 3.

[36] Morrison & Foerster, Opening Comments, pp. 9-10.

of experts with knowledge as specific to that kind of electricity storage technology as possible.

We require that Institute staff, in consultation with the Governing Board, develop a complete peer review process for the grant administration processes. All grant applications must be reviewed prior to being put on a short-list or approved for funding.

The grant administration peer review process should be consistent with the following requirements:

(1) Peer review groups should be comprised of experts who are unaffiliated with any of the applicants, to the degree possible. This means that peer reviewers can be selected from institutions outside of California and outside the United States.

(2) Peer reviewers should not know the identity or institutional affiliation of an applicant.

(3) Peer reviewers may not be compensated for their work.

(4) The peer review process should be structured so that it does not unduly delay awards for grants. Accordingly, each peer review panel will have a designated chairperson who will set a schedule to which the rest of the peer review panel will be bound.

3.5. Oversight and Accountability

In the OIR, we asked parties to comment on certain aspects of oversight and accountability including the role the CPUC should play in overseeing Institute programs, CPUC control of expenditures to maximize ratepayer benefits, and performance measures or guidelines that may be applied to funding.

Oversight of the CICS shall be performed by the Governing Board and the Commission. In response to parties' comments, we have taken several accountability measures that will safeguard ratepayers' interests and ensure ongoing oversight. First, the Governing Board has several members that are accountable to the ratepayers, including one Commissioner, the Director of DRA, and a representative from an IOU. Second, there will be two legislators on the Governing Board. Third, and most importantly, the Commission maintains extensive continuing oversight authority. This decision is not a contract and does not obligate the Commission in any way going forward. The terms and requirements of the grant of ratepayer funds can be modified by any subsequent Commission decision.

The Commission shall vote on several key aspects of the institute. As described in Section 3.3.1, the Commission shall approve any non ex officio appointments to the Governing Board and the members of the Executive Committee. Furthermore, the annual proposed budget, annual report, that includes a financial audit, shall be brought to the Commission for approval once they have been approved by the Governing Board.[37] The Commission will also have an opportunity to approve the Strategic Plan and the IP and technology transfer policies and protocols drafted by the TTS that are specific to the Institute. And, in addition, the Commission will review any proposal submitted by the WTS on recommendations for supporting the energy sector's transition to a carbon-constrained future through workforce development.

Finally, we require that the Institute submit to the Commission two external audits: a biennial performance review and an annual financial audit. Through these reports the Institute must demonstrate that it is accomplishing the goals set forth for it, and it must demonstrate that it is spending ratepayer money efficiently and prudently as directed by the Commission.

3.5.1. Annual Financial and Progress Report

Given the magnitude of ratepayer funding and the wide interest in the activities of the Institute, we find that annual external financial audits are warranted and we direct the Executive Director to be responsible for ensuring

---

[37] Non ex officio appointments to the Governing Board, the annual budget and the annual report are to be submitted to the Commission's Executive Director for placement on a Commission agenda for Commission approval. Any submissions pursuant to this directive that are placed on a Commission agenda, but not acted on within 45 days, are deemed approved. All submittals are to be posted on the Institute's public website at the same time they are submitted to the Commission.

that this audit occurs, that the external auditors are given all necessary Institute data to undertake the audit, and that the audit is delivered to the Governing Board for review and approval within 90 days of the close of each fiscal year of the Institute's operation. Once approved by the Governing Board, the financial audit is to be submitted to the Commission's Executive Director for approval by the Commission in compliance with the protocols established herein.

DRA and PG&E both emphasize the need for annual reports. DRA suggests that annual reports include information on revenues and expenditures, the status of funded projects, and projected activities for the next year. PG&E recommends that two annual reports be required: a financial report and a programmatic report. We agree that annual reports must include both financial and programmatic information, but we do not see the need for two separate reports, particularly since we are ordering that the Institute have an external annual financial audit.

Accordingly, we hereby order the Institute Executive Director to present an annual report to the Governing Board within 90 days of the close of the fiscal year of the Institute. The annual report will serve as an internal assessment by the Institute of its own performance. The annual report shall be posted to the Institute website following approval by the Governing Board. The annual report will describe the activities of the Institute during the course of the year including but not limited to fundraising activities, RFAs issued, grant applications received, grants awarded, relevant conferences organized, and accomplishments achieved by the Institute and its grantees. The annual report must also include externally audited financial statements and a summary of expenditures and funds received. The Institute shall maintain detailed financial records under generally accepted accounting principles, and these records shall be maintained for at least six years. The Commission shall have the ability to obtain any financial records upon request. Furthermore, upon request by the Commission, the Institute Executive Director shall appear in person at public meetings of the Commission to answer questions on the annual report.

In addition, the Executive Director must prepare a proposed annual budget for the upcoming year and submit it to the Commission for approval, pursuant to the protocols set forth herein, and be prepared, if requested, to appear in person at public meetings to answer questions on it.

3.6. Biennial External Performance Review

Several parties commented that the CICS should be subject to a periodic external performance review, with most suggesting a biennial review period. We support this recommendation and therefore require that an external evaluator conduct a comprehensive biennial performance review. We require that every two years, beginning in Year 2 (e.g., Years 2, 4, 6, 8 and 10), an external evaluator such as CCST[38] perform a comprehensive performance review. The biennial performance review must be submitted by the Institute's Executive Director to the Governing Board and then posted on the Institute's public website and submitted to the Commission's Executive Director for Commission approval. The Institute Executive Director must make the external annual financial audit report and detailed programmatic information available to the external performance evaluator.

---

[38] CCST's comments state that it is qualified to undertake this type of a performance review and many parties recommended CCST for this purpose. Accordingly, we adopt this recommendation.

The performance review will include an overall assessment of the Institute's effectiveness in reaching the long-term and short term strategic plans approved by the Governing Board as well as an assessment of meeting the goals outlined in this decision. In opening comments, CSU offered several examples of such metrics such as "number of students educated, number of publications, number of dissemination activities (e.g., presentations given, websites accessed), response time to stakeholder requests, patents filed, and new products transferred to the commercial market." CSU also recommended that performance metrics include information on funding leveraged by recipient institutions.[39]

UC's opening comments referenced a National Academy of Sciences (NAS) report on performance metrics that may provide other useful indicators. The NAS report, "Thinking Strategically: The Appropriate Use of Metrics for the Climate Change Science Program," provides a detailed discussion of the possible metrics for use in Government R&D programs like this. The generic pool of metrics for science and technology includes Process Metrics like cycle time, Input Metrics like expenditures by program or time frame, and Output Metrics like the number of publications issued or patents filed.[40] This report is an excellent starting point, but while we agree that specific metrics will be essential to providing a thorough performance assessment, we decline to adopt a specific set of metrics in this decision. In consultation with CCST and other stakeholders, the Institute Executive Director and the Governing Board shall determine which

---

[39] CSU, OC, pp. 17-18.

[40] "Thinking Strategically: The Appropriate Use of Metrics for the Climate Change Science Program," (National Academy Press, 2005), Appendix C.

exact metrics should be included. CSU's and other parties' recommendations should be given serious consideration.

The performance review shall be presented to the Governing Board and, as with the annual reviews and audits, be delivered to the Commission's Executive Director for placement on a Commission agenda for approval.

4. Intellectual Property

Parties all expressed interest in the disposition of IP rights, or revenues generated there from, arising from the proposed work of the Institute. Consumer groups, utilities and, to some extent, environmental groups indicated that the benefits from patents or other intellectual property should flow directly to ratepayers in the form of royalties. PG&E requests that a "clear path" provide benefits for electric and gas utility customers from their investment in the Institute's programs, suggesting incorporation of "'benefit-sharing'" mechanisms that provide free access to and licensing of technologies, information and research results generated by the Institute, as well as royalties in the revenues and value generated by patents and licenses granted by the Institute to third parties."[41]

Of primary concern in this matter is the effect of the federal Bayh-Dole Act, officially titled the University and Small Business Patent Procedures Act ("Bayh Dole"). [35 U.S.C. § 200-212.] The academic and research institutions strongly recommend that the practices of the Institute be fully compatible with the provisions of the federal Bayh-Dole Act" because "failure to comply with the Bayh-Dole Act would assure that CICS funds could not be used to leverage any

41 PG&E, OC, p. 2.

federal funding and would thus significantly reduce the effectiveness of the Institute."[42] CCST for example, recommends "that to the fullest extent possible, the state's IP policies reflect the federal Bayh-Dole Act, and that royalty income earned by universities from profitable technologies … be reinvested in ongoing research."[43] USC urges that technology transfer "be a decentralized activity assumed by each participating institution to accelerate the impact of CICS' research."[44]

CSU argues that the benefits of the Institute will be largely non-financial and suggests that Bayh-Dole be used as the basis for any policies related to revenue sharing from profitable technologies.[45] DRA suggests that it may be possible to structure a sharing mechanism that both ensures ratepayers a return on their investment and addresses the universities' concerns regarding consistency with Bayh-Dole.

The California Institute for Regenerative Medicine specifically provides for revenue sharing in its governing regulations, which require grantee organizations to pay the State 25 percent of net revenues above a threshold amount "unless such action violates any federal law." PIER's standard agreement with UC requires royalty payments of 10% of net revenues to the CEC.[46] SDG&E and SoCalGas offered joint comments that suggests a secondary aim of the Board "should be to create additional incentives for research

---

[42] Stanford, Opening Comments, p. 11.

[43] CCST, Opening Comments, p. 6.

[44] USC, Reply Comments, p. 2.

[45] CSU, Opening Comments, p. 22.

[46] DRA, Reply Comments, pp. 8-9.

institutions to competently and efficiently patent inventions by introducing the potential for the Board to confiscate ownership" of an unpatented invention and to retain "march-in rights" to prevent abuse of monopoly power by patent holders benefiting from CICS funded research.[47] Finally, they argue that "[s]ince United States IP law does not provide for an automated devolution of IP profits or licensing by virtue of providing funding contributions, the Board ought to be granted a non-exclusive license" for inventions coming out of the CICS program.[48]

Caltech expresses the concern, echoed in written comments and during the December workshop, that "[t]he addition of a new layer of regulation on this process [the Bayh-Dole Act] would create significant, sometimes insurmountable, disincentives for the robust research partnerships that redound so greatly to California's benefit at present."[49] UC's presentation at the workshop indicated that the financial benefits from any inventions developed as a result of Institute grants were likely minimal and would be far overshadowed by more qualitative economic, while also pointing out the potential difficulty in then qualifying for federal funds under Bayh-Dole.[50] In general, the UC presentation made a strong case for complying with Bayh-Dole. Stanford's presentation at the workshop also supported the UC proposal, particularly in the context of indirect costs and accounting procedures used for federal funding.

---

47 SDG&E/SoCalGas, Opening Comments, p. 21.

48 *Ibid.*

49 CalTech, Opening Comments, pp. 6-7.

50 Comments of Wendy Streitz, pp. 171-175.

We recognize that Bayh-Dole's public purpose is generally consistent with the mission of the CICS. Furthermore, it appears that there is sufficient flexibility around the elements of Bayh-Dole that the programmatic objectives of CICS can be fully met without being at cross-purposes. It would be imprudent to discourage participation by other universities and researchers by prematurely restricting the open framework established in Bayh-Dole. We are convinced that leveraging federal funds is crucial to the success of the Institute and California's ability to meet the State policy goals established in the EAP and AB 32. Nonetheless, it will be necessary, when bringing in federal funds, to create grant agreements that are in the interest of California and its ratepayers. One possible approach to the question of revenue sharing might be to require that grantees reinvest a portion of their net licensing revenues in research related to climate solutions, though other solutions are possible as well. It is too early to tell what form such agreements may take.

Accordingly, we require that the Governing Board establish a Technology Transfer Subcommittee (TTS) responsible for (1) reviewing the existing policies and practices pertaining to IP, inventions, and technology transfer of the hub's host institution or entity, (2) identifying any barriers to technology transfer the host institution's policies present and bringing them to the attention of the Executive Committee, (3) if necessary, developing IP and technology transfer policies and protocols specific to the Institute, in consultation with stakeholders, (4) advising the Institute and Executive Director regarding IP and technology transfer matters, and (5) reviewing all proposed agreements for additional non-ratepayer funding for the purpose of identifying potential technology transfer issues. Because these are complex issues, requiring specialized knowledge and experience, the TTS will be expected to establish a means of seeking input from professionals with relevant expertise.

And, in order to ensure that ratepayers receive a benefit from this IP and technology transfer, we direct the TTS to require that at least 10% of net revenues revert to ratepayers, unless such an action is violative of existing laws.

Prior to the establishment of IP and technology transfer policies and protocols specific to the Institute, however, all grant agreements shall be consistent with the framework established by Bayh-Dole. Once IP and technology transfer policies and protocols specific to the Institute are set up, they are to be submitted to the Commission's Executive Director for placement on a Commission agenda for Commission approval.

5. Comments on Proposed Decision

The proposed decision of President Peevey 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 3, 2008 and reply comments were filed on March 10, 2008.

6. Assignment of Proceeding

Michael R. Peevey is the assigned Commissioner and Carol A. Brown is the assigned Administrative Law Judge in this proceeding.

Findings of Fact

1. This mission of the CICS is:
   - To administer grants to facilitate mission-oriented, applied and directed research that results in practical technological solutions and supports development of policies to reduce GHG emissions or otherwise mitigate the impacts of climate change in California;
   - To speed the transfer, deployment, and commercialization of technologies that have the potential to reduce GHG emissions or otherwise mitigate the impacts of climate change in California;
   - To facilitate coordination and cooperation among relevant institutions, including private, state, and federal entities, in order to most efficiently achieve mission-oriented, applied and directed research.

2. It is necessary for the CICS to first develop a Strategic Plan as described in this decision.

3. The Strategic Research Committee will undertake the following tasks to develop the Strategic Plan:

(a) Conduct an inventory of current publicly and privately funded research efforts to meet the requirements of AB 32 to ensure that the Institute does not duplicate other agency efforts;

(b) Identify areas of technological innovation, not being developed, that will bring about the most promising options for reducing GHG emissions;

(c) Identify the uncharted R&D areas that will bring about the highest ratepayer benefits and develop a ratepayer benefits index to inform the grant process.

4. The Strategic Plan will be the framework from which the Institute will formulate its budget, long- and short-term goals and grant administration process. It will be updated annually.

5. The Institute will reduce GHG emissions within the state both by transferring technology for cleaner energy and improved EE that has already been developed and by formulating new commercially viable technology

6. Stabilizing GHG emissions will require an economic investment in this Institute on the scale established in this decision.

7. The mission of the CICS is consistent with the purpose and findings contained in AB 32 wherein the Legislature found that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and with SB 1368 wherein the Legislature found that California must reduce its exposure to the costs associated with future federal regulations of [GHG] emissions.

8. We find that it is appropriate and necessary to direct ratepayer funding for the establishment of CICS and the activities described in this decision.

9. We find it necessary and reasonable given ratepayer funding of the Institute that the Institute be accountable to the Commission and the ratepayers. The Commission shall approve the following: non ex officio appointments to the Governing Board; appointments to the Executive Committee; the Strategic Plan; the annual proposed budget; annual report that includes external financial audit; biennial external performance review; and the IP and technology transfer policies and protocols.

10. A ratepayer benefits index will be an integral part of the Strategic Plan and will rank proposed projects on a continuum, from a high ratepayer benefit to low, or no ratepayer benefit, depending on cost-effectiveness, amount of GHG emission reductions, and whether the results are in the energy sector or another field. The SRC will develop this index.

11. The ratepayer benefit index will be included in the grant RFA, must be referenced in individual grant applications and will be employed as a selection factor in the choice of grants to receive CICS funding. Only proposals with articulated ratepayer benefits can be considered for CICS funding.

12. We find that the proposed budget of $60 million a year over 10 years is appropriate and reasonable for the CICS investment, especially if it is leveraged with additional funds from private and public sources.

13. We find that in the absence of statewide legislation authorizing a tax to fund the Institute, it is appropriate to use ratepayer funds.

14. Energy use is a logical and equitable means of apportioning the costs of CICS and allocating the surcharge on an equal cents per therm or kWh basis among all CPUC jurisdictional California electric and gas utilities is fair and reasonable. However, to avoid any duplication, gas-fired electricity generators are explicitly exempt from assessment for gas CICS costs for gas purchases.

15. Residential ratepayers covered by the AB 1X rate freeze and/or eligible for CARE may be exempt from paying this utility surcharge.

16. We find it reasonable to specify that administrative costs, including the development of the Strategic Plan, and grant administration should be kept to a minimum, although we anticipate that there could be higher up-front costs for the initial administrative function costs that must be incurred before work in other areas can begin. We limit administrative costs to a maximum of 10% of the yearly total funding for the Institute. In the competitive process for the hub site, a critical selection factor will be how the applicant proposes developing the Strategic Plan and managing and controlling the administrative costs associated with operating the hub.

17. Mission-oriented applied and directed technological R&D as facilitated by the grant administration process is the primary purpose of the Institute and we expect that it will require up to a minimum of 85% of the CICS budget.

18. The Workforce Transition Subcommittee will study whether there is a need to support the energy sector's transition to a carbon-constrained future by anticipating and preparing for the resultant changes through workforce development and report back to the Commission on the study within six months. If the study supports having the Institute fund grants for the emerging workforce training, the Commission can consider, and approve if appropriate, an appropriate percentage allocation of Institute funds for that purpose. The Commission must act on the report within three months of its receipt.

19. We find it reasonable to allow the Governing Board and the Institute Executive Director to exercise some discretion in the percentage allocations between the administrative and R&D budget, as long as at a minimum 85% of the Institute's budget is allocated strictly to the R&D function. Any unspent funds from any yearly budget are to be rolled-over to the next budget year of the Institute. Any unspent funds remaining at the end of the 10th year are to be returned to the ratepayers, unless the Commission acts to continue ratepayer funding of the Institute.

20. We do not find it reasonable to allow the CICS to spend or allocate the ratepayer funds authorized in this decision for the purchase of research equipment or information infrastructure for the central hub of the Institute beyond the 10% allotted for program administration. Grant recipients may spend grant monies on equipment if the need for the equipment was identified in the grant application.

21. We find it reasonable to establish that the Institute will have a Governing Board with an Executive Committee, an Institute Executive Director, a Managing Director, staff, a Strategic Research Committee (SRC), and subcommittees.

22. It is reasonable for the CICS Governing Board to select the geographical location of the Institute's headquarters, or hub, in California, through a competitive solicitation. The Governing Board is to issue a Request for Proposals to which all non-profit California-based entities, including but not limited to public and private universities may respond. A peer review committee will rank the proposals and present the rankings to the Governing Board for selection.

23. Although it is our intent for the Institute to have a presence in both northern and southern California, we will leave it to the discretion of the Governing Board to determine how to best ensure that, once the physical location of the hub is determined.

24. We find that the CICS would benefit from a broad-based Governing Board as set forth in the decision and in Attachment C. No single organization or interest may hold a majority of seats on the Governing Board.

25. The Governing Board shall be co-chaired by the President of the Commission and the President of UC, or their respective designees. Other specifics relating to the Governing Board, including its duties, are set forth in the Charter, Attachment A.

26. We find it reasonable to require all members of the Governing Board to be subject to the conflict of interest policy, Attachment B.

27. In particular, members of the Governing Board who are affiliated with an applicant for the hub site or for a grant may not vote on that selection.

28. The Governing Board will conduct a national search for an Institute Executive Director who has responsibilities as set forth in the Charter, Attachment A.

29. The SRC shall be chosen by the Governing Board and will have no more than 20 members, all residing in California, or connected with an entity with a presence in California, with subject-matter expertise in a designated field related to climate change issues. The duties and responsibilities of the SRC are set forth in the Charter, Attachment A.

30. It will be the responsibility of the SRC to develop a Strategic Plan from which the short-term and long-term goals for the Institute will follow. The SRC is to undertake the following tasks as part of developing the Strategic Plan: conduct an inventory of current publicly and privately funded research efforts to meet the requirements of AB 32; identify area of technological innovation not being developed that will bring about the most promising options for reducing GHG emissions; identify which R&D areas have the potential for the greatest ratepayer benefits and develop a ratepayer benefit index; utilize the resources that the hub provides to execute the above functions; and identify and, where appropriate, prioritized opportunities that have the potential to benefit and/or engage members of California's disadvantaged communities.

31. The purpose of the research inventory is to avoid redundancy and overlap with existing programs and to utilize the efforts undertaken by CARB, the ETAAC and PIER.

32. The SRC will assist the Institute's staff in developing and administering the grant process. Utilizing the Strategic Plan, SRC is to develop target RFAs for the short-term and long-term research goals consistent with the Plan.

33. Once the Institute issues grant RFAs, it must ensure a competitive process for the review and awarding of grants. The awarding of grants shall be consistent with the policy set forth in this decision.

34. We find it reasonable to direct the Institute staff, in consultation with the Governing Board, to develop a peer review process through which all grant applications will be reviewed prior to being approved for funding. The peer review process shall be consistent with the requirements set forth in this decision.

35. The Governing Board shall oversee the Institute.

36. The Executive Director's duties and responsibilities are set forth in the Charter but include the responsibility to cause to be prepared a biennial comprehensive performance review by an outside source, and we adopt the recommendation that CCST is qualified to do such a review. This performance review should include an overall assessment of the Institute's effectiveness in achieving the Strategic Plan and reaching the long-term and short-term goals. CCST is to develop specific performance metrics to use to evaluate the success of the Institute.

37. The Executive Director is also to cause to be prepared an annual external financial audit.

38. The Executive Director is to prepare, in conjunction with Institute staff, an annual report. This report is to be submitted to the Governing Board within 90 days of the close of the fiscal year, and then to the Commission for approval. The annual report is to describe the activities of the Institute during the course of the year, including the RFAs issued, grant applications received, grants awarded, conferences organized, private and public funds solicited and obtained, and the accomplishments achieved by the Institute and its grantees.

39. The Executive Director is to prepare a proposed budget for each fiscal year of the Institute and submit it to the Commission for approval.

40. All reports submitted to the Commission for approval are to be posted on the Institute's website simultaneously with their submission to the Commission. The Executive Director is to appear before a public Commission meeting to answer questions on any Institute item before the Commission.

41. The annual report is to include the external financial audit that presents a financial summary of expenditures and funds received. The CICS is to maintain detailed financial records under generally accepted accounting principles and these records shall be maintained for at least six years. These records are to be made available to the Commission upon request.

42. It is reasonable to require that the Governing Board establish a TTS responsible for taking specific steps outlined in the decision to establish IP and technology transfer policies and protocols specific to the Institute. Once the TTS establishes policies and protocols for IP and technological transfer specific to the Institute it is to be given to the Executive Director for presentation to the Governing Board, and then posted on the Institute's website and submitted to the Commission for approval. Unless violative of any law, the TTS is to include in the policy at least a 10% return to ratepayers from net revenues.

43. It is a reasonable to find that until the Institute establishes IP and technology transfer policies and protocols specific to the Institute, all grant agreements shall be consistent with the framework established by Bayh-Dole.

Conclusions of Law

1. We find that it is in the public interest and the ratepayer interest to establish the CICS to accelerate applied R&D of practical and commercially

viable technologies that will reduce GHG emissions and allow California to adapt to the impacts of climate change.

2. The mission of the CICS is consistent with the purpose and findings contained in AB 32 wherein the Legislature found that "global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California," and with SB 1368 wherein the Legislature found that California must reduce its exposure to the costs associated with future federal regulations of [GHG] emissions.

3. We find that it is appropriate and necessary to direct a total of $60 million a year for 10 years of ratepayer funding for the establishment of CICS and the activities described in this decision, with direction to the Institute to use this money as leverage to secure additional funds from public and private sources

4. We find it necessary and reasonable given ratepayer funding of the Institute that the Institute be accountable to the Commission and the ratepayers. The Commission shall approve the following: non ex officio appointments to the Governing Board; appointments to the Executive Committee; the Strategic Plan; the annual proposed budget; annual report that includes external financial audit; biennial external performance review; and the IP and technology transfer policies and protocols.

5. The Strategic Research Committee will develop a ratepayer benefits index that will be an integral part of the Strategic Plan and will rank proposed projects on a continuum, from a high ratepayer benefit to low, or no ratepayer benefit, depending on cost-effectiveness, amount of GHG emission reductions, and whether the results are in the energy sector or another field. No project without an articulated ratepayer benefit will be chosen for CICS funding.

6. The costs of CICS should be allocated among CPUC jurisdictional gas and electric utilities on an equal cents per therm or kWh basis. To avoid any duplication, gas-fired electricity generators are explicitly exempt from assessment for CICS costs for gas purchases.

7. The costs for CICS should be apportioned between gas and electric customers based on the percentage of total 2007 state revenues once electricity generation, wholesale sales to municipalities and DWR revenues are excluded, resulting in an approximately 70-30 split between electric and gas ratepayers respectively.

8. Utilities should comply with funding restrictions imposed by AB 1X in assessing the surcharge for CICS from residential ratepayers and also exempt CARE customers from paying the surcharge.

9. The CICS should strictly segregate the ratepayer monies invested in CICS from other funds and keep them in an interest-bearing account so that all principal and interest generated by the funds are reserved for the purposes of CICS.

10. The Institute should allocate the $60 million funding for each year of the Institute's operation among the Institute's activities as follows: except for the initial start-up year, administrative costs, including hub costs, should not exceed 10%; the R&D budget should receive a minimum allocation of 85% of the Institute's funding; technology transfer and commercialization functions should not exceed 5% of the R&D budget; no money is authorized for the purchase of equipment beyond the 10% allotted for hub administration. As specified in the decision, grant recipients may purchase equipment.

11. The Governing Board and the Institute Executive Director may exercise some discretion in the percentage allocations between the administrative and

R&D budget, as long as at a minimum 85% of the Institute's budget is allocated strictly to the R&D function. Any unspent funds from any yearly budget are to be rolled-over to the next budget year of the Institute. Any unspent funds remaining at the end of the 10th year are to be returned to the ratepayers, unless the Commission acts to continue ratepayer funding of the Institute.

12. The Institute should have a Governing Board with an Executive Committee, an Executive Director, a Managing Director, staff, a SRC and subcommittees. The particulars of these positions are set forth in the Charter, Attachment A.

13. All members of the Governing Board are subject to the conflict of interest policy set forth in Attachment B.

14. The Institute should have a physical headquarters, or hub, geographically located in California at an institution chosen through a competitive solicitation. The Governing Board is to solicit applications from all non-profit California institutions, including, but not limited to, public and private universities. A panel of peer review experts is to evaluate and rank the proposals, with the final selection of the host institution to be made by the Governing Board. Specifically, institutions are to provide the following information that will be considered in the hub selection process:

a. A detailed description of how they would host the Institute in a way that would advance the Institute's mission─applied and directed R&D and commercialization of technologies;

b. How the hub would be structured to utilize the existing or planned resources of the institution;
c. How the infrastructure and existing systems of the host institution can serve the Institute;

d. Describe the physical space;

e. What intellectual and other resources does the proposed hub have that could enhance the Institute;

h. Whether the host institution would house the Institute wholly within;

i. How they would control and manage the administrative costs of the hub,

j- How they would maintain a web portal;

k. How they would approach the Strategic Planning process to ensure that the SRC fulfills its duties to create an inventory of existing programs, identify uncharted areas of R&D, and focus on R&D that has a ratepayer benefit;

l. How the practices and policies of the hub and the resources of the host institution be will used to support participation of members of disadvantaged communities in projects funded by the CICS;

m. A description of practices and policies it intends to use to support participation of members who are broadly representative of the population of California in the projects funded by the CICS;

n. How much matching funding they will commit to raise; and

o. How they could ensure that whether its geographic location was northern or southern California, it could serve the interests of the entire state.

15. We defer to the Governing Board how to ensure that the Institute has a presence in both northern and southern California.

16. The Institute shall establish and maintain a website for climate-related research directed at researchers and students.

17. The first and primary function of the SRC is to develop a Strategic Plan that will be the framework from which the Institute will formulate its budget, short-and long-term goals and grant administration process. The SRC is to undertake the following tasks as part of developing the Strategic Plan: conduct an inventory of current publicly- privately-funded research efforts to meet the requirements of AB 32; identify area of technological innovation not being developed that will bring about the most promising options for reducing GHG emissions; identify which R&D areas have the potential for the greatest ratepayer benefits and develop a ratepayer benefits index; utilize the resources that the hub provides to execute the above functions; and identify and, where appropriate, prioritized opportunities that have the potential to benefit and/or engage members of California's disadvantaged communities.

18. The Strategic Plan must include a ratepayer benefit index that will be used by SRC and Institute staff to develop and administer the grant process from solicitation through selection.

19. SRC, in consultation with Institute staff is to develop a peer review process through which all grant applications will be reviewed prior to presentation to the Executive Director for recommendation to the Governing Board.

20. The Governing Board shall oversee the Institute and its duties and responsibilities are set forth in the Charter.

21. The Executive Director's duties and responsibilities are set forth in the Charter, but to ensure Commission oversight of the Institute, the Executive Director is to cause to be prepared a biennial comprehensive performance review. An external evaluator should conduct this review that includes an overall assessment of the Institute's effectiveness in reaching the goals of the

Strategic Plan, as well as descriptions of specific performance metrics, drafted specifically for the Institute.

22. We adopt the recommendation that CCST perform this biennial comprehensive performance review and that CCST recommend performance metrics that will assess the Institute's success in carrying out its mission and Strategic Plan. This audit is to be presented to the Governing Board, posted on the Institute's website and submitted to the Commission for approval.

23. Every year, the Executive Director is to cause to be prepared an external financial audit. This audit is to be presented to the Governing Board, posted on the Institute's website and submitted to the Commission for approval.

24. Every year, the Executive Director is to prepare a proposed budget for the upcoming fiscal year that is to be presented to the Governing Board, posted on the Institute's website and submitted to the Commission for approval.

25. Every year, the Executive Director is to prepare an annual report. The annual report should describe the activities of the Institute during the course of the year, including the RFAs issued, grant applications received, grants awarded, conferences organized, and the accomplishments achieved by the Institute and its grantees.

26. The annual report is to include an interim internal audit that presents a financial summary of expenditures and funds received. The CICS is to maintain detailed financial records under generally accepted accounting principles and these records shall be maintained for at least six years.

27. This annual report is to be presented to the Governing Board within 90 days of the close of the fiscal year of the Institute, and once approved by the

Governing Board, posted on the Institute's website and submitted to the Commission for approval.

28. The Executive Director is to appear at a public meeting before the Commission to answer questions on any submission before the Commission for approval.

29. The Governing Board is to establish a Technology Transfer Subcommittee responsible for taking specific steps outlined in the decision to establish IP and technology transfer policies and protocols specific to the Institute, and, unless violative of law, include at least a 10% return to ratepayers from net revenues. Until then, all grant agreements shall be consistent with the framework established by Bayh-Dole. Once completed, the IP and technology transfer policy is to be presented to the Executive Director for presentation to the Governing Board, and then posted on the website and submitted to the Commission for approval.

30. This decision should be effective immediately so that the process of establishing the CICS can begin forthwith.

O R D E R

IT IS ORDERED that:

1. We establish a California Institute for Climate Solutions (CICS) to accelerate applied research and development (R&D) of practical and commercially viable technologies that will reduce greenhouse gas (GHG) emissions and allow California to adapt to impacts of climate change.

2. The Charter of the CICS, Attachment A to this decision, sets forth the particulars of the Institute, including its authority, mission, the constitution of the Governing Board and its functions and authority, meeting requirements, subcommittees, officers and duties and committees.

3. As a condition precedent to establishing the CICS, the co-chairs of the Executive Committee of the Governing Board, the President of the California Public Utilities Commission (Commission) and the President of the University of California (UC), are directed to meet within 90 days of the date of this decision, to initiate the steps, as set forth in the decision and consistent with Attachments A, B and C, to create the Executive Committee and the Governing Board and to make nominations to the Strategic Research Committee (SRC). The assigned Commissioner or Administrative Law Judge may modify the timeline set forth in this ordering paragraph.

4. The California investor-owned electric and gas utilities shall collect the $60 million per year, for the ten years authorized by this decision, from all electric and gas ratepayers, exempting gas-fired electricity generators from the gas charge, and consistent with funding restrictions imposed by Assembly Bill 1X and any applicable exemptions for customers eligible for California's Alternative Rates for Energy. The utilities shall hold these funds and pay the funds out directly to each grantee. The exact mechanics of how this process will work shall be addressed by each utility via advice letter.

5. The utilities shall allocate these additional revenues on an equal cents per kWh or cents per Therm basis.

6. The utilities shall each file an advice letter within 30 days of the effective date of this decision to modify tariffs to implement this decision. The revised tariffs shall become effective no later than 90 days after the effective date of this decision subject to Energy Division determining that the tariffs are in compliance with this order. The utilities may consolidate rate changes with other planned rate changes following approval of the tariff changes.

7. The utilities may record the actual payments made to the CICS in a memorandum account, the CICS Memorandum Account, or an existing account, as deemed appropriate by the utilities.

8. Utilities are authorized to make monthly payments to the CICS as determined in the workshop and consistent with the approved tariff. Payments will be on a uniform monthly basis, so that the annual allocation for each utility is paid in full by March 31st of each year of the program commencing in 2009. Therefore, for 2008 through March 2009, monthly payments and accruals will be set by dividing the authorized annual amounts by the number of months remaining in the fiscal period through March 2009. Subsequently, the authorized monthly amounts will equal the authorized annual amounts divided by 12 for the year ending with the following March.

9. Once CICS receives ratepayer funds, CICS is to strictly segregate the ratepayer monies invested in CICS from other funds, and keep them in an interest-bearing account so that all principal and interest generated by the funds are reserved for the purposes of CICS.

10. The $60 million funding for each year of the Institute's operation should be allotted among the Institute's activities as follows: except for the initial start-up year, administrative costs should not exceed 10%; technological R&D through the grant administration process should not fall below 85% of the budget; and no money is authorized for the purchase of research equipment or information infrastructure for the central hub of the Institute beyond the 10% allocated for program administration. Grant recipients may spend grant money on equipment if the need for the equipment was identified in their grant application. The Governing Board and Institute Executive Director may exercise discretion in the percentage allocation among the administrative and workforce

training and education funds, but may not allow less than 85% of the Institute's budget to be spent on R&D activities.

11. The CICS shall obtain matching funds over the ten year life of the Institute that equal or exceed the $ 600 million in ratepayer funding. The CICS should obtain 100% of the matching funds on an annual basis beginning in Year 5.

12. The Institute will have a physical headquarters, or hub, located in California that shall perform the core functions of the Institute. The Governing Board is directed to run a competitive solicitation, seeking proposals from non-profit California institutions, including, but not limited to, public and private universities. A panel of qualified external peer reviewers shall be used to evaluate and rank proposals, with the final selection of the host institution to be made by the Governing Board from the ranked reviews. We defer to the Governing Board the responsibility of ensuring that the Institute has a presence in both northern and southern California.

13. The Institute shall establish and maintain a web portal.

14. Creation of the Strategic Plan is the first and primary function of the SRC, and pursuant to our directive in Ordering Paragraph 3, that is to be the focus of the Governing Board as soon as it is constituted according to the prescriptions set forth in this decision and Attachments A, B and C.

15. The Executive Director shall ensure that the following reports are prepared:

- a biennial comprehensive performance review that includes an overall assessment of the Institute's effectiveness in reaching the long-term and short-term goals consistent with the Strategic Plan approved by the Governing Board, as well as descriptions of specific performance metrics, to be determined by the Executive Director and the Governing Board. We adopt the recommendation that the California Council on Science and Technology perform this review;

- an annual external financial audit;
- a yearly proposed budget;
- an annual report [within 90 days of the close of the fiscal year]. The annual report is to include an interim internal audit that presents a financial summary of expenditures and funds received. The annual report should describe the activities of the Institute during the course of the year, including the RFAs issued, grant applications received, grants awarded, conferences organized, and the accomplishments achieved by the Institute and its grantees..

16. The CICS shall maintain detailed financial records under generally accepted accounting principles and these records shall be maintained for at least six years

17. Once these reports are prepared, they are to be presented to the Governing Board for approval, posted on the Institute's public website and submitted to the Commission for approval. The Executive Director shall appear before the Commission to answer questions on any Institute matters before the Commission for approval.

18. The Governing Board shall establish a Technology Transfer Subcommittee responsible for taking specific steps outlined in the decision to establish intellectual property and technology transfer policies and protocols specific to the Institute, and, unless violative of law, include a return to ratepayers from net revenues. Until then, all grant agreements shall be consistent with the framework established by Bayh-Dole. Once completed, the IP and technology transfer policy is to be presented to the Executive Director for presentation to the Governing Board, and then posted on the website and submitted to the Commission for approval.

19. The Workforce Transition Subcommittee of the governing board shall study whether it is necessary to support the energy sector's transition to a carbon-constrained future through anticipating and preparing for the resultant changes through workforce development and report back to the Commission on the study. The workforce transition study should identify gaps in current workforce development programs with specific reference to new professional and job opportunities likely to result from the transition of California toward its green energy economy goals. The study should make recommendations on how to best coordinate industry, government, academic, business and professional groups relevant to filling those gaps and should present a detailed plan. This plan may include a recommendation as to whether the Institute should take on a role in workforce development, and, if so, how the Institute could best collaborate with others as to how to fill the gaps, and specific recommendations to relevant State and public authorities such as educational and vocational institutions. We recognize that funding workforce training programs is not a direct purpose of this research Institute; however, the study may include suggestions for funding or providing matching money for discrete projects that are not to be funded by others in an effort to jumpstart appropriate emerging workforce development programs. The workforce transition subcommittee shall submit its study to both the Governing Board and the Commission within six months from its initiation, and Commission should act on the subcommittee's recommendations within 3 months of receipt. If the study supports having the Institute fund grants for the emerging workforce training and the Commission concurs in this recommendation, the Commission may allocate an appropriate percentage of Institute funds for that purpose.

20. Rulemaking 07-09-008 is closed.

This order is effective today.

Dated _________________, at San Francisco, California.