
Climate Change Research Program

**FY 2017-2018
Research Investment Plan**



**CALIFORNIA STRATEGIC
GROWTH COUNCIL**

January 29, 2018

Program information can be accessed at:
<http://sgc.ca.gov/programs/climate-research/>

To sign up to receive notices, updates, and information regarding the Climate Change Research Program (and other SGC grant programs and initiatives), visit the Strategic Growth Council (SGC) website and click on the "Sign Up for Updates" icon at: <http://sgc.ca.gov>.

To receive a hardcopy of this Plan, please contact the SGC at research@sgc.ca.gov or (916) 327-5362.

Research Investment Plan: Climate Change Research Program

The Strategic Growth Council (SGC) approved the fiscal year 2017-18 Research Investment Plan for the Climate Change Research Program on January 29, 2018. The SGC will release the program's grant solicitation and host a series of technical workshops for eligible applicants during the month of February 2018. Additional information about the solicitation will be available in February on the SGC's website at:

<http://sgc.ca.gov/programs/climate-research/>

For additional information about the Climate Change Research Program, contact us at:

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The California Strategic Growth Council brings together State agencies and departments to coordinate activities that support sustainable communities, emphasizing strong economies, social equity and environmental stewardship.

CONTENTS

- I. INTRODUCTION1**
 - Background..... 1
- II. PROGRAM GOALS2**
- III. SGC RESEARCH PRIORITIES.....3**
 - A. Research Priority 1: Supporting and Protecting Vulnerable Communities from the Impacts of Climate Change.....4
 - B. Research Priority 2: Accelerating and Supporting Transitions to Climate Smart Communities4
 - C. Research Priority 3: Integrating Land Use, Conservation, and Management into California Climate Change Programs5
 - D. Research Priority 4: Increasing Data Accessibility and Planning Support for State, Local, and Regional Climate Change Planning.....5
 - E. Research Priority 5: Low-GHG Transformative Technology Development and Deployment 5
- IV. SGC RESEARCH PRIORITIES – 2018 RESEARCH INVESTMENT AREAS6**
 - A. Supporting and Protecting Vulnerable Communities from the Impacts of Climate Change.....6
 - B. Accelerating and Supporting Transitions to Climate Smart Communities6
 - C. Integrating Land Use, Conservation, and Management into California Climate Change Programs7
 - D. Increasing Data Accessibility and Planning Support for State, Local, and Regional Climate Change Planning.....7
- V. PROGRAM STRUCTURE8**
 - A. Research Project Grants8
 - B. Research Partnership Grants.....8
 - C. Partnerships.....9
- VI. PROGRAM ADMINISTRATION AND APPLICATION INSTRUCTIONS9**
 - A. Threshold Requirements9
 - B. Eligible Applicants9
 - C. Indirect Cost Rate.....9
 - D. Program Timeline10
 - E. Application Instructions10
 - F. Public Access to SGC Funded Research.....10
 - G. Administrative and Grant Agreement Requirements11
 - H. Reporting, Review and Performance.....11
- VII. PROPOSAL REVIEW AND SELECTION PROCESS.....11**
 - A. Merit Review of Proposed Research12
 - B. Programmatic Review of Proposed Research.....13
 - C. Research Project Recommendations and Awards14

I. INTRODUCTION

BACKGROUND

Research has been an integral element of California's climate change strategy for the past two decades. The State's research investments have provided valuable information on current and projected impacts from a changing climate, the design and effectiveness of climate change policies, and technological change. The Strategic Growth Council (SGC) Climate Change Research Program extends and augments this legacy of investment.

In 2017, the Legislature passed Assembly Bill (AB) 109, which created a climate change research program within the SGC. The legislation allocates \$11 million in Greenhouse Gas Reduction Fund revenues to the SGC to develop a research program to support "research on reducing carbon emissions, including clean energy, adaptation, and resiliency, with an emphasis on California."

AB 109¹ guides the development of the SGC Climate Change Research program, and directs that this Program will:

- Be guided by a Research Investment Plan that outlines research needs. The Research Investment Plan will be developed prior to awarding grants;
- Award grants on a competitive basis; and
- Be open to eligible institutions, including the University of California, California State University, federally-funded national laboratories, and private, non-profit colleges and universities.

This document is the Research Investment Plan that will guide the development and implementation of the research program for 2018 and, if funding is available, provide a foundation for future rounds of investment. The document outlines program goals, research priorities, program structure, program review and award process, and other administrative items.

The AB 32 Scoping Plan establishes the framework for actions implementing greenhouse gas reduction to implement the Global Warming Solutions Act of 2008. The Scoping Plan was updated by the California Air Resources Board (CARB) in 2017, identifying the Cap-and-Trade Program as one of the strategies California will employ to reduce the greenhouse gas (GHG) emissions that cause climate change. Research conducted through this program will help put California on the path to meet its goal of reducing GHG emissions to 40 percent below 1990 levels by the year 2030, and ultimately achieving an 80 percent reduction from 1990 levels by 2050. Proceeds from the Cap-and-Trade Program, also known as California Climate Investments (CCI), facilitate comprehensive and coordinated investments throughout California that further the State's climate goals. These investments must be used to support programs that facilitate GHG emissions reduction in the State and also deliver major economic, environmental, and public health benefits for Californians, including meaningful benefits to the most disadvantaged communities. Assembly Bill 398², chaptered in 2017 and referenced in the recently adopted scoping plan, identified additional legislative priorities for appropriating California Climate Investments including, but not limited to, climate and clean energy research and climate adaptation and resiliency.

¹ Assembly Bill 109 (2017, Ting). Chapter 249, Statutes of 2017:
http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB109

² Assembly Bill 398 (2017, Garcia). Chapter 135, Statutes of 2017. [California Health and Safety Code [§38590.1](#)]:
https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201720180AB398

The Program is an opportunity to advance the SGC's vision to support healthy, vibrant, and resilient communities. The Program is designed to leverage SGC's role as an interagency body to focus on cross-cutting research investments that build community resilience, integrate land use and development considerations, and facilitate the transformation of California communities through outcome-based research. The Program will demonstrate how the State's investment can build an innovative, outcome-driven partnership between the State and the research community that will directly support achieving California's climate change goals.

II. PROGRAM GOALS

The Climate Action Team Research Working Group, a body that includes representatives of nearly all executive branch agencies, boards, departments, and offices, developed a Climate Change Research Plan in 2015.³ The 2015 Plan identified research needs and priorities for the next three to five years. The Plan was the State's first multi-agency climate change research plan, and it considered research needs in four areas: monitoring and modeling; greenhouse gas emission reduction; adaptation and resilience; and cross-cutting research needs. Following public workshops and a public comment period, the Climate Action Team approved the 2015 Plan. The intention of the 2015 Plan was to inform individual agency research programs. Therefore, it is being implemented through a number of State initiatives, including the research programs of the California Air Resources Board, California Department of Transportation, California Energy Commission, and through the Fourth California Climate Change Assessment, a cross-cutting research initiative led by the California Energy Commission, California Natural Resources Agency, and the Governor's Office of Planning and Research that will be completed in 2018.⁴

The 2015 Plan provides a strong foundation for SGC's research program. The direction provided by that plan and discussions with implementing departments on implementation progress have helped identify goals for SGC's Climate Change Research Program. These goals were also informed by discussion at the October 23, 2017 SGC Meeting.⁵ All applicants must demonstrate how a proposal is consistent with each of the seven Program Goals.

The goals of the SGC Climate Change Research Program are to leverage SGC's role as a cross-agency body to:

1. Invest in research that has a clear and demonstrated connection to the State's climate change goals, including greenhouse gas emission reduction and climate change adaptation and resilience

All research projects and partnerships will include a description of how the research will support achieving the State's climate goals. It is expected that this could be through diverse avenues, including tool development to support planning, studies to support technology adoption and deployment, or other approaches to understand and identify barriers, challenges, and opportunities for policy design, implementation, and evaluation.

2. Advance research to support low-income and disadvantaged communities, and advance equitable outcomes in the implementation of the State's climate change policies and investment

Research projects and partnerships should be designed to address and facilitate achieving climate outcomes in low-income and disadvantaged communities. This can be achieved through direct connection with communities

³ http://climatechange.ca.gov/climate_action_team/reports/CAT_research_plan_2015.pdf

⁴ CARB Research Program: <https://ww2.arb.ca.gov/our-work/programs/research-planning>

Caltrans Research Program: <http://www.dot.ca.gov/drisi/>

CEC Research Program: <http://www.energy.ca.gov/research/>

Fourth California Climate Change Assessment: <http://resources.ca.gov/climate/safeguarding/research/>

⁵ October 23, 2017 SGC Meeting Agenda and link to Video: <http://sgc.ca.gov/Public-Meetings/2017/Meeting-Materials-10232017.html>

and community-based organizations, explicit examination of replicability of projects in low-income and disadvantaged communities, or other mechanisms that demonstrate how research investments will be leveraged to support low-income and disadvantaged communities.

3. Develop a research program that augments, builds connections, and fills gaps across current State research programs

Research projects and partnerships should reflect innovative and cross-disciplinary approaches to addressing research questions and, where possible, link to or build off previous State research investments.

4. Prioritize outcome-based research linked to practical climate action

Outcome-based research will make a direct connection to enabling climate actions. This could include projects that support on-the-ground action in the community or region; directly reduce GHG emissions via technology development or deployment; or pilot projects.

5. Model meaningful engagement with the research community, community-based organizations and other stakeholders at all stages of the program to ensure relevance and utility of research process, projects, and results

Engagement should extend from the earliest stages of research, including as proposal development, research design and scoping, through accessible delivery of research findings, data, and recommendations.

6. Continue to advance and develop a common research platform to support climate change planning, policy development, and implementation across all sectors at the state, regional, and community scale

A common basis for research includes building from a shared foundation (e.g., emission scenarios and global climate models) to project future climate impacts (e.g., temperature, humidity, precipitation and hydrology, wildfire, etc.) and assumptions on land use and land cover change, carbon dynamics, population, and economic growth.

7. Leverage and complement existing research funding and policy innovations to accelerate climate change research, innovation, and policy and technology deployment

Research projects should demonstrate how they advance research supported by additional funding sources and/or build on recent accomplishments in climate change policy or planning to achieve specific outcomes.

III. SGC RESEARCH PRIORITIES

Through consultation with State agencies and other State climate change research programs, SGC has identified the following five priority research areas for investment through SGC's Climate Change Research Program. These areas were identified to complement existing State research investment programs, specifically to focus on cross-cutting research needs and to address areas not captured in current research investments.

1. Supporting and Protecting Vulnerable Communities from the Impacts of Climate Change
2. Integrating Land Use, Conservation, and Management into California's Climate Change Programs
3. Increasing Data Accessibility and Planning Support for Local and Regional Climate Change Planning
4. Accelerating and Supporting Transitions to Climate Smart Communities
5. Low-GHG Transformative Technology Development and Deployment

These areas represent a larger body of need than can be supported through a single cycle of funding, but will provide an ongoing foundation for future investment, if available. Applicants will be asked to develop an application that addresses a specific research question (Research Project Grant) or that addresses a priority research area or areas (Research Partnership Grant).

A. RESEARCH PRIORITY 1: SUPPORTING AND PROTECTING VULNERABLE COMMUNITIES FROM THE IMPACTS OF CLIMATE CHANGE

Evidence shows that climate impacts have disproportionate effects in the State's most vulnerable communities and populations.⁶ The biophysical impacts of climate change may disproportionately impact vulnerable groups, negatively impacting their health and livelihoods.⁷ More holistic adaptation requires adopting policies that allow vulnerable communities to withstand the impacts of climate change while simultaneously addressing existing inequities. Policies intended to adapt and strengthen resilience in the face of climate change also have the potential to exacerbate existing inequities and vulnerabilities if they are not designed from the outset to address, rather than further entrench these patterns. The State has committed to protecting the most vulnerable communities.⁸

Through its Climate Change Investments, the State is committed to delivering major economic, environmental, and public health benefits for Californians, including meaningful benefits to the most disadvantaged communities. In many cases, these are the same communities that are most vulnerable to changing climate conditions. However, research is needed to better understand vulnerability in the context of a changing climate and to further refine how we understand, define, and integrate climate vulnerability in State programs and investments. Research products in this area could include tool development and comparisons across existing tools and multi-attribute analysis of climate risk. Partnership with community groups should be a key component of research to address vulnerable and disadvantaged community needs for climate resilience.

B. RESEARCH PRIORITY 2: ACCELERATING AND SUPPORTING TRANSITIONS TO CLIMATE SMART COMMUNITIES

California's cities, counties, tribes, and regions are critical partners in achieving the State's climate change goals – both to reduce GHG emissions and build resilience. Adoption of clean energy technologies and investments in active transportation, transit, and zero-emission technologies must be supported at all levels of government. Increasing the development and implementation of climate-informed planning and policies at the local and regional level will be critical to the State's climate success.

Additional research is needed to understand the barriers and challenges to community transformation and its just and equitable distribution. This can include work to understand implementation of low-carbon technologies, but also uptake of alternative modes of transportation or clean energy. Furthermore, research is needed to better understand and quantify the effectiveness of some local-scale climate interventions.

⁶ Shonkoff, S.B., Morello-Frosch, R., Pastor, M., and Sadd, J. 2011, The Climate Gap: environmental health and equity implications of climate change and mitigation politics in California- A Review of the Literature. *Climatic Change*, DOI 10.1007/s10584-011-0310-7, 19p.

⁷ CDPH, Climate Change and Health Equity Program. <https://www.cdph.ca.gov/Programs/OHE/Pages/CCHEP.aspx>

⁸ Executive Order B-30-15

C. RESEARCH PRIORITY 3: INTEGRATING LAND USE, CONSERVATION, AND MANAGEMENT INTO CALIFORNIA CLIMATE CHANGE PROGRAMS

Conservation, management, and development of California's land base have important implications for the State's climate change policy. Conversion of land can lead to the loss of stored carbon, agricultural food production, and diminish ecosystem services. Resulting development can also result in an increase in emissions through driving and energy consumption. Changes on the landscape also have important implications for the ability of natural systems, infrastructure, and communities to prepare for, respond to, and recover from climate-induced changes and extreme events.

Additional research is needed to understand the relationships between natural and social systems, and to develop mechanisms that integrate and account for ecosystem services (including those from freshwater and coastal environments) in conservation, management, and development decisions and in the State's climate change programs. Research results can include tools and methodologies to assess and advance State and local planning decisions. Addressing these issues will require expertise spanning multiple disciplines, including planning, public policy, economics, ecology, agriculture, and others.

D. RESEARCH PRIORITY 4: INCREASING DATA ACCESSIBILITY AND PLANNING SUPPORT FOR STATE, LOCAL, AND REGIONAL CLIMATE CHANGE PLANNING

Cal-Adapt, the state's interactive website for exploring climate change at a local level, was developed with energy-related funds to support adaptation and planning in the electricity and natural gas sectors. However, as a publicly available, free tool, Cal-Adapt has been adopted to support resilience initiatives beyond the energy sector. For example, the 2017 update of California's General Planning Guidelines points local governments to Cal-Adapt to support a statutorily required adaptation element of general planning. Similarly, the adaptation guidance from the Governor's Office of Planning and Research directs state agencies to Cal-Adapt as a supporting resource.

Additional research is needed to broaden the scope and data available in Cal-Adapt so that it can effectively support resilience initiatives beyond the energy sector. Research products in this area will likely include tool development, including integration of community adaptive capacity with climate hazards, as well as assessments of user needs and identification of approaches for the long-term sustainability of planning support tools like Cal-Adapt or other resources for planning.

E. RESEARCH PRIORITY 5: LOW-GHG TRANSFORMATIVE TECHNOLOGY DEVELOPMENT AND DEPLOYMENT

California needs to advance the rapid deployment of low-GHG technologies to rapidly reduce GHG emissions. Research in this area will include State agencies and private sector partners to identify promising technologies or tools that would achieve significant GHG emission reductions through widespread deployment over the next two decades. The emphasis would be on transformative technologies that are envisioned as needed to achieve the 2030 and 2050 GHG reduction targets but require significant technological breakthroughs to achieve significant market penetration. Research investment will focus on technological, policy, and financial tools needed to advance technology deployment.

IV. SGC RESEARCH PRIORITIES – 2018 RESEARCH INVESTMENT AREAS

The Legislature allocated \$11 million for of the 2017-18 Budget to fund the Climate Change Research Program. To maximize the effectiveness of this initial investment, the 2018 Solicitation for the Climate Change Research Program will focus investment on the following research topics within the first four e research priority areas described in Section III. If future funds are available, additional investment areas will be identified.

In all cases, researchers are invited to develop proposals that address a given topic or topics through a thoughtfully designed research approach that integrates all relevant disciplines and research methods. The areas of inquiry are designed to provide direction to the applicant, but do not impose a given academic discipline or research methodology. Researchers are invited to:

- Address individual elements of a specific research topic,
- Focus a research project on a specific consideration that the researcher feels makes the largest contribution to advancing knowledge and action, and/or
- Address multiple topics in a given proposal, including considerations that cut across research investment areas.

A. SUPPORTING AND PROTECTING VULNERABLE COMMUNITIES FROM THE IMPACTS OF CLIMATE CHANGE

In this research area, SGC is seeking proposals to advance the State’s understanding and response to climate change vulnerability, and the design of policies and programs to ensure equitable outcomes of the State’s climate change programs.

Specific topics of interest include the following:

- What is a working definition of climate change vulnerability that integrates climate change risk, socioeconomic considerations, and other factors that contribute to vulnerability?
 - o Can this be integrated in State planning, policy, and investment decisions?
 - o How does this vary across urban and rural parts of the State?
 - o How do place-based and population-based factors contribute to climate change vulnerability?
- How are existing community climate vulnerabilities affected (positively and negatively) through state, regional, or local policy and planning decisions?
- How can communities assess, aggregate, and appropriately represent climate vulnerability when developing “hot spot” visualizations that aggregate multiple climate-related impacts?

B. ACCELERATING AND SUPPORTING TRANSITIONS TO CLIMATE SMART COMMUNITIES

In this research area, SGC is seeking proposals that examine the social and technological dimensions of creating more sustainable and resilient communities in California. Research in this area should include interdisciplinary approaches to understanding technological and societal change to meet climate change goals, including economic and sociological studies. Specific topics of interest include the following;

- What are the environmental quality, economic, and/or social implications of increased investments and adoption of low-carbon transportation technologies, including the Three Revolutions in transportation (electrification, automation, and shared mobility), active transportation, and public transportation?

- What tools are available or can be developed to measure progress toward and to achieve equitable outcomes during transitions?
- How can resilience best be integrated into planning, policy, program, and government investments to mitigate damage and enable communities to quickly recover from natural disasters?

C. INTEGRATING LAND USE, CONSERVATION, AND MANAGEMENT INTO CALIFORNIA CLIMATE CHANGE PROGRAMS

Land management, conversion, and conservation have important implications for meeting the State's climate change goals. Research in this area will examine the interconnections across development planning and the conservation and management of natural and working lands.

Specific topics of interest for the 2018 solicitation include the following:

- What strategies are available to improve the connection between SB 375 regional Sustainable Community Strategies, local planning efforts, and the conservation and/or restoration of natural and working lands?
- What are currently the biggest barriers to equitable infill development and what role can local, regional, and state agencies play in addressing those barriers?
- How does the State's need for infill development align with climate risk and hazards? How should climate change risk and community resilience be integrated into new development planning?
- What multi-attribute tools are available to account for the integrated benefits (local and downstream) of land management practices, such as forest management, agricultural food production, or watershed restoration? How can these tools be integrated into decisions, including conservation and food security investments?
- How can the State scale up and replicate specific models of land conservation and management to achieve climate change goals?

D. INCREASING DATA ACCESSIBILITY AND PLANNING SUPPORT FOR STATE, LOCAL, AND REGIONAL CLIMATE CHANGE PLANNING

Research in this area will focus on investments to support climate adaptation and resilience planning at the local and regional level, including better understanding user and stakeholder needs and the development of tools and resources to support planning.

Specific topics of interest for the 2018 solicitation include the following:

- How can Cal-Adapt be augmented to support and expand its utility beyond the energy sector and to satisfy the direction given in State and local planning guidance documents? What datasets are needed to support planning by state agencies, local governments, resource managers, special districts, or other users?
- What outreach and training modules are needed to assist local planners, natural and water resource managers, community-based organizations and others beyond the energy sector to use climate change data and projections? What datasets can be developed to further help local planners, managers, and others understand hazards in spatially explicit ways?
- How can communities assess, aggregate, and appropriately represent implications of multiple climate impacts to develop "hot spot" visualizations that aggregate multiple climate-related impacts?

V. PROGRAM STRUCTURE

To achieve the goals outlined above, the Strategic Growth Council will distribute research funding through two mechanisms.

A. RESEARCH PROJECT GRANTS

Research project grants will be awarded to individual researchers or research groups to examine a specific research topic. Results are expected at the completion of the grant. SGC staff will administer and manage grant implementation and progress, with assistance from relevant state agencies, boards, or departments.

Award amount: \$100,000 to \$1,000,000 per project (maximum of ten awards)

B. RESEARCH PARTNERSHIP GRANTS

Research Partnership Grants will be awarded to research consortia, collaboratives, centers, or institutes with a focus on a broader research priority area. The grant recipient will work in collaboration with SGC to administer and allocate funds to specific research initiatives. Research Partnership Grants provide an opportunity to develop and model collaborative research partnerships to achieve SGC's goals. The proposal should include a model for State-Academic collaboration and engagement with community-based organizations or other stakeholders in the research process.

Award amount: \$1 to \$4 million per partnership (maximum of five awards)

C. INCORPORATING PARTNERS INTO RESEARCH PROPOSALS

Developing partnerships is essential to performing research that addresses concrete needs and delivers direct benefits. There are multiple advantages to building connections between researchers and non-traditional research partners, such as expanding collective capacity communities and creating collaborative sharing of knowledge between partners – all while meeting time, inquiry and funding commitments. Strong local engagement and cross-sector partnerships are critical to reducing greenhouse gas emissions, and can serve as a model for catalyzing local and multi-sector research questions while being responsive to the anticipated needs of the partnership.

While eligible Lead Applicants are limited to the four categories identified in [Section IV.B.](#), SGC will prioritize funding research proposals that demonstrate robust, diverse, multi-stakeholder partnerships featuring key stakeholders such as community based organizers, policymakers, and others that can transform research findings into action, and can lead to ongoing collaboration beyond the duration of the grant award. Lead Applicants should propose how they intend to structure and coordinate a multi-stakeholder partnership to advise and support the research project from the proposal process through project closeout. Discussion should include the roles and responsibilities of Partners, a process for decision-making, meeting facilitation, and any pertinent legal or financial considerations. Research proposals can include Partners as sub-applicants that can be funded in the proposed research project budget.

Examples of possible non-traditional research partners include, but are not limited to:

- Community-based organizations – including civic, community, and advocacy groups
- Federal research agencies and departments – such as NOAA, USGS, etc.
- Local land use agencies, departments, and organizations
- Local health agencies, departments, and organizations
- Non-profit organizations – including conservation, environmental justice and natural resources

- Open space landowners and recreation providers
- Private sector businesses
- Regional agencies – focused on transportation, resources, and infrastructure
- Regional climate collaboratives
- Tribes

VI. PROGRAM ADMINISTRATION AND APPLICATION INSTRUCTIONS

The grant solicitation for the 2018 Climate Change Research Program will be released sometime in February 2018. SGC staff will also schedule a series of technical workshops thereafter to provide direction and assistance to potential applicants. Below is a summary describing eligibility, requirements and the process for submitting research proposals for funding. Additional details will be included in the grant solicitation.

A. THRESHOLD REQUIREMENTS

- 1) All proposals must demonstrate how the proposed research will facilitate the reduction of greenhouse gas emissions in California.
- 2) All proposals must discuss how the research will benefit low-income or disadvantaged communities.

B. ELIGIBLE APPLICANTS

The lead applicant on each proposal must be affiliated with one of the following institutions:

- University of California,
- California State University,
- Federally-funded national laboratories, and
- Private, non-profit colleges and universities located in California.

Applicants are encouraged to include partners from community-based organizations, non-profit organizations, local or tribal governments, or other institutions (see [Section V.C.](#)). Entities located outside of California and for-profit businesses can be included as sub-recipients on a grant.

C. INDIRECT COST RATE

In order to balance the need to ensure that all applicants have an opportunity to successfully compete for an award, while complying with the Cap-and-Trade Auction Proceeds Funding Guidelines⁹ the SGC has established a maximum indirect cost rate. Specifically, SGC is responsible for developing a rate that is reasonable and directly tied to the implementation of the research project. As part of program reporting, SGC must specify overhead costs for funding recipients. These costs must be reported as part of the California Climate Investments expenditure record. Please note that cost effectiveness is a [policy consideration](#) in the programmatic review process.

The Strategic Growth Council establishes a maximum indirect cost rate of 25% for the Climate Research Program. Indirect cost rates must be applied as follows:

⁹ https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/2017_draft_funding_guidelines.pdf

- The University of California and the California State University will apply SGC’s established indirect cost rate; however, proposers can apply a negotiated rate that is lower than the maximum, if an agreement to apply that rate has been reached with a SGC member agency. The UC/CSU model agreement¹⁰ will be used to execute grant awards.
- Federally Funded National Labs can use a higher rate, as negotiated with the California Department of General Services in compliance with public resources code 12500-02¹¹ or a previously established rate agreement with a State agency or department. The Department of Energy Laboratories Model Contract Language will be used to execute grant awards.
- Private Universities should apply SGC’s established 25% indirect cost rate, but may charge a negotiated rate if a rate agreement with a State agency or department is in place.

D. PROGRAM TIMELINE

All funds administered through this program must be encumbered by June 30, 2019 and closed out by June 30, 2021.

E. APPLICATION INSTRUCTIONS

The SGC will release the 2018 Grant Solicitation in February of this year. Review and selection criteria are outlined in [Section VII](#) (below). Research proposals will be required to submit the following elements as part of the grant request package:

- A. Statement of work
- B. Researcher qualifications
- C. Partnership and engagement plan
- D. Benefits of the research to low-income and disadvantaged communities

F. PUBLIC ACCESS TO SGC FUNDED RESEARCH

SGC will require all Climate Change Research Program funded research to provide free and open access to final manuscripts of scholarly articles, reports, and other products produced entirely or primarily with program funding. These and additional published materials will be required to be submitted to Integrated Climate Adaptation and Resiliency Program’s Adaptation Clearinghouse after acceptance, and no later than upon publication. Such manuscripts shall be made publicly available through the Clearinghouse by the Governor’s Office of Planning and Research one year after publication by the journal.

Additionally, proposed research budgets are encouraged to include funding for disseminating research results and findings through an open access publishing platform.

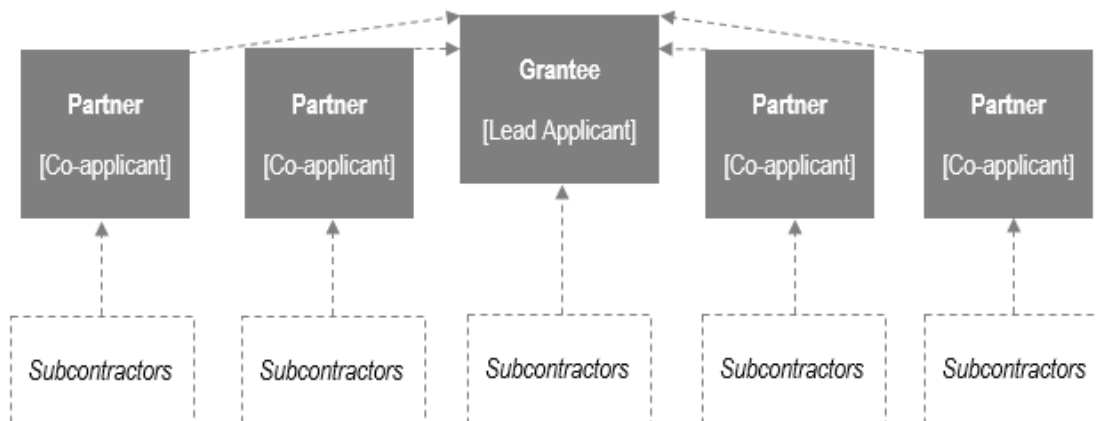
¹⁰ Assembly Bill 20 (2010, Solorio). Chapter 492, Statutes of 2010. Visit the Dept. of General Services Website for additional information: <https://www.dgs.ca.gov/ols/Resources/ModelContractLanguageUniversities.aspx>

¹¹ California Public Contract Code. The Federal Laboratory Contracting Act §12500-02. Visit the Dept. of General Services Website for additional information: <http://www.dgs.ca.gov/ols/Resources/DOEStandardLanguage.aspx>

G. ADMINISTRATIVE AND GRANT AGREEMENT REQUIREMENTS

Grant Agreements will be executed between the State of California (State) and the Lead Applicant only. The Lead Applicant is the “Grantee” and Co-applicants will be referred to as “Partners”. Diagram 2 illustrates the relationship between the Grantee and Partners.

DIAGRAM 1: Grantee/Partner Relationship



The Grantee will be responsible for compiling and submitting all invoices and reporting documents for themselves and all Partners. Upon receipt of appropriate documentation, Research funds will be paid to the Grantee, which will be responsible for dispersing payment to Partners, as approved by the State.

H. REPORTING, REVIEW AND PERFORMANCE

The Grantee will be subject to the following reporting requirements:

- a. California Air Resources Board: The Grantees must adhere to the reporting requirements outlined by CARB in the Funding Guidelines to Agencies that Administer California Climate Investments.¹² *Note: Applicants should be aware that CARB is currently updating the Funding Guidelines and there may be changes to reporting requirements in the future.*
- b. Progress Reports: The Grantee must provide regular progress reports regarding the implementation of the approved research plan. Reporting will include, but is not limited to quarterly progress updates, annual research progress reports, and a final or closeout grant project package that contains all work products.

The State has the right to review project records, conduct audits, and perform site visits during the project implementation periods. This right shall extend to all Partners and Subcontractors, and the Grantee shall include provisions ensuring such access in all contracts or subcontracts.

VII. PROPOSAL REVIEW AND SELECTION PROCESS

Proposals will be reviewed by an Advisory Committee consisting of external panelists selected for disciplinary expertise, and a State Interagency Committee consisting of representatives from state agencies and departments. Each proposal

¹² Funding Guidelines for Administering Agencies. California Air Resources Board.
<https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/fundingguidelines.htm>

is considered on its own merits without regard for institutional affiliation. Ranking is based on the project's Merit Review and Programmatic Review, described in this section.

A. MERIT REVIEW OF PROPOSED RESEARCH

Appropriate expert reviewers will review research proposals based on the criteria and process described in this section. This review process is designed to evaluate the scientific and community engagement merits of each submission. Evaluation and ratings of submissions will be conducted by an Advisory Committee, comprised of an interdisciplinary external assembly of academic and technical experts representing the physical and social sciences, including climate and environmental scientists, engineers, planning and environmental justice scholars, public health practitioners, social scientists, and/or economists who are accomplished in their respective disciplines and proficient in the technical subjects they are reviewing. Additionally, the committee will include members with expertise that advance the goals of this program concerning meaningful community engagement and equity integration.

1. Threshold Requirements

In order to be considered for an award, proposals **must comply with all of elements** described in [Section V](#), Program Structure, of this Plan. Submissions that do not comply will not advance to the merit review. Additionally, submission packages must specify how the proposed research will advance each of the Investment Plan's seven program goals as described in [Section II](#) of the Plan.

2. Evaluation Criteria

The Advisory Committee will consider each submission's merit based on the extent to which the proposal demonstrates the criteria below.

- i. **Research Merits** (Weights for each of the sub-criteria will be provided in the Grant Solicitation):
 - a) The degree to which the proposed research advances achievement towards the State's climate goals. And the degree to which the proposed activities address an important issue, problem or opportunity that advances policy design, implementation, or evaluation to meet these goals.
 - b) The degree to which the submission demonstrates that the proposed research will advance the state of the science or discipline within a research priority area through use of state-of-the-art methods. And the degree to which the submission demonstrates that the project (and its approach) is defensible and technically feasible, and uses appropriate and adequate research methods.
 - c) The degree to which new approaches to solving problems and exploiting opportunities related to climate will be employed; alternatively, the degree to which the activity will focus on important or potentially important ecosystem problems, resources and issues. And, the degree to which the submission demonstrates that the research will challenge and seek to shift current research or engineering paradigms by using innovative theoretical concepts, approaches or methodologies, instrumentation or interventions applicable to one or more fields of research.
 - d) The degree to which the proposed research will contribute to reaching the goals of the Climate Change Research Program as described in the 2018 Research Investment Plan, and the degree to which the proposed activity addresses the needs of important state, regional or community constituencies.
 - e) The degree to which users or potential users of the results of the proposed research have been brought into the planning of the activity will be brought into the execution of the activity or will be kept

apprised of progress and results. And, the degree to which the proposed research demonstrates that the project results will produce benefits to the public (such as improvements to the environment or human health) and will be disseminated to enhance scientific and technological understanding.

- f) The degree to which investigators are qualified by education, training and/or experience to execute the proposed activity. Evidence of any record of achievement with previous funding.
- ii. **Meaningful Engagement** (Weights for each of the sub-criteria will be included in the Grant Solicitation):
- a) The degree to which the submission demonstrates how the research engages with the research community, community-based organizations and other stakeholders at all stages of the program to ensure relevance and utility of research process, projects, and results. And, the extent to which the submission demonstrates that the research will address a need identified by the community of focus.
 - b) The degree to which the submission describes how it will successfully build relationships with new partners that results in opportunities for input and feedback on the project's design and approach through delivery mechanisms and communication processes used to disseminate research findings, data, and recommendations. And, the extent to which the researchers directly involve the community in their research using methods such as, Community Based Participatory Research and community monitoring/data gathering.
 - c) The degree to which the submission provides assistance and shares resources with others to advance the climate goals of engaged audiences.
 - d) The degree to which the submission establishes multi-stakeholder or multi-institutional partnerships organized into a collaborative structure that will advise and oversee the project's progress, stakeholder rapport, and application of research findings/results.

The Advisory Committee will assign two separate ratings, for Research Merits and Meaningful Engagement, to each submission (excellent, very good, good, fair, or poor), which will be combined into a cumulative, final rating for each submission. Final ratings will be used to determine which submissions undergo an internal programmatic review.

B. PROGRAMMATIC REVIEW OF PROPOSED RESEARCH

Proposals receiving final ratings of excellent or very good from the Advisory Committee will move on to a review of additional criteria, specifically the institution's past performance, project management capacity and policy considerations listed below. The purpose of this programmatic review is to ensure an integrated research program portfolio and help determine which submissions to recommend for award. In conducting the programmatic review, a State Interagency Committee will consider information provided by the applicant and may consider information from other sources, including prior and current grantors and agency files.

1. **Project Management** (sub-criteria are equally weighted):
 - i. **Management:** The degree to which the submission demonstrates that the project will be adequately managed to ensure the timely and successful achievement of objectives using appropriate project schedules and milestones. And the degree to which the submission demonstrates the proposer will adequately track and measure progress toward achieving expected results (outputs and outcomes).
 - ii. **Quality Assurance** The degree to which the submission includes an appropriate and adequate Quality Assurance Statement.

- iii. **Resources and Cost Controls:** The degree to which the submission demonstrates that the facilities, equipment, and budget are appropriate, adequate, and available. And the degree to which the submission demonstrates that well-defined and acceptable approaches, procedures, and controls are used to ensure timely and efficient expenditure of awarded grant funds.
2. **Past Performance and Reporting History.** Staff will review information related to the proposed Lead PI's "Past Performance and Reporting History under prior state agency agreements (including interagency agreements, grants and cooperative agreements) for performance initiated within the last three years (of similar in size and scope to the proposed project) in terms of:
 - i. **Level of success** in managing and completing each agreement, and (ii) history of meeting the reporting requirements under each agreement.
 - ii. **History of meeting the reporting requirements** under each agreement.
3. **Policy Considerations** (Weights for each of the sub-criteria will be included in the Grant Solicitation):
The degree to which the submission is deemed to be justified to be selected out of rank based upon one or more of the following factors, thereby awarding project that may not necessarily receive the highest merit review score.
 - i. **Availability of funding**
 - ii. **Balance and distribution of funds:**
 - Geographically
 - By type of institutions
 - By type of partners
 - By research areas
 - By project types
 - By cost effectiveness
 - iii. **Duplication of other projects** funded or considered for funding by the SGC or other State agencies
 - iv. Lead applicant's **prior award performance**
 - v. **Partnerships** and/or participation of targeted groups
 - vi. **Adequacy of information** necessary for SGC staff to make a determination and draft necessary documentation before recommendations for funding are made to the Council
 - vii. **Cost effectiveness**

C. RESEARCH PROJECT RECOMMENDATIONS AND AWARDS

A suite of recommended Climate Change Research proposals is scheduled to go before the Council in the spring of 2018 for funding approval. Final funding decisions resulting from the Proposal Review process described above will be posted ten days prior to the Council meeting. Please note that a recommendation to the Council to fund a research proposal does not constitute approval or obligation of funds.