ATTACHMENT A

CHARTER OF THE CALIFORNIA INSTITUTE FOR CLIMATE SOLUTIONS

ARTICLE I: AUTHORITY

Section 1. The California Institute for Climate Solutions ("Institute") is established by the California Public Utilities Commission ("Commission") in D.08-04-039 as modified by D.08-04-054.

Section 2. The Governing Board for the Institute created herein is vested with all the powers and duties consistent with this Charter granted to it by the Commission in D.08-04-039 as modified by D.08-04-054.

Section 3. This Charter may only be modified by a formal decision of the Commission.

ARTICLE II: MISSION

Section 1. The mission of the Institute is as follows:

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

- To speed the transfer, deployment, and commercialization of technologies that have the potential to reduce greenhouse gas 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.

ARTICLE III: CONSTITUTION OF THE GOVERNING BOARD

Section 1. (Governing Board) The Governing Board shall have a diverse and broad representation including stakeholders from all different areas of interest. See Attachment C. Non ex officio appointments to the Governing Board must be submitted to the Commission for approval. A two-thirds vote of the Governing Board is necessary to remove any members.

Section 2. (Executive Committee) The Executive Committee of the Governing Board shall have nine members. The President of the Public Utilities Commission shall select four members from the Governing Board to serve on the Executive Committee and the President of the University of California shall select three members from the Governing Board for the Executive Committee. Appointments to the Executive Committee must be submitted to the Commission for approval.

Section 3. (Co-Chairs) The Governing Board shall have two co-chairs. The President of the Public Utilities Commission, or his/her designee and the President of the University of California, or his/her designee Shall serve as co-chairs for the first 3 years. In year 4 and every three years thereafter the Governing Board as a whole shall elect co-chairs by majority vote.

Section 4. (Alternates) Any member of the Governing Board may from time to time delegate those duties that are attendant to his or her membership on the Governing Board, including but not limited to attending noticed meetings, to an executive officer of the organization on behalf of which he or she has been appointed to the Governing Board.

Section 5. **(Conflict of Interest)** Each member of the Governing Board, including any designee or alternate, is subject to the conflict of interest policy, Attachment B.

Section 6. **(Expiration of Term and Removal)** Governing Board members shall serve for a 3 year term. A member may be removed by a two-thirds vote of the Governing Board and the Commission approves the removal. Governing Board members whose terms have expired shall continue to serve until their replacements are appointed.

Section 7. (Appointment) For non-ex-officio members of the board: the represented constituency shall nominate up to three people. Any Commissioner can add nominees to the list. The Commission President shall choose among the nominees. All nominees will receive meaningful consideration. The Commission shall vote on the President's recommended selection.

Section 8. (Board Compensation) All members of the Governing Board serve on a volunteer basis and receive no compensation or reimbursement for attending meetings or otherwise fulfilling their duties.

Section 9 (Filling Vacancies) The Governing Board shall form a search committee to nominate candidates as vacancies appear. The Board shall choose a nominee to recommend to the Commission for approval.

ARTICLE IV: GOVERNING BOARD – FUNCTIONS AND AUTHORITY

Section 1. (Governing Board Functions) The Governing Board shall perform the following functions:

(a) Conduct a competitive solicitation to determine which academic or non-profit research institution will host the Institute hub.

(b) Establish bylaws for the operation of the Governing Board, the Executive Committee and all Subcommittees.

(c) Review the Strategic Plan and submit it to the Commission for approval.

(d) Conduct a search for and hire the Institute's Executive and Managing Directors.

(e) Oversee the operations of the Institute, Institute staff, and the Strategic Research Committee.

(f) Review and, if appropriate, approve nominations to the Strategic Research Committee.

(g) Review external financial audits and reports of the Institute's operations submitted by the Executive Director.

(h) Review the intellectual property and technology transfer protocols developed by the Technology Transfer Subcommittee and submit it for review and approval by the Commission.

(i) Accept, on behalf of the Institute, additional revenue and real and personal property, including but not limited to, gifts, royalties, interest, and appropriations that may be used to supplement annual research grant funding and the operations of the Institute.

(j) Perform all other acts necessary or appropriate in the exercise of its power, authority, and jurisdiction over the Institute.

Section II. (Executive Committee Functions) At all times between meetings of the Governing Board, the Executive Committee of the Governing Board ("Executive Committee") shall have all the duties and authorities of the Governing Board, EXCEPT that:

(a) The Governing Board alone has the power to adopt and amend the Institute's bylaws.

(b) The Governing Board, provided a quorum is present at any meeting, may by a majority vote overrule any act or decision of the Executive Committee.

(c) The Governing Board, provided a quorum is present at any meeting, may by a majority vote suspend a bylaw or any other resolution conferring power upon the Executive Committee, such suspension to remain in effect pending amendment of any bylaw conferring such powers.

Section III. (**Legal Counsel)** The Governing Board will have the authority to retain legal counsel for the Institute, as necessary.

ARTICLE V: MEETINGS

Section 1. (Regular Meetings) The Governing Board shall hold at least four public meetings per year. The Executive Committee shall meet monthly but need not meet in months that the Governing Board is meeting as a whole.

Section 2. (Open and Closed Meetings) All meetings of the Governing Board and the Executive Committee, except those closed sessions described below or otherwise permitted by law, shall be open and public in conformance with the Bagley-Keene Open Meeting Act. The Governing Board and Executive Committee may conduct closed sessions when it meets to consider or discuss:

(a) Matters involving confidential intellectual property or commercially sensitive information, whether patentable or not.

(b) Matters concerning the appointment, employment, performance compensation, or dismissal of Institute officers and employees.

Section 3. (Notice of Meetings) At least 10 days in advance of each regular meeting of the Governing Board or Executive Committee, notice of the meeting shall be given to any person or organization who requests that notice in writing and also made available on the internet. The notice shall include the name, address, and telephone number of a person who can provide further information prior to the meeting and a specific agenda for the meeting, containing a brief description of the items of business to be transacted or discussed in either open or closed session.

Section 4. (Special and Emergency Meetings) Special and emergency meetings may be called by the co-chairs if compliance with the 10-day notice would impose a substantial hardship on the Governing Board or if immediate action is required to protect the public interest. These meetings shall conform to the requirements of the Bagley-Keene Open Meeting Act (Government Code section 11120 through section 11132) applicable to special and emergency meetings.

Section 5. (Quorum) A quorum of the Governing Board shall be achieved when at least 12 members of the Governing Board are present, including both co-chairs. A quorum of the Executive Committee shall be achieved when at least 5 members of the Executive Committee are present, including both co-chairs.

Section 6. (Voting) All actions of the Governing Board or Executive Committee shall be taken at properly called meetings at which there is a quorum. The Governing Board or Executive Committee shall act by a majority vote of all members present.

Section 7. (Rules of Order) Debate and proceedings before the Governing Board shall be conducted in accordance with Robert's Rules of Order Newly Revised (10th Edition) except to the extent in conflict with this charter or other rules established by the Governing Board.

ARTICLE VI: SUBCOMMITTEES OF THE GOVERNING BOARD

Section 1. (Establishment) In addition to the committees listed below, the Governing Board may establish as many subcommittees as are necessary to facilitate the work of the Governing Board. The Governing Board shall determine the size and purpose of each subcommittee and designate a subcommittee chairperson.

Section 2. (Authority) No subcommittee shall have the authority to make decisions that obligate or bind the Institute or the Governing Board. Any subcommittee action must be ratified in a meeting of the Governing Board or the Executive Committee.

Section 3. (Technology Transfer Subcommittee) The Governing Board shall establish a Technology Transfer Subcommittee to:

(a) Review similar institutions' rules, policies and practices that govern or pertain to the disposing intellectual property and incentivizing the transfer and commercialization of technologies;

(b) Identify barriers to technology transfer specific to the Institute;

(c) Develop and submit to the Commission for approval intellectual property and technology transfer policies and protocols that will ensure financial returns for ratepayers while emphasizing expedient transfer and commercialization of technologies. The intellectual property and technology transfer policies and protocols shall govern how intellectual property is transferred or otherwise disposed of;

(d) Advise the Executive Director and Institute staff regarding intellectual property and technology transfer matters; and,

(e) Review all proposed agreements for additional non-ratepayer funding for the purpose of identifying potential technology transfer issues.

Section 3. (Conflict of Interest Subcommittee) The Governing Board shall establish a Conflict of Interest Subcommittee that will be responsible for:

(a) Reviewing conflict of interest policies at similar institutions.

(b) Developing a conflict of interest protocol to be signed by all Institute staff, including the Executive and Managing Directors.

(c) Developing a conflict of interest protocol to be signed by all members of the Strategic Research Committee.

(d) Both conflict of interest protocols must be submitted to the Governing Board for ratification and then to the Commission for approval.

Section 4. (Workforce Transition Subcommittee) The Governing Board shall establish a Workforce Transition Subcommittee which shall:

(a) Study whether it is necessary to support the energy sector's transition to a carbon-constrained future through workforce development.

(b) Identify gaps in workforce development programs for professional and job opportunities from California's transition to a green economy.

(c) Recommend how to coordinate industry, government, academic, business and professional groups to fill the gaps.

(d) Submit the study to the Governing Board and the Commission with suggestions for funding any recommended workforce development programs.

Section 5. (Members) The co-chairs of the Governing Board shall appoint the chairperson of each subcommittee. The chairperson may then select other members of the Governing Board to serve on the subcommittee, subject to the consent of the co-chairs of the Governing Board.

ARTICLE VII: OFFICERS AND DUTIES

Section 1. (Officers) The officers of the Institute shall be the Executive Director and the Managing Director.

Section 2. (Selection of Officers) Whenever the office of the Executive Director or the Managing Director is vacant, the Governing Board shall select a replacement from a list of nominees compiled by the Executive Committee.

Section 3. (Removal of Officers) All officers serve at the pleasure of the Governing Board.

Section 4. (Duties of the Executive Director) The Executive Director's duties shall be established by the Governing Board, but shall include:

(a) Developing each request for grant applications and managing the grant solicitation process, including the evaluation and approval of individual grants.

(b) Overseeing the development of the Strategic Plan.

(c) Soliciting non-ratepayer, matching funds from public and private sources.

(d) Causing the completion of a biennial external comprehensive performance evaluation.

(e) Developing an annual budget and submitting it for approval to the Commission no later than 90 days after approval by the Governing Board.

(f) Preparing an annual report and after ratification by the Governing Board, submitting it for approval to the Commission no later than 90 days after the close of the Institute's fiscal year.

(g) Causing the completion of annual external financial audits.

(h) Interfacing with the Commission, the California Environmental Protection Agency, the California Energy Commission, all other relevant state and federal agencies, the California Legislature, the Governor's Office, and the public.

(i) Supervising the formation of grant agreements.

(j) Managing and supervising the Institute staff.

(k) The Executive Director may delegate any of his or her responsibilities and duties to the Managing Director.

Section 5. (Duties of the Managing Director) The duties and responsibilities of the Managing Director shall be established by the Governing Board in consultation with the Executive Director.

Section 6. (Officer and Staff Compensation) The Governing Board shall set compensation for the Executive Director, the Managing Director, and all Institute staff. Compensation will be commensurate with that of executive officers and scientific, technical, and administrative staff of research institutions. If necessary, the Governing may hire an independent professional compensation consultant to conduct a market survey and provide an appropriate compensation range for each position.

ARTICLE VIII: Strategic Research Committee

Section 1. (Establishment) The Institute shall establish a Strategic Research Committee to support the work of the Institute's staff.

Section 2. (Appointment of Members)

(a) The Governing Board shall, by majority vote of all members present, appoint the members of the committee from a list of nominees compiled by the Executive Director. No single institution shall have a majority of representatives on the Committee.

(b) Nominees for the Strategic Research Committee shall be selected from the faculties of UC, CSU and CC systems, Stanford, USC, Caltech and the National Labs; the staffs of the California Public Utilities Commission, California Energy Commission, and California Air Resources Board; and from the public/private sectors and the environmental community

Section 3. (Committee Functions)

(a) The Strategic Research Committee shall have the following functions:

i. To develop a Strategic Plan by March 13, 2009, and update it on an annual basis. The Strategic Plan will include an inventory of public funding of climate change, potential areas of research, and a ratepayer benefit index;

ii. Review grant proposals recommended by the peer review committee; and

iii. To assist the CICS officers develop short term and long term goals consistent with the Strategic Plan.

ARTICLE IX: GRANT ADMINISTRATION

Section 1. (Institute Policy) The Institute's staff shall develop a Grant Administration Policy. The Governing Board must adopt the Policy into the Institute's bylaws prior to the initiation of the first official grant solicitation.

Section 2. (Application Review) The Policy shall include thorough and transparent procedures for the application review process. Along with other review criteria developed within the Policy, each grant application shall be evaluated for an affirmative demonstration of ratepayer benefit, which may include the potential to attract private matching funds.

Section 3. (Peer Review) The Institute's staff, in consultation with the Governing Board, shall develop an impartial and expeditious peer review process. To the degree practicable, the Institute should convene uncompensated peer review panels comprised of experts in the particular field of research or technology being considered for grant making.

Section 4. (Application Solicitation) The Institute's official grant solicitations will be announced on the Institute's website. Each announcement or solicitation will specify the objectives and requirements that apply, as well as the review criteria that will be used to evaluate the merits of applications submitted in response to the announcement.

ARTICLE X: PERFORMANCE EVALUATION AND AUDITS

Section 1. (Biennial Performance Review) The Governing Board and Institute Staff shall cooperate with annual performance reviews completed by the California Council on Science and Technology ("CCST").

Section 2. (Annual Financial Audits) The Executive Director shall contract for and cause the completion of an annual financial adult performed by an external evaluator.

(END OF ATTACHMENT A)

ATTACHMENT B

CONFLICT OF INTEREST POLICY STATEMENT FOR THE GOVERNING BOARD OF THE CALIFORNIA INSTITUTE FOR CLIMATE SOLUTIONS

In order to ensure that members of the California Institute for Climate Solutions (CICS) Governing Board acts pursuant to the highest ethical standards and to avoid potential conflicts of interest, each member must sign the following Conflict of Interest Policy statement:

1. Members of the CICS Governing Board shall not apply for or receive money through grants, loans or contracts from the CICS.

2. Members of the CICS Governing Board shall not make, participate in making or in any way attempt to use their official position on the CICS Governing Board to influence a decision regarding a grant, loan, or contract that financially benefits the member or the entity he or she represents or his or her employer.

3. CICS Governing Board shall not make, participate in making or in any way attempt to use their official position on the CICS Governing Board to influence a decision if it is reasonably foreseeable that the decision will have a material financial effect, distinguishable from its effect on the public generally, on the member or his or her immediate family, or on one of the member's financial interests, all as defined in the Political Reform Act.

4. Members of the CICS Governing Board shall not receive or accept any gift from any person or entity who is doing business with, or seeking to do business with, the CICS under circumstances from which it reasonably could be substantiated that the gift was intended to influence the member's future official actions at the CICS or to reward the member for past ones.

5. Members of the CICS Governing Board shall not receive or accept, directly or indirectly, any gift, including money, or any service, gratuity, favor, entertainment, hospitality, loan, or any other thing of value from a lobbyist who is registered to lobby the California Public Utilities Commission.

I have read and understand the Conflict of Interest Policy for Members of the CICS Governing Board and I certify that I will abide by it as long as I am a member of the CICS Governing Board.

Signature _____ Date_____

(END OF ATTACHMENT B)

ATTACHMENT C

CICS Governing Board			
Member	**Category**	**Appointing Authority**	**Comments**
CPUC President	Government	Ex officio	Or his/her designee. Does not require Commission approval.
Secretary - Environmental Protection Agency	Government	Ex officio	Or his/her designee. Does not require Commission approval.
Secretary - Resources Agency	Government	Ex officio	Or his/her designee. Does not require Commission approval.
Secretary Business, Transportation & Housing	Government	Ex Officio	Or his/her designee. Does not require Commission approval.
Director - Division of Ratepayer Advocates	Ratepayer	Ex officio	Or his/her designee. Does not require Commission approval.
UC President	Academic-UC	Ex officio	Or his/her designee. Does not require Commission approval.
UC Representative - Southern CA Campus	Academic-UC	UC President	Requires Commission approval.
UC Representative – Northern CA Campus	Academic-UC	UC President	Requires Commission approval.
CSU Representative	Academic-CSU	Nominated by CSU	Requires Commission approval.
California Community College-Representative	Academic-CCC	Nominated by CCC	Requires Commission approval.
Private California University Representative	Academic-Private	PUC President	Selected from list of nominees compiled by participating private university inter-campus committee. Requires Commission approval.

CICS Governing Board			
Member	**Category**	**Appointing Authority**	**Comments**
Representative of a CA-based National Lab	Academic Lab	PUC President	Selected from list of nominees compiled by participating National labs. Requires Commission approval.
Representative of CA-based Investor Owned Utility	Private Sector-Utility	PUC President	Selected from a list of nominees submitted by California IOUs. Requires Commission approval.
Representative CA-based non-utility Energy Company	Private Sector – Energy	PUC President	Selected from a list of nominees submitted by California non-utility energy companies. Requires Commission approval.
Representative of the agricultural community	Agricultural Community	PUC President	Selected from a list of nominees submitted by the California Farm Bureau. Requires Commission approval.
Green Technology Industry Representative	Green Technology Industry	PUC President	Selected from a list of nominees submitted by the industry. Requires Commission approval.
Venture Capital Industry Representative	Financial Industry	PUC President	Selected from a list of nominees submitted by the industry. Requires Commission approval.
Representative of Minority, Low Income, or Underserved Communities	Minority, Low Income, or Underserved Communities	PUC President	Selected from a list of nominees submitted by the represented constituencies. Requires Commission approval.

CICS Governing Board			
Member	**Category**	**Appointing Authority**	**Comments**
Environmental Representative	Environmental	PUC President	Requires Commission approval.
A Member of the California Assembly	Government	Assembly Speaker	Does not require Commission approval.
A California Senator	Government	Head of Senate Rules Committee	Does not require Commission approval.
Representative of a California Publicly Owned Utility*	Public Sector-Energy	PUC President	Selected from a list of nominees submitted by California POUs. Requires Commission Approval.*

*Requires a significant financial contribution to the Institute, as determined by the Commission, from the represented POU's ratepayers.

(END OF ATTACHMENT C)

ATTACHMENT D

Summary of Party Comments on CICS

The OIR invited respondents and other parties to comment on any and all aspects of the CICS proposal that was attached to the OIR. In addition, parties were asked to comment on specific questions, as well as to address any subjects of particular interest to them. The response was tremendous. More than 24 parties submitted either comments or reply comments, or both.

Commenting parties provided the Commission with an analysis and perspective that is invaluable it its review, evaluation and inquiry into the CICS proposal. There is no way to effectively summarize the individual contributions of so many parties, but collectively they provided valuable insight from the perspective of competing stakeholder interests that facilitated the Commission's decision on the CICS.

Below is a brief summary of the comments organized by question clusters. For a full understanding of each intervenor's position on the questions posed and on the CICS as it evolved since the OIR was initiated in September 2007, readers are directed to peruse the full filings.

Need and Mission (Questions 1, 2, 9, 13, 14, 15, & 17)

California Farm Bureau (CFB)
CFB is generally supportive of the CICS but believes that funding should come from all residents of California, and not just utility ratepayers. CFB also requests that an agricultural representative be considered for membership on Stakeholder Committee as CFB would like to offer its assistance in directing the scope and direction of research. CFB also urges the Commission to coordinate the efforts of CICS with the Economic and Technology Advancement Advisory Committee (ETAAC), that also includes members from the UC system as well as forestry and agriculture, to ensure that CICS complements the work done by ETAAC.

California Institute for Technology (CalTech)
CalTech agrees generally that there is a need for research. However, CalTech recommends that the proposal be re-written with input from other parties to revise the governance structure, research award system, and budget. CalTech further suggests that the Institute should consider ensuring programs use global satellite assets to improve understanding of regional climate change and use simulations to asses the regional impact of mitigation and adaptation strategies. [Opening Comments, p. 5.] Furthermore, CalTech argues that CICS should create an "optimized observation network" and make the data readily available to all research institutions in California. [Opening Comments,

pp. 5-6.] CalTech opines that funding of regional climate research on impacts and mitigation strategies is unlikely to be duplicative of federal research. In order to ensure that as much grant money is available for research, CalTech suggests that Research and Education funding should have a floor of 75% of funding and the 15% proposed for equipment should be considered a ceiling, not a spending requirement. [Reply Comments, p. 4.]

California Council on Science and Technology (CCST)
CCST supports the establishment of CICS, but suggests that the Institute could be dev eloped to serve as a convener to develop the K-12 science outreach programs. CCST already works closely with the state's leaders in K-12 science and math education as well as the community colleges and universities. [Opening Comments, p. 5.] In order to best identify opportunities for CICS funding, CCST suggests that CICS conduct a full inventory of climate research efforts to avoid duplication of efforts. CCST also proposes that the CICS include representatives from the relevant agencies and programs in the initial roadmapping process.

California State University System/California Community College System (CSU)
CSU can partner with the Institute and provide leadership in certain applied research projects, particularly in agriculture (Agricultural Research Initiative), biotechnology (via the CSU Program in Education and Research in Biotechnology), and coastal monitoring (Center for Integrative Coastal Observation, Research, and Education). CSU can also play a critical role in teacher preparation, as 60% of the state's teachers are educated at CSU. This would facilitate dissemination of research in the K-12 system. [Opening Comments, p. 4.]

CSU feels there is a real need for the programs outlined in the proposal, and CSU approves of the proposed centralized structure since it offers "clear efficiencies and program focus" and an "ability to respond to stakeholder needs." [Opening Comments, p. 12.] CSU advises that most of the funds should be partitioned more or less equally between applied technology research and educational programs, but the Governing Board should be given the flexibility to apportion funds in any given fiscal year according to its priorities and the recommendations of external experts. In regards to funding, CSU suggests that CICS funding should be in addition to any existing programs.

CSU proposes two additional research areas: 1) research on the effectiveness of programs on changing consumer and industry behavior, and 2) characterization of the current and future impacts of climate change on California's ecosystems. CSU is positioned to undertake the bulk of the educational outreach and worker training programs. There are longstanding partnerships between CSU and the community colleges to conduct workforce development.

Community Environmental Council
The Community Environmental Council supports the CICS but is concerned that the proposal does not provide sufficient background on extant partnerships and research efforts to provide adequate context for the CICS. From the Community Environmental

Council's perspective, a centralized entity for coordinating climate research could be very useful. The Community Environmental Council recommends some additional areas for research: market transformation; policies and technologies to reduce natural gas demand; and a focus on geo-engineering to reduce GHG concentrations in the atmosphere and remove heat from the oceans. [Opening Comments, pp. 10-11.]

Consumer Federation of California (CFA)
CFA finds the proposed Institute and nearly all of the research described in the proposal duplicative to steps already being undertaken by the State. [Opening Comments, p.1.] CFA argues that California's utility rates are among the highest in the nation, and this is largely because of the many additional costs currently charged to customers over and above the cost of providing services. CFA provides a litany of the many State sponsored climate policy and research activities, including AB 32, that gave the California Air Resources Board (CARB) the lead role in developing climate change policies for the State and created the ETAAC to advise the ARB on activities to facilitate investment in and implementation of technological research and development opportunities, the Public Interest Energy Research (PIER) program and the California Climate Change Center, established by the California Energy Commission (CEC), that are also conducting a broad range of climate change research. CFA does not support funding the Institute with ratepayer money.

Division of Ratepayer Advocates (DRA)
DRA opposes the Proposal. DRA argues that the Institute's activities are redundant with existing programs, and funding an academic institute is not generally an appropriate use of ratepayer funds. DRA has three primary concerns: 1) whether the Commission and the University have the legal authority to establish the CICS, 2) will the objectives of the CICS overlap significantly with other programs, and 3) is it appropriate that the proposal places 100% of the cost on IOU ratepayers when the benefits will extend far beyond the class of ratepayers. [Opening Comments. p. 2.]

DRA suggests that in order to help coordinate research, the University could simply set up a web portal instead of establishing a new institute. If the Commission goes forward and establishes the Institute with ratepayer funds, DRA recommends that funds should be used to support technology and policy research and only administrative costs that are directly related. Increased funding to research grant programs could be an alternative to a new institute. DRA is opposed to either increasing ratepayer funded efforts that are duplicative of programs underway, or taking money away from existing programs to give to CICS.

Environmental Defense
Environmental Defense believes there is a need for the CICS and that having a centralized coordinating point for California's research institutions will be valuable. [Opening Comments, p. 3.] From Environmental Defense's point of view, it will be important to ensure that CICS activities are not duplicative, and that the strategic plan and annual agendas should contain clear guidelines and criteria so that resources are directed to technologies and policies that reduce costs for energy ratepayers.

Energy Producers and users Coalition (EPUC), the Indicated Producers (IP) and the Western States Petroleum Association (WSPA)
EPUC/IP/WSPA urge the Commission to first conduct an inventory of current GHG efforts and level of ratepayer funding so that if the Commission authorizes CICS its efforts will not be duplicative of those already funded and on-going.

Independent Energy Producers Association (IEP)
IEP generally supports the goals of the CICS. [Opening Comments, p.1.]

Morrison & Foerster, LLP
The law firm believes that there is a need for a centralized umbrella organization to coordinate climate change research and education and supports the concept of a CICS. [Opening Comments, p. 3.] However, given the short-term focus on returns required by many venture capital funds, Morrison & Foerster believe there is a need for funding to develop technologies that have longer gestation periods. [Opening Comments, p. 4.] Morrison & Foerster recommend that the allocation of funds should be determined by the CICS Board of Directors. Based on its experience with large foundations, Morrison & Foerster suggests that the CICS budget should allocate around 12%-15% of its budget for administrative expenses. [Opening Comments, p. 7.] Other projects such as PIER, Helios, and the Energy Bioscience Institute (EBI) have a more limited focus than the CICS, and CICS can provide a coordinating role that will complement these existing efforts. Since all of these programs can operate in concert, Morrison & Forester does not recommend that ratepayer funding for other climate-related program be decreased to support CICS. [Opening Comments, p. 10.] From the law firm's perspective, the Pacific Forest and Watershed Lands Stewardship Council (The Stewardship Council) provides an example of an excellent program for fostering awareness and education of diverse communities. The Stewardship Council's Youth Investment program conducted extensive "listening sessions" with existing providers of youth outreach services to determine where its activities would do the most good. [Opening Comments, p. 11.] Morrison & Foerster also recommended that the Commission also look to the Flex Your Power program for lessons on effective outreach and utilize those lessons to reduce GHG emissions.

Natural Resources Defense Council (NRDC)
The NRDC strongly supports the proposed CICS. [Opening Comments, p. 2.] NRDC argues that there is a significant need to increase research and development (R&D) funding back to historical levels [Opening Comments, pp. 5-7], that substantial public interest research and technology deployment are necessary to achieve California's long-term global warming emissions reduction goals [Opening Comments, p. 5], and that the mission of the CICS should emphasize the workforce training and education components in the modified UC proposal [Opening Comments, pp. 16-17]. NRCD expresses concern that the potentially significant overlap with existing R&D programs, specifically the PIER program priorities, be avoided and that "[t]he investments by CICS should be in the public interest, provide benefits to billpayers, and be consistent with the

California Global Warming Solutions Act (AB 32) and other state policy goals and requirements." [Opening Comments, p. 15.]

NRDC's reply comments addressed issues of scope and the legal authority of the CPUC to establish the CICS. As part of their overall comments, NRDC has recommended that the Sustainable Energy Roadmap that would be guide the CICS's long term research and education agenda be placed in the context of an overarching statewide "Action Plan." [Opening Comments, p. 13; Reply Comments, pp. 4-5.] This would address concerns of overlap and restrict the scope of the CICS to "areas that are both relevant and beneficial to billpayers." The scope of the CICS should not include "policy formulation, development and outreach," which are the "purview of the Legislature, Governor and regulatory agencies." [Reply Comments, pp. 5-6]

In addressing the CFC contention that CPUC lacks the legal authority to establish the CICS and that even if the authority did exist, it must be exercised through an adjudicative process, NRDC contends that the purpose of the proposed CICS: 1) is "well within the scope of utility regulation, as articulated by the Legislature"; 2) would represent a "significant step toward CPUC compliance with" legislative mandates in AB 32; 3) could be funded through the legislative ratesetting process (i.e. no adjudicative hearing required); and 4) would return substantial benefits to ratepayers and therefore does not represent a "taking" by the state under the Fifth Amendment. [Reply Comments, pp. 6-7.]

PacifiCorp (U 901-E)
PacifiCorp acknowledges the general need for research and education on the climate effects of electricity and gas consumption, but questions the scope of the proposed CICS. In reply comments, they specifically ask for more details regarding the parameters under which the CICS will operate, particularly if it is a "utility customer-funded mandate." [Reply Comments, p. 3.] In keeping with the overall theme of their comments, PacifiCorp also argues for more substantial engagement of community colleges, two of which are located in the PacifiCorp service territory. In general, they are concerned that the scope and mission of the CICS be carefully tailored to deliver benefits to the ratepayers who supply the funding.

Pacific Gas and Electric (U 39 E) (PG&E)
PG&E's opening comments suggest that the focus of the CICS be limited to "pure and applied research, development and transfer of non-carbon emitting energy supply and "second generation" energy efficiency technologies in the electric and natural gas sectors, including cutting-edge "smart" technologies in the distribution and transmission of electricity and gas, as well as on strategies for mitigating the physical impacts of climate change on specific electric and gas facilities and infrastructure." [Opening Comments, p. 2] These and subsequent comments call for "[l]ess "policymaking," more applied research." [Reply Comments, p. 4.] Essentially, PG&E argues that since the CICS is funded by ratepayers, "the interests of those ratepayers should come first in the Institute's priorities." [Reply Comments, p. 4] To that goal, PG&E recommends that the research

grants exclude areas of interest outside of the immediate gas and electric sector, such as transportation. [Reply Comments, p. 6.]

Southern California Edison (U 333 E) (SCE)
SCE's primary concern, reflected in both its opening comments and reply comments, is the burden borne by IOU customers for a program that benefits all Californians. [Opening Comments, p. 2.] SCE notes that TURN, DRA, IEP, and the other utilities express similar concerns, and recommends that the Commission consider a tax or bond measure to fund the activities of the CICS. [Reply Comments, p. 4.] SCE argues that although the proposed mission is needed, "[t]he CICS Proposal currently contains no safeguards or provisions to ensure that non-duplicative research is performed." [Opening Comments, p. 5.] SCE supports PG&E's recommendation that a "formal process for coordinating research with other programs and agencies" be included. [Reply Comments, p. 5]

San Diego Gas & Electric Company (U 902 M) and *Southern California Gas Company* (U 904 G) (SDG&E/SoCalGas)
Like the other IOUs, SDG&E/SoCalGas question "why a far-reaching program with extended benefits that could stretch throughout the state and nationally would be funded solely by the IOU customers." [Opening Comments, p. 3.] This concern is echoed by their comments on the need and mission of the proposed CICS. SDG&E/SoCalGas urge the Commission that if the Institute is funded by IOU customers, the focus of the CICS should be on maximizing benefits for those customers without duplicating research and efforts underway. If the scope includes areas of broad interest to Californians, beyond the IOU customers, then they recommend that funding should also be "broadened to include other sectors, including customers of the publicly-owned utilities, the transportation sector, etc." [Opening Comments, p. 5.] By implication, SDG&E/SoCalGas argue that research and activities should not include those areas if funding only comes from the IOU ratepayers. In addition, they argue that the education programs proposed for the CICS should be similarly narrowed to match investments with benefits to the funders. So, "the focus of the CICS on education and training programs should be specific to climate change issues associated with California IOU activities, either in education or worker training, and should be something that could not otherwise be done by the educational system." [Opening Comments, p. 5.] They assert that "the utilities are in the best position to support later-stage demonstration and commercialization activities," so the universities involved with CICS should "focus primarily on early stage technologies." [Opening Comments, pp. 5-6.] In their reply comments, SDG&E/SoCalGas state their confidence that the Commission and the revised UC proposal intend to prevent duplicative research and "limit CICS program efforts to those that will benefit California utility customers, both directly and indirectly." [Reply Comments, p. 3.]

Stanford University (Stanford)
Stanford agrees that "the problem of greenhouse gases accumulating in the atmosphere is one of the fundamentally important problems of our age." [Opening Comments, p. 3.] Their comments support the revised UC proposal insofar as it creates a "true consortium

for climate solutions." [Opening Comments, p. 2.] Stanford urges that multidisciplinary solutions will be required and "[a] consortium of California colleges and universities, private and public, along with other qualifired research institutions, could effectively conduct such research and could bring the fruits of the research to implementation." [Opening Comments, pp. 3-4.] Stanford emphasizes that research should be the primary function of the institute and that the "full costs of research must be provided" to ensure high quality work. [Reply Comments, p. 2.] With that point established, Stanford describes at least four reasons to support the revised UC proposed structure for the CICS: 1) working together the colleges, universities and other research institutions can achieve more than working separately; 2) the investments made by the private universities in world-class research capabilities to create global climate change solutions could be leveraged by such a partnership with UC; 3) close coordination of funds spread across many research efforts and institutions in California is required for cost effective use of those funds; 4) UC and the private universities "will maximize the degree to which new research would be implemented through partnerships with California companies" by working together. [Opening Comments, p. 5.]

University of California (UC)
UC's opening comments revise their initial proposal, particularly regarding aspects relating to inclusion of other institutions and the governance structure. UC notes there is an "urgent need for the programs" they outline, and propose three key functions for the CICS: 1) Strategic Planning through a "Sustainable Energy Roadmap"; 2) Research and Education "directed toward practical technological and policy solutions related to energy, climate change, and quality of life issues," and "initiatives to train the next generation of researchers and professionals in areas critical to sustainability"; and 3) Dissemination and Transfer of Knowledge to be put to use for the public good. [Opening Comments, pp. 4-8.] UC notes "there is currently no coordinated effort that can provide the State with an integrated knowledge base in the priority areas need to be addressed in order to reduce greenhouse gases." [Opening Comments, p. 14.] The coordination provided by the proposed CICS, from UC's perspective, "would serve a valuable purpose by helping to clarify how existing programs relate (or could relate) to one another, and by identifying gaps in existing efforts to address important aspects of climate change." [Opening Comments, p. 30.] They further state:

> *By bringing together experts to examine what we know already, what is currently underway, and what new efforts are needed in order to achieve the State's emissions goals, the CICS will provide a coordinated focal point to aid State policymakers in understanding how to get what they need from the myriad of inter-related efforts.*

The UC revised proposal lists several specific areas for research and two cross-cutting themes, but ultimately UC "believe[s] that specific priorities and program areas will need to be decided by the Institute' leadership and Governing Board in consultation with experts and stakeholders involved in providing input on the Institute's Sustainable Energy Roadmap and annual education and research agenda." [Opening Comments, p. 34] The revised UC proposal does "anticipate the expertise of the California State

University and Community College systems, as well as UC's own University Extension programs may be especially helpful" in conducting the education, workforce training and public outreach functions of the CICS. [Opening Comments, pp. 36-37.]

University of Southern California (USC)
USC expresses support for the revised UC proposal, including the centralized hub function, the scope of research and technology development and "cultivating the next generation of scientists and researchers." [Reply Comments, p. 1.] USC states that "concerns of any duplication are alleviated with the creation of the 'roadmap'." [Reply Comments, p. 1.] As indicated in their opening comments, USC agrees that there is a need for the CICS, particularly in regards to meeting the goals of AB 32, and that central coordination of a competitive peer reviewed process would distribute project funds to the "most qualified" institutions. [Opening Comments, p. 3.] USC suggests that the proposed allocations between administrative and other functions of the CICS should be taken as a starting point, to be determined by the Governing Board, and not as fixed allocations. They further suggest that the administrative core should be "on the order of 5% of total budget, matching the central administrative costs of the National Science Foundation." [Opening Comments, p. 4.]

Organizational Structure (questions 12 & 16)

Caltech
CalTech suggests that the Commission "[S]treamline the governance structure and provide for broader representation of qualified stakeholders such that no one organization represents a majority of either the governing board, which would hire the director without regard to her/his affiliation, or advisory panels." [Opening Comments, p.1.] CalTech finds that in its revised proposal "UC has wisely reduced the number of governing and advisory panels." In addition, CalTech urges the Commission to extend the "no single entity voting majority" rule for the Governing Board that it, and others, recommend, to the Research and Education Strategic Committee. [Reply Comments, p. 2.]

CCST
CCST requests that it be asked to submit at least two nominations for the Governing Board. CCST, having advised other publicly funded research entities, recommends that the Commission explore the option of forming a Joint Powers Authority. This would, in its opinion, allow for greater administrative flexibility. [Opening Comments, pp. 4-5.]

CSU
CSU questions whether the creation of a separate stakeholder group is necessary since there will be development of subject matter expertise in various thematic subcommittees. [Opening Comments, p. 18] CSU argues that faculty and administrators of the other institutions of higher learning should be involved in the leadership committees of the CICS. [Opening Comments, p. 20.]

Community Environmental Council
The Community Environmental Council recommends that the Stakeholder and Steering Committees should be co-equals in determining the CICS priorities. [Opening Comments, p. 9.]

DRA
DRA urges the Commission to ensure that ratepayer representatives are on both the steering and stakeholder committees. [Opening Comments. p. 17.]

Environmental Defense
From Environmental Defense's perspective, the stakeholder committee should play a key role in shaping the institute's mission and annual research and policy agendas. [Opening Comments, p. 5.]

Morrison & Foerster
The law firm urges that the Commission more clearly define the role of the various committees *vis-à-vis* the Board. In addition, Morrison & Foerster recommend the following for the Board: The Board should include one to three public representatives appointed by the CPUC, one representative from the California Resources Agency, representatives of the major universities that will partner with UC, and representatives of the other major private and public stakeholder groups identified during the formation process; the Board should be limited to 12 or fewer members; the steering committee should be replaced with three specialized committees with expertise in each of the three broad areas covered by the CICS; and an external independent advisory board (or peer review board) should also be established to review the grant proposals and assist with monitoring and evaluation. [Opening Comments, pp. 9-10.]

As alternative structures, Morrison & Foerster suggests that the CPUC consider including: 1) a university institute, 2) an agency run program, 3) a separate corporation, 4) a fully independent 501(c)(3) organization, and 5) a 501(c)(4) public welfare organization. As a university institute, the CICS would be subject to the same regulatory, budget, and contracting rules as the university itself. If run as part of an agency, the institute would be subject to state contracting rules and other statutes applicable to state agencies (e.g. public meeting and disclosure laws). This state entity would have maximal flexibility in conducting research and making grants. A variation would be an entity formed as a Joint Powers Agency. [Opening Comments, pp. 13-14.]

If the Commission desires that the CICS have greater independence from state agency rules, Morrison & Foerster recommend that the CPUC could form a tax-exempt corporation created as an "integral part of the state." The state would have to have appointment and oversight power and would have to demonstrate a significant financial commitment, such as dedicated rate or fee. The IRS also requires that the assets of such a corporation be treated as state assets. This structure would also allow for significant additional funding from partner institutions or the private sector. [Opening Comments, pp. 14-15.] If CICS is established as a 501(c)(3) private foundation, Morrison & Foerster caution that that structure might limit efforts to partner with private corporations, engage

in applied research, or research that might give corporations priority to intellectual property. [Opening Comments, p. 15.] From the law firm's analysis, the primary reason the Commission might consider using a 501(c)(4) structure would be to allow the institute to engage in lobbying. [Opening Comments, p. 16.]

NRDC
NRDC's main concern with the organizational structure of the CICS is with the context in which the proposed Governing Board operates and the representation on that board and any subcommittees. NRDC, instead propose a statewide "Strategic Global Warming Solutions Research, Technology Development and Education/Workforce Development *Action Plan*, that would function above the CICS Governing Board and for which the Sustainable Energy Roadmap described in the UC Revised Proposal would be an "important and much more detailed subset," focused on emissions related to power generation and energy consumption. [Reply Comments, pp. 3-4.] The *Action Plan* would in effect subordinate the organization structure and function of the CICS to a "top" level of planning.

Furthermore, the NRDC comments stress the need for a balanced representation on the proposed Governing Board, recommending the explicit inclusion of the CEC and CARB. In addition, their comments suggest that utility and industry sector representation be balanced by qualified public interest representatives from the consumer and environmental sectors. The same appeal for a broad and balanced expert representation applies to the make-up of any sub-committees. [Reply Comments, p. 10.]

PG&E
PG&E strongly supports the inclusion of the utilities on the Governing Board and any subcommittees. [Opening Comments, p. 12.] They also express concern about dilution of the focus of the proposed Board by inclusion of parties from "outside the electricity and natural gas sector. [Reply Comments, p. 8.]

SDG&E/SoCalGas
As long as there is adequate utility and Commission representation on the Governing Board, SDG&E/SoCalGas "do not believe a stakeholder committee is necessary and is, in fact, unnecessarily bureaucratic and duplicative." [Opening Comments, p. 12.]

Stanford
Stanford believes that the "appropriate governance structure is essential to success of the consortium." [Opening Comments, p. 7.] They endorse the UC revised proposal for the make-up of the Governing Board and describe the major elements of an appropriate governance structure consistent with the UC proposal. Those elements are:
1) appointments to the Governing Board "should be made by someone or some organization(s) outside the UC system" such that no single entity or group will have a majority on the Board and an "appropriate professional and institutional mix will be included; 2) a strong director with appropriate administrative infrastructure will be put in place, not necessarily from within the UC system or faculty; 3) a strong steering (or equivalent) committee able to give guidance to the director, to provide close

coordination and cooperation with various research institutions both within and outside of the UC system; and 4) to manage the institute, a meaningful peer review process must be in place. [Opening Comments, pp. 8-9.] Stanford supports extensive use of experts on working groups and committees, but declines to specify an organizational structure at the Institute level, preferring "to leave implementing details to the oversight of the diverse Governing Board operating in consortium to achieve the Institute's objectives." [Reply Comments, p. 4.]

USC
USC asserts that the proposed steering committee "should assess and guide the Institute's programs with respect to the originality and significance of its scholarship," and its "members should be subject matter research experts." [Opening Comments, p. 6.] In contrast, USC suggests that the proposed stakeholder committee should look at practice and policy impacts, acting as an external advisory board, and should be comprised of members from government, private companies, and non-profit associations." [Opening Comments, p. 6.] In their reply comments, USC supports the streamlined governance structure in the revised UC proposal, stressing the need for representation of the diverse research expertise across the state at the committee level. [Reply Comments, p. 2.]

Oversight and Accountability (Questions 4, 10, 11 & comments on RFP process)

Caltech
CalTech suggests that the Commission should aim to "[C]reate a peer-reviewed open competition for research and education program awards, employing successful extant models as guides. Review and revise the budget plan to ensure that it provides for inclusion by all qualified potential grantees and contractors. Establish outcomes-based performance measures that serve both as an accountability tool for the institute's funders and a yardstick of progress for the institute's management." [Opening Comments, p. 1.] CalTech suggests that the Commission, and CICS give serious consideration to utilizing the experience and expertise of the CCST for review and audit purposes. [Reply Comments, p. 4.]

CCST
CCST proposes that since it is a neutral third party charged by the state to serve an oversight and accountability advisory role, that it be asked to convene an independent review of the climate solutions roadmap. CCST would convene state and national leaders in climate change research to review and provide feedback on the roadmap and its implementation. CCST states that this will help to ensure confidence among the public and the legislature. [Opening Comments, p. 3.]

CCST further proposes to manage an external biennial review, which would include a review of the public value of the programs, program planning and management practices, administrative and organizational issues, research review processes, and advisory

committee functions. CCST already performs such a function for the PIER program as the convener of the Independent Review Panel. [Opening Comments, p. 4.] CCST urges that contracting rules allow participation by all research institutions. [Opening Comments, p. 5.]

CSU
CSU believes it is essential that the CPUC have direct oversight of the CICS and should chair it. Other state agencies (e.g. CalEPA, CEC, CRA) should also have named positions on the Governing Board. CSU requests that the Chancellor of the CSU also be named to the Governing Board. [Opening Comments, p. 13.] CSU believes that recognized experts in various disciplines should be responsible for selecting proposals for funding based on scientific merit. CSU also recommends that a blue ribbon panel be convened every three years to assess the efficacy of the CICS. [Opening Comments, pp. 16-17.] Metrics for evaluating the CICS's performance could include, but are not limited to: 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. Evidence of funding leveraged by recipient institutions would also be another measure of CICS success. [Opening Comments, pp. 17-18.]

Community Environmental Council
The Community Environmental Council suggests that the CPUC could use the Procurement Review Groups as a model of involving stakeholders in oversight activities. [Opening Comments, p. 5.]

DRA
DRA requests that the Commission maintain strong oversight of programs for which it authorizes ratepayer funding to ensure that these programs are beneficial to ratepayers. [Opening Comments, pp. 12-13.] DRA is concerned that the CICS is so broad in scope that there is no guarantee that ratepayer monies will be spent in a way that benefits ratepayers. One way to do this, DRA suggests, would be to have the Institute submit biannual budget requests to the Commission, which could then reject activities not relevant to ratepayers. Another way is to include a ratepayer representative on the steering committee, which would have the ability to choose the CICS director and reject proposed activities that are not relevant to ratepayers. [Opening Comments, p. 16.]

Morrison & Foerster
Morrison & Foerster states that generally, large foundations conduct ongoing monitoring of progress of their grant programs, and that is what CICS should do. Another monitoring tool suggested by the law firm is that CICS should consider awarding larger grants in stages to ensure satisfactory progress at certain milestones. As another step, Morrison & Foerster recommends that CICS consider partnering with organizations such as the Environmental Capital Group (ECG), which provides monitoring of effectiveness of investments by CalPERS and other large institutional investors. ECG, which also provides environmental due diligence and reporting services, or Blueprint Research &

Design, Inc. could help CICS to develop and monitor its grant programs. (Opening Comments, pp. 7-8.)

NRDC
In both their opening and reply comments, NRDC stresses the need for proper oversight by the CPUC and regular, independent performance evaluations. They maintain that to ensure the "prudency of expenditures made on behalf of billpayers" the President of the Commission should serve on the proposed Governing Board, the Roadmap (long-term strategic plan) should be formally approved by the Commission, annual agendas should be approved through the Advice Letter Process, and the public should be meaningfully involved. [Opening Comments, p. 13.] NRDC suggests that an independent annual review be established at the outset "similar to the Independent Review Panel (IRP) that was formed to evaluate" the PIER program. [Opening Comments, p. 14.] Both of these measures are seen as necessary by NRDC "to provide assurance to the CPUC and billpayers that the CICS is operating effectively and providing maximum and cost-effective benefits…" [Opening Comments, p. 14.]

PG&E
Given the narrow scope that they assign to CICS functions, PG&E encourages a clear reporting and oversight process that includes an "Annual Financial Report" and an "Annual Program Report" that would itself include a list of all inventions, patents, and licensing agreements that resulted from the funded program(s)." [Opening Comments, p. 13.] The utility would also require an external review every three years, allowing for the long term nature of R&D.

SCE
SCE maintains that the Commission and all of the IOUs should be "represented at least at the Steering Committee level to help direct the UC leadership in seeking research initiatives that would be of direct benefit to their customers." [Opening Comments, p. 9.] The utility asserts that "cost effectiveness, timelines, work products and deliverables are among the performance measures that should be considered in this initiative." [Opening Comments, p. 10.]

SDG&E/SoCalGas
In their opening comments, SDG&E/SoCalGas presented a detailed description of the oversight that the Commission should provide, including a "bifurcated review and approval process" that ensured "CPUC's oversight role" but left "day to day operation of the program completely in the hands of the Executive Director and staff of each of the participating research institutions," and "biennial reports" as well as subjecting the CICS to Commission audit and review. [Opening Comments, p. 8.] In addition to formal inclusion from the Commission and a representative from the IOUs, these utilities argue that CICS should be structured so that "all final CICS Governing Board decisions are subject to the CPUC review and approval process." [Opening Comments, p. 11.]

Stanford
Stanford recommends "a biennial review of the Institute's programs to evaluate how well those programs are accomplishing stated goals." The University endorses the CCST as an appropriate and qualified entity to conduct such a review, in light of its past reviews of the PIER program. [Reply Comments, p. 3.] Stanford rejects any calls for additional outside review, indicating that the "Road Mapping" exercise will be subject to extensive scrutiny by state authorities, experts and the public, and would itself be a review and update of similar, earlier efforts at the state level. Thus, they argue that any additional review would be redundant. [Reply Comments, p. 3.]

University of California
The UC revised proposal includes the CPUC President on the Governing Board, and UC asserts that this provides the Commission with a strong oversight role. [Opening Comments, p. 17] The UC proposal also requires the Institute Director "to submit regular (at least annual) accountability reports to the Governing Board, to the CPUC, and to the public providing information about the Institute's research and education programs, progress in meeting strategic goals, and allocation of funds." [Opening Comments, p. 25.] UC continues on to say "[t]he reports can be tailored to include information that will allow the CPUC President, in his role as co-Chair, to report back to the full Commission on the Institute's work, to facilitate oversight of the use of ratepayer funds." [Opening Comments, p. 25.]

As a performance measure, UC asserts that the Roadmap itself can provide "both guidance and performance measures that can be used to ensure that funds are used efficiently to maximize ratepayer benefits," and that formal metrics can be established along the lines of a National Academy of Sciences report on the subject. [Opening Comments, p. 26.]

In addition to the above, UC proposes an outside reviewer:

> *As with other publicly funded research organizations, such as the Public Interest Energy Research (PIER) program, there will be a periodic formal, independent review of the CICS's performance. As stated in UC's initial proposal, the Governing board will oversee a regular review of program activities by internationally renowned experts unaffiliated with the Institutes. An independent review panel would review CICS from the perspective of its benefits to the State of California and its utility ratepayers. The review panel would also evaluate the CICS's performance with respect to its mission and strategic plan as set out by the Governing Board. The review panel's final report would be transmitted to the CPUC who could then use it in any CPUC decisions regarding future funding of CICS*. [Opening Comments, p. 26.]

USC
USC joins other parties in endorsing CCST as an appropriate "biennial external assessor of CICS." [Reply Comments, p. 2.]

Budget and Funding (Questions 3, 5, 6, 7 & 8)

Caltech
CalTech states that Caltech, Stanford, and USC attract $1.5 billion per year in Federal funding. This funding is based on thoroughly audited analysis of real costs, and the same model should be used by CICS. [Opening Comments, p.4.]

CSU
From CSU's perspective, the budget is relatively modest given the scope of programs proposed but is reasonable as core funding. [Opening Comments, p. 13.] CSU can help leverage funds for research related to CSU's priority research areas. [Opening Comments, p. 15.]

Community Environmental Council
CE Council recommends that the CPUC work with the Legislature to consider a joint funding mechanism whereby ratepayers and fossil fuel companies share the cost of the CICS. [Opening Comments, p. 5] CE Council argues that utility shareholders should pay their fair share given the fact that they will very likely benefit directly and indirectly from CICS activities. To the extent CICS is funded with ratepayer funds, CE Council believes that it would be appropriate to fund on a per kWh and per therm charge with an exemption for low-income ratepayers. [Opening Comments, p. 6.]

DRA
From DRA's outlook, there is insufficient information to determine if the proposed budget is reasonable under established principles of ratemaking. DRA opposes committing to a ten-year funding cycle: Current commitments to efficiency programs are on a three-year cycle; Demand response programs are on three-to-five year cycles; and Initial funding for PIER was only for four years. [Opening Comments, p. 11.] DRA suggests that the Commission consider funding the CICS through auction revenues of greenhouse gas (GHG) allowances. To the extent ratepayers do fund the CICS, DRA believes that an equal cents per kWh or therm would be an appropriate mechanism. [Opening Comments, p. 13.] DRA strongly recommends that the Institute first seek funding from corporations and individual donors before turning to ratepayer funds. Some shareholder funding might be appropriate. [Opening Comments p. 14.]

Despite broad support for CICS among the parties, DRA argues that no one has provided sufficient justification for *ratepayer* funding. [Reply Comments, p. 3.] "There is, at best, a limited connection between IOU ratepayers and the obligation to fund the wide scope of the Institute's activities." [Reply Comments, p. 4.] DRA states that other ratepayer funded programs (such as Electric Power Research Institute (EPRI)) have been dedicated to programs that are more narrowly focused on electricity-related activities. [Reply Comments, p. 5.] DRA opposes PG&E's proposal to fund the institute on an equal percent of revenue basis since this would allocate a greater share of costs to residential and small commercial customers. [Reply Comments, p. 10.]

Environmental Defense
Environmental Defense finds that a surcharge is an appropriate funding mechanism so long as ratepayers receive an adequate return on their investment. [Opening Comments, p. 4.]

Greenling
Greenlining states that utility shareholders should provide at least 70 percent of the funding for CICS. An even better solution, from Greenlining's point of view, would be to fund it through private funds or legislation. [Reply Comments, p. 14.]

IEP
IEP argues that the cumulative impact of public purpose surcharges is significant. IEP suggests that the Commission seek the participation of the municipal gas and electric customers, not just the regulated utilities. However, IEP states that the funding mechanism should exempt natural gas fired electric generators to ensure that customers of these generators are not paying the surcharge twice. [Opening Comments, p. 2.] IEP suggests that another source of funding the Commission should consider is the proceeds from auctioning of GHG allowances. IEP urges the Commission to seek funding sources that spread the burden as broadly as possible. [Opening Comments, p. 3.]

Modesto Irrigation District(MID)
MID argues that given the Energy Commission's substantial role in managing climate change research, it would be inappropriate for the CPUC to propose legislation that may conflict with or duplicate matters with the Energy Commission's purview. [Reply Comments, p. 3.] [In other words, the CPUC should not seek legislation to require POUs to contribute to CICS.]

Morrison & Foerster
The law firm approves of the proposed funding level and using a surcharge as the funding mechanism, but natural gas used for generation should be excluded. Funding for EPRI and the Gas Institute are precedents for such ratepayer funding. [Opening Comments, p. 5.] However, Morrison & Foerster argue that customers purchasing all of their electricity from a green portfolio should not be charged. They also suggest that the CPUC should sponsor legislation that would subject customers of POUs to the surcharge. [Opening Comments, p. 6.] Morrison & Foerster does not believe that is necessary or beneficial to require stockholder to bear a portion of the cost. They argue that doing so could even complicate issues related to intellectual property rights. [Opening Comments, p. 7.]

Morrison & Foerster believe that "[T]he monetary consequences of climate change dwarf the cost of this innovative proposal." And further, they believe that there is a direct and material nexus between electric customers' requirements and climate change. [Reply Comments, p. 2.] Therefore, the law firm suggests that the CPUC request that POUs voluntarily contribute funding of CICS, or alternatively, the Commission should sponsor legislation requiring them to do so. In addition, the law firm states that natural gas used for generation by POUs should be subject to the surcharge. [Reply Comments, pp. 4-5.]

Morrison & Foerster argue against USC's recommendation that the administrative budget for CICS be limited to 5% based on the model of the National Science Foundation (NSF) since the 5% limit does not account for NSF's much larger budget and the economies of scale that are possible for administrative costs. [Reply Comments, p. 6.]

NRDC
NRDC supports the proposed budget and funding mechanism as adequate and appropriate to the task, but recommends a narrowing of the scope to ensure that the costs borne by ratepayers are used to fund relevant and appropriate activities. They recommend an equal cents/kWh or cents/Therm rate. NRDC argues that even if California rates are high, energy bills are comparable or even low compared to similar states like Florida and Texas. [Reply Comments, p. 9.] Finally, they argue that ratepayer funded investments, such as the proposed CICS, provide proven returns. [Reply Comments, p. 9.]

PacifiCorp (U 901-E)
PacifiCorp maintains that if the funding for the CICS is to be provided by ratepayers, it should be paid "equally by all electricity and natural gas customers, but on a comparable "energy" basis." [Reply Comments, p. 3.] That is, the cost of the CICS should be paid on an equal cents/kWh or cents/Therm basis. They also reject the argument that utility shareholders should share in the burden of financing the CICS. [Reply Comments, pp. 1-2.]

PG&E
PG&E supports the budget and funding level, but differs from most of the commenting parties on the funding mechanism. For the portion of the CICS funding by electric ratepayers, PG&E recommends "that the Commission adopt the allocation approach used for energy efficiency (EE) and distributed generation incentive costs: "**equal percent of total revenue**." [Opening Comments, p. 6, emphasis in original.] For the gas EE program funding. [Opening Comments, p. 6.] Overall allocations among utilities and between gas and electric ratepayers would be based on the "respective test year revenue requirements for EE programs." [Opening Comments, p. 5.] Furthermore, PG&E maintains that shareholder funding should not be required. [Reply Comments, p. 11.]

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

SCE
SCE expressed concern about the initial "Indirect Costs" rate and that the program mission and scope were not defined in enough detail to determine the adequacy of the budget. [Opening Comments, pp. 6-7.] They argue, along with PG&E, that CICS, to the extent that it is funded by IOU customers at all, should be funded through the Public Purpose Programs charge, as is the case for EE and low-income programs. [Opening Comments, pp. 7-8.] SCE encourages additional funding and suggests consideration of "funding the CICS entirely by donations from the public or private sector, or from a

broadly-based tax." [Opening Comments, p. 8.] They oppose any requirement for IOU shareholders to bear some portion of the funding for the CICS. [Reply Comments, p. 6.]

SDG&E/SoCalGas
SDG&E/SoCalGas make several points about the budget that relate to the proposed scope, as discussed above in regards to need and mission. In their opening comments they are concerned that the proposal lacks detail enough to determine if the budget is adequate, imposes all the costs on IOU customers while providing benefits to all Californians, and lacks a process to reduce duplication and maximize benefits from CICS research and education activities. [Opening Comments, pp. 7-10.] The UC revised proposal alleviated some of their concerns. [Reply Comments, p. 3.] They do assert, as the other IOUs do, that costs should be distributed as in other Public Purpose Programs, rather than on a strictly "equal cents per kWh or therm" basis. [Opening Comments, p. 9.] Finally, they also agree with the other IOUs that their shareholders should not be compelled to cover any of those costs. [Opening Comments, p. 10.]

Southern California Generation Coalition
SCGC recommends 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. [Opening Comments, p. 1.] If the Commission recovers costs from the base rate of the gas utilities, SCGC argues that the gas-fired electricity generators should be explicitly exempted. [Opening Comments, p. 1] They cite the precedent established by the Legislature in creating the natural gas public surcharge, the funding of the California Solar Initiative (CSI) and the Solar Water Heating and Efficiency Act of 2007. [Opening Comments, p. 4.] 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 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 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." [Opening Comments, p. 5.]

The Utility Reform Network
TURN asserts that the scope of the CICS proposal is broad enough that it should be pursued through legislative action and that public funding should be provided through taxes, rather than enacted by the CPUC and funded by ratepayers. [Opening Comments, pp. 2-3.] They are concerned that substantial portions of the state "may be exempted from some or all of the cost burden, since municipal utilities would not be affected." [Opening Comments, p. 3.] Californian IOU customers, TURN asserts, already face high rates as a result of funding multiple programs to reduce GHG emissions. [Opening Comments, p. 4.] Rather than overburdening ratepayers, TURN encourages the Commission to embrace " 'rate offsets' – like a 'carbon offset,' [that] would be a corresponding reduction in rates that mitigates, if not renders neutral, any upward rate pressure from GHG initiatives such as CICS." [Opening Comments, p. 5.] "Even better," they suggest, "such offsets may be achieved by eliminating utility expenditures of programs that undermine this new initiative to reduce GHG emissions." [Opening

Comments, p. 5.] TURN also believes that utility shareholders should bear a portion of the cost of funding the CICS. [Opening Comments, p. 7.] If costs are to be recovered from ratepayers, TURN asserts it should be on an equal cents per unit basis, and that gas for electricity generation is exempted to avoid double-charging electric ratepayers. [Opening Comments, p. 9.]

USC
USC suggests that funding levels be adjusted for inflation, "which would place the total 10 year budget on the order of $700 million." They encourage matching funds and note the leveraging of "investments that have been made by individual universities to establish research and educational programs in climate science, environmental science, and energy, as has been done at USC." [Opening Comments, p. 4.] They support "total cost" funding of research activities in order for the CICS to be successful in attracting the top research and educational talent from around California." [Reply Comments, p. 2.]

Intellectual Property (Question 18)

Caltech
From CalTech's point of view, "[T]he addition of a new layer of regulation on this process [the Bayh-Dole Act (B-D ACT)] would create significant, sometimes insurmountable, disincentives for the robust research partnerships that redound so greatly to California's benefit at present." [Opening Comments, pp. 6-7.]

CCST
CCST recommends "that to the fullest extent possible, the state's intellectual property (IP) policies should reflect the federal B-D Act, and that royalty income earned by universities from profitable technologies … be reinvested in ongoing research." [Opening Comments, p. 6.]

CSU
Since the benefits of the CICS will be largely non-financial, CSU suggests that the B-D Act be used as the basis for any policies related to revenue sharing from profitable technologies. CSU suggests that working out these policies needs to be done by the Governing Board before funding any research. CSU also states that ratepayers and stockholders should reap some rewards for their investments, comparable to the universities and individually funded researchers. [Opening Comments, p. 22.]

Community Environmental Council
If profitable technologies result from CICS, CE Council believes that ratepayers should be reimbursed up to the full amount of ratepayer funding. [Opening Comments, p. 12.]

DRA
DRA agrees that ratepayers should benefit from profitable technologies or patents. [Opening Comments, p. 19.] DRA states 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 B-D Act. Section 203 of B-D Act provides for "march-in" rights by the funding agency. DRA refers to other funded programs as models for CICS, such as The California Institute for Regenerative Medicine, that specifically provides for revenue sharing in its governing regulations and requires grantee organizations to pay the State 25 percent of net revenues above a threshold amount and PIER's standard agreement with UC, that requires royalty payments of 10 percent of net revenues to the CEC. [Reply Comments, pp. 8-9.]

Morrison & Foerster
If the CICS does not remain in the UC system, Morrison & Foerster recommends that the CICS establish a technology transfer office to protect and commercialize CICS-funded technologies and IP. [Opening Comments, p. 12.]

NRDC
NRDC supports comments suggesting that IOU ratepayers should receive financial benefits from the investments made by the CICS, but declines to specify how that should be accomplished.

PG&E
PG&E requests that a "clear path" provide benefits for electric and gas utility customers from their investment in the CICS 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." [OC, p. 2.] PG&E cites the University of California's contract with British Petroleum creating the Energy Biosciences Institute as a model that should be considered for the CICS. [RC, p. 5.]

SCE
"Like PG&E, SCE continues to maintain that, to the extent ratepayers fund the Institute, they should see a "return" on their investment and receive any direct benefits resulting from the Institute's research. SCE proposes that once the details of the Institute are defined, including how the Institute will be funded, the Commission should revisit the issue of how intellectual property resulting form the Institute should be treated." [RC, p. 6.]

SDG&E/SoCalGas
SDG&E/SoCalGas recognize the need "to maintain a balance between the interests of research institutions and the larger public interest," but assert that the CICS Board must "take the necessary steps to preserve IP rights for the IOU customers by adopting a reasonable framework for the effective identification, protection, management and commercialization of the invention(s)." [OC, pp. 20-21.] Furthermore, they suggest a secondary aim of the Board "should be to create additional incentive for research 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. [OC, p. 21.] 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. [OC, p. 21.]

Stanford
Stanford "strongly recommends that the practices of the CICS be fully compliant 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 federal funding and would thus significantly reduce the effectiveness of the Institute." [OC, p. 11] Furthermore, "[t]he transfer of the fruits of basic research projects into the stream of commerce for efficient public use is a complicated process," and "[t]here is a great deal of experience with the treatment of intellectually [sic] property under federal research grants. [RC, p. 4.]

USC
USC urges that technology transfer "be a decentralized activity assumed by each participating institution to accelerate the impact of CICS' research." [RC, p. 2.] They reiterate their opening comments and those of the UC, Stanford, Caltech, and the CCST that they "strongly support the federal intellectual property sharing arrangement set forth in the Bayh-Dole Act." [RC, p. 2.]

Miscellaneous

AReM
AReM's reply comments are basically a rebuttal to TURN's comments related to direct access and their assertion that restoration of direct access in incompatible with reducing GHG emissions.

Consumer Federation of California
CFC argues that the Commission does not have the authority to "levy a tax" through utility bills. (Cites *Pacific Telephone & Telegraph Co. v. PUC* (1965) 62 Cal.2d 634, 668) The Commission's authority to create new charges is circumscribed by Pub. Util. Code sections 729 and 730. From CFC's perspective, any additional power exercised by the Commission must be "cognate and germane to the regulation of public utilities." [Opening Comments, p. 15.] CFC states that adjudicative hearing is required to review the costs and benefits of the CICS to California ratepayers. [Opening Comments, pp. 17-18.]

DRA
DRA questions the legal authority to establish the CICS. Typically, any change in the cost of utility service is subject to a utility application to increase rates pursuant to Pub. Util.Code sections 451 and 1701.1 among others. However, DRA argues that the benefits to ratepayers from CICS appear to be more indirect than those contemplated in other existing research programs. [Opening Comments, p. 3.] DRA believes that a

legislative solution is the best approach. In addition, UC's Proposal needs to address whether and how the Public Contract Code is implicated. [Opening Comments, p.4.]

DRA suggests that the Commission should require that all current and future departing electric and gas utility customers contribute via a non-bypassable equal cents per kWh or therm basis. The natural gas vehicle (NGV) program (D.91-07-018) is one of several precedents for such funding. The Commission should also consider whether water utility ratepayers should contribute as the Proposal notes the water industry will likely benefit from the CICS's research. [Opening Comments, p. 7.]

DRA requests that the University submit a detailed, final draft of the proposal to the Commission and service list to be presented in one document and included in the record of this proceeding. The Commission should subsequently convene a workshop. [Reply Comments, p. 2.] DRA does not agree that evidentiary hearings are the appropriate vehicle for addressing the issues in this proceeding but strongly believes a public workshop is necessary.

Greenlining
Greenling is concerned that UC is insufficiently diverse to represent and reach out to *all* Californians. Therefore, Greenling argues that UC should not be rewarded with $600 million of ratepayer funds given its poor performance in attracting a diverse pool of students and faculty that represents California's underserved communities. [Opening Comments, p. 10.] Greenlining requests evidentiary hearings. [Opening Comments, pp. 13-14.] Greenling believes that CICS would serve a unique role if it focuses its efforts on the impact on and inclusion of California's diverse communities in the study of climate change. [Reply Comments, p. 13.]

Morrison & Foerster
Morrison & Foerster contend that the cases cited by CFC in support of their contention that the CPUC does not have the legal authority to fund CICS do not apply. [Reply Comments, p. 4.]

SDG&E/SoCalGas
SDG&E/SoCalGas respond to DRA's assertion that the UC proposal involves a "broad range of activities that are only indirectly related to utility service" and argue that the assertion is not supported by the record. [Reply Comments, pp. 2-3.]

CalTech
CalTech states that any arbitrary capping of full costs may effectively preclude some of the state's most outstanding researchers from participating. Pressure to increase cost-sharing by the research institutions could lead to slowdown in investment for research and research infrastructure. [Reply Comments, pp. 5-6.]

(END OF ATTACHMENT D)