

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

**RESOLUTION G-3495
June 26, 2014**

R E S O L U T I O N

Resolution G-3495. The California Energy Commission (“CEC” or “the CEC”) requests approval of its Fiscal Year (“FY”) 2014-2015 proposed budget.

PROPOSED OUTCOME:

- The CEC’s proposed R&D plan and budget for Fiscal Year 2014-2015 in its *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2014–15* is approved for a budget of \$24 million, pursuant to California Public Utilities Commission (“CPUC”) Decision (D.) 04-08-010.

SAFETY CONSIDERATIONS:

- This resolution approves, among other things, CEC’s proposed budget of \$2.5 million for natural gas pipeline safety research and development. Demonstration and market facilitation of pre-commercial pipeline integrity management and inspection technologies will provide field operational data and increase operator confidence. Further efforts to increase pipeline safety will include research and demonstration of technologies for right-of-way monitoring and prevention of excavation damage. CEC calculates that this research will result in increased safety and integrity of about 70 percent of the existing natural gas transmission pipeline.

ESTIMATED COST:

- \$24 million for Fiscal Year 2014-2015.
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SUMMARY

This Resolution approves the CEC's *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2014–15*. The Program was established pursuant to D. 04-08-010.

The CPUC approves the CEC's proposed \$24 million budget for Fiscal Year 2014-2015.

BACKGROUND

D. 04-08-010 (the "Decision") implemented Assembly Bill (AB) 1002, establishing a natural gas surcharge to fund gas public purpose programs, including public interest research and development (R&D).

The CPUC instituted Rulemaking 02-10-001 to implement AB 1002. In this proceeding the Commission addressed various issues related to the design and implementation of a surcharge to fund gas public purpose programs, resulting in D.04-08-010.

D. 04-08-010 established certain criteria for gas R&D projects to be approved under this program.

The Decision defines public interest gas R&D activities as those which "are directed towards developing science or technology, 1) the benefits of which accrue to California citizens and 2) are not adequately addressed by competitive or regulated entities." (p.25).

The CPUC established the following criteria for public interest gas R&D projects:

- 1) Focus on energy efficiency, renewable technologies, conservation and environmental issues,
- 2) Support State Energy policy,
- 3) Offer a reasonable probability of providing benefits to the general public, and

- 4) Consider opportunities for collaboration and co-funding opportunities with other entities.

D. 04-08-010 designated the CEC as administrator of the R&D program.

The CEC administers the Public Interest Energy Research (PIER) program and is publicly accountable, being subject to the Bagley-Keene Open Meeting Act and the Public Records Act (p.31). Projects are selected by the CEC and reviewed and approved by the CPUC.

D. 04-08-010 reserved ultimate oversight for the CPUC.

The CPUC is responsible for adopting the R&D program, and for setting the surcharge to fund the R&D program. The Decision made it clear that the CPUC has final responsibility to “approve and resolve administration, funding, project approval, or other matters, and make a final decision” (p.32). The Decision further designated the CPUC’s Energy Division to serve as this Commission’s advisor.

The CEC’s R&D program plans and budgets have been approved by the CPUC from 2005 to FY 2013-2014.

D. 04-08-010 established a zero-based budget for the Gas R&D program, starting at \$12 million for 2005, with maximum annual increases of up to \$3 million per year, subject to CPUC approval, up to \$24 million per year (p.38). Historically, each year the CEC has requested, and the CPUC has approved, the maximum budget increase over the past year. Thus the budget ceiling reached \$24 million in FY2009-2010. CPUC approved a \$24 million budget for FY2010-2011, FY2011-2012, FY2012-2013, and FY2013-2014.

The CEC has submitted its Proposed Program Plan and Funding Request for Fiscal Year 2014-2015.

In addition to providing its research plan and budget for FY2014-2015, the CEC also provided information on prior program activities and expenditures.

DISCUSSION

D. 04-08-010 provides that the Commission “will assess the reasonableness of the funding level, and the overall R&D program” after four years.

D.04-08-010 provided for CPUC review of the “reasonableness of the funding level, and the overall R&D program” after four years, i.e., sometime after FY2009-2010. The CPUC has not yet scheduled a firm timeline for such a review but is in the process of gathering information leading up to such a review.

Pending an assessment of the reasonableness of the overall R&D program, it is reasonable to keep the maximum limit for program funding at \$24 million.

In the interim, we elect to maintain the same administrator (i.e., the CEC) and maximum funding level at \$24 million per year. We approve the CEC’s proposed budget of \$24 million for FY2014-2015. This funding level has no precedential value regarding the overall program review or funding levels beyond FY2014-2015, as the CEC is required to propose a zero based budget for each fiscal year.

Consistent with D. 04-08-010, the CEC’s Public Interest Energy Research Program for Natural Gas focuses on research and development directed towards maximizing energy efficiency and renewable technologies, mitigating environmental effects of gas consumption, improving natural gas vehicle performance, and enhancing natural gas pipeline safety.

Consistent with the state’s Energy Action Plan loading order, the CEC’s proposed budget for FY2014-2015 allocates the \$24 million budget to the following research areas: Energy Efficiency (\$8.6 million), Energy Infrastructure (\$9.5 million), and Renewable Energy and Advanced Generation (\$3.5 million). The CEC also allocates \$2.4 million to program administration, including technical support. The CEC’s proposed budget allocations are delineated in the appended tables of this resolution (see Appendix).

The following is a breakdown of specific areas within the three major categories:

1. Energy Efficiency (\$8.6 million) includes:

- a. Buildings End-Use Energy Efficiency
 - i. Water Heating and Distribution
 - ii. Commercial Cooking and Food Service Equipment and Systems
 - iii. Advanced HVAC and Building Envelopes
 - iv. Integrated Natural Gas Systems to achieve Zero Net Energy or High Efficiency Buildings/Systems
 - v. Indoor Environmental Quality for Zero Net Energy or Low Energy Use Buildings
 - b. Industrial, Agriculture, and Water Efficiency
 - i. Natural Gas Efficiency R&D
 - ii. Heat Recovery
 - iii. Gas and Energy Reduction (Capture/Sequestration)
2. Energy Infrastructure (\$9.5 million) includes:
- a. Natural Gas Pipeline Integrity (Safety)
 - b. Energy-Related Environmental Research
 - i. Quantification of Fugitive Methane Emissions from Commercial Buildings in California
 - ii. Probabilistic Seasonal and Decadal Forecasting to Support Robust, Cost-Effective Management of Fluctuations in Natural Gas Supply and Demand
 - iii. Climate Readiness Options for the Natural Gas Sector: Regional Studies
 - iv. Visualizing Climate-Related Risks to the Natural Gas System Using Cal-Adapt
 - v. Assessment of Current and Potential Environmental Value of Residential Solar Water Heating in California
 - c. Natural Gas-Related Transportation
 - i. Mid-Size Engine Integration and Demonstration
 - ii. On-Road and Advanced Emission Testing for Fleets
3. Renewable Energy and Advanced Generation (\$3.5 million)
- a. Biomethane Enabling Technology Development for Remote Power Generation

- b. Clean Micro-Scale Systems for Power, Cooling, and Heating Applications
- c. Novel Systems for Small to Intermediate Combined Heat and Power
- d. Improving Cost-Effectiveness of Natural Gas Power Generation with Advanced Carbon Dioxide (CO₂) Capture Technologies

The Energy Innovations Small Grants Program is intended to complement ongoing core research for natural gas.

This program is modeled on a well-established electricity research program. It is primarily intended to fund feasibility studies, which will assess proofs of concepts, and as a new mechanism for identifying emerging and promising natural gas technologies. The program will be administered by the San Diego State University Research Foundation. The CEC is not asking for additional funding of this program for FY2014-2015 because the program is fully funded through 2017 and the CEC is reassessing the program and developing a successor program.

We applaud and encourage CEC's more efficient use of program R&D and administrative funds.

The CEC's request for administrative expenses (\$2.4 million, or 10.00% of the total proposed budget) is slightly lower than the amount requested in the FY2013-2014 budget (\$2.459 million, or 10.25% of the total budget). This is a step in the right direction and in line with historical program administration costs. We encourage the CEC to keep such expenses at 10% or less.

In Resolution G-3484, in the interest of transparency, the CPUC required the CEC to provide a detailed explanation, in its proposed budget for Fiscal Year 2014-2015, of how the CEC would transfer funds from the Gas Consumption Surcharge Fund in cases where the CPUC authorizes less than the amount requested by the CEC.

The CEC explained in its 2013 PIER NG R&D Annual Report that the CEC asks for authority from the legislature to spend the maximum possible amount of funding under the PIER NG R&D program, pending CPUC authorization. CEC

then draws the CPUC-authorized amount of funding on a pro-rated basis over four quarters starting October 1 of the fiscal year in question.

The relevant portion of the 2013 PIER Natural Gas R&D annual report (October 2013), on pages 7 to 8, is below:

The Energy Commission acknowledges that the CPUC retains the authority to approve the full amount of funds requested in the annual proposed budget plan or reduce that amount if the CPUC believes that a lesser amount is in the ratepayers' interest. If, in future years, the CPUC decides to authorize less than \$24 million, then the Energy Commission will proportionally reduce the requested transfers from the Gas Consumption Surcharge Fund by that amount. Below is the detailed process the Energy Commission would follow:

1. The Energy Commission submits a proposed budget as part of the annual state budget process in the fall of each year for consideration in the next year's Governor's budget. Included in the budget request is up to \$24 million in proposed public interest natural gas R&D funding.
2. The Energy Commission submits a proposed budget plan to the CPUC by the following March 31 of each year for the CPUC's consideration. Typically, the CPUC decides on the request by June 30.
3. The state budget is approved by the Legislature and signed by the Governor.
4. In accordance with the decisions in steps 1-3, the Energy Commission requests the CPUC to transfer the funds in four equal payments on October 1, January 1, April 1, and July 1 of the appropriate year.

If the annual natural gas R&D proposed budget plan submitted to the CPUC in March of each year is approved for the requested \$24 million, then the Energy Commission will request the transfer of \$6 million in quarterly payments on the dates identified above. If, during its review of the proposed budget plan, the CPUC determines that it does not want to fund an element of the proposed budget plan and, for example, approves only \$22 million of the \$24 million requested in the proposed budget plan, then the Energy Commission would request from the CPUC four equal payments of \$5.5 million that fiscal year instead of the maximum possible of \$6 million. Therefore, the Energy Commission will only request one-fourth of the amount approved by the CPUC and adopted in its resolution for any given year.

In the interest of transparency, Resolution G-3484 also required the CEC to give an accounting of unspent PIER Natural Gas R&D funds in each year's proposed budget.

The CEC has two years to encumber PIER Natural Gas R&D funds with projects and an additional four years before such funds expire. Beginning with the Fiscal Year 2014-2015 proposed budget, the CEC includes in its proposed budget an account, by research area, of then-current, unspent funds in the PIER Natural Gas R&D program, including encumbrances and expiration dates. The intent of this requirement is to show that the CEC has spent its cumulative authorized budgets in the areas in which the money was authorized and to provide an accounting of the status of cumulative unspent funds. This requirement shall remain in place for each fiscal year's proposed budget, until otherwise directed by the CPUC.

CEC has given such an accounting in its Fiscal Year 2014-2015 proposed budget and determined that for the history of the program through 2012 (i.e., funds that needed to be spent by June 20, 2013), \$4.492 million in unspent funds remain unencumbered (p. 17 of CEC's proposed budget). CEC reported that in its experience, it is "normal for [researchers] to complete their activities with some amount of funds being unspent," because the CEC-researcher agreements are structured so that they never exceed the approved amount of funding. *Id.*

The CEC's request to raise the ceiling for the Fiscal Year 2015-2016 cycle of the PIER Natural Gas R&D Program to \$28.492 million is rejected.

The CEC has an unspent amount of \$4.492 million from the budgets approved by the CPUC in previous program cycles. The CEC requests that the CPUC raise the budget ceiling for the Fiscal Year 2015-2016 cycle of the PIER Natural Gas R&D Program to \$28.492 million in order to allow the CEC to use the unspent money. We reject this request because D.04-08-010, the CPUC decision establishing this program, explicitly set the ceiling at \$24 million per year in funding.

We find it appropriate that CEC apply unspent funding from older budget cycles to the Fiscal Year 2015-2016 budget cycle.

We find it appropriate that the CEC apply the cumulative unspent amount of \$4.492 million from previous program cycles to CEC's funding request at the CPUC for the 2015-16 program cycle, which will result in reducing the amount the CEC will need to draw out of the program funds for the 2015-16 program cycle. As an example, if for Fiscal Year 2015-2016 CEC requests \$24 million in its proposed budget, and the CPUC authorizes \$24 million in spending, then the CEC shall draw \$19.508 million from the CPUC instead of \$24 million.

The CEC's Proposed Program Plan and Funding Request for Fiscal Year 2014-2015 is approved.

In accordance with D. 04-08-010, the annual proposed R&D program for FY2014-2015 was provided by the CEC to the Energy Division. The CEC has solicited R&D project proposal abstracts and incorporated them into the development of its plan. The Energy Division has reviewed the CEC report and found it to be submitted properly in compliance with D. 04-08-010. The basic program areas meet the criteria for public interest gas R&D projects laid out in the Decision, the CEC reasonably selected gas R&D program areas, and the CEC reasonably allocated the program's budget to the different program areas. We authorize the CEC's proposed \$24 million budget as described in its *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2014-15*.

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments. No comments were received.

FINDINGS

1. The CEC filed its Fiscal Year 2014-2015 public interest gas R&D report, per D.04-08-010.
2. The CEC's proposed R&D project areas meet the criteria set forth in D.04-08-010.
3. The CEC reasonably selected gas R&D project areas, and reasonably allocated the Fiscal Year 2014-2015 R&D budget to the different project areas.
4. The CEC's proposal to add \$4.492 million in unspent funds to the Fiscal Year 2015-2016 R&D budget and raise that budget to \$28.492 million is not authorized by D.04-08-010.
5. The CEC's proposed R&D plan and budget for Fiscal Year 2014-2015 in its *Natural Gas Research, Development, and Demonstration Program, Proposed Program Plan and Funding Request for Fiscal Year 2014-15* should be adopted for a maximum budget of \$24 million.
6. The CEC should apply the cumulative previous-cycle unspent amount of \$4.492 million to the Fiscal Year 2015-2016 PIER NG R&D budget.
7. The Commission has not yet determined the reasonableness of the overall PIER Natural Gas R&D Program or of the funding level beyond FY2014-2015.

THEREFORE IT IS ORDERED THAT:

1. The CEC remains the program administrator for the PIER Natural Gas R&D program for FY2014-2015.
2. The maximum PIER Natural Gas R&D program funding level for FY2014-2015 is \$24 million.
3. The CEC shall include in its Fiscal Year 2015-2016 proposed budget an account, by research area, of then-current unspent funds in the PIER Natural Gas R&D program, including encumbrances and expiration dates.
4. CEC's request for raising the PIER NG R&D budget ceiling to \$28.492 million for Fiscal Year 2015-2016 is denied.
5. The CEC shall apply the cumulative previous-cycle unspent amount of \$4.492 million to the Fiscal Year 2015-2016 PIER NG R&D budget.
6. The CEC's proposed R&D plan and budget for Fiscal Year 2014-2015 in its *Natural Gas Research, Development, and Demonstration Program, Proposed*

Program Plan and Funding Request for Fiscal Year 2014–15 is approved for a budget of \$24 million.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on June 26, 2014; the following Commissioners voting favorably thereon:

/s/ Paul Clanon
PAUL CLANON
Executive Director

MICHAEL R. PEEVEY
President
MICHEL PETER FLORIO
CATHERINE J.K. SANDOVAL
CARLA J. PETERMAN
MICHAEL PICKER
Commissioners

Appendix A (Table Numbering per CEC Proposed Program Plan and Funding Request for Fiscal Year 2014-2015)

Table 3: FY 2014-15 Natural Gas Research Budget Plan Summary

Program Areas	Proposed Budget
Energy Efficiency	\$8,600,000
Buildings End-Use Energy Efficiency	\$4,300,000
Industrial, Agriculture, and Water Efficiency	\$4,300,000
Renewable Energy and Advanced Generation	\$3,500,000
Energy Infrastructure	\$9,500,000
Natural Gas Pipeline Integrity	\$2,500,000
Energy-Related Environmental Research	\$3,000,000
Natural Gas-Related Transportation	\$4,000,000
Technical Support	\$140,000
Program Administration Labor	\$2,260,000
TOTAL	\$24,000,000

Source: California Energy Commission

BEGIN APPENDIX

Table 5: FY 2014-15 Natural Gas Research Budget Plan Summary – Energy Efficiency

Program Area – Energy Efficiency	Proposed Budget
Buildings End-Use Energy Efficiency Proposed Research Initiatives: <ul style="list-style-type: none"> ▪ Water Heating and Distribution ▪ Commercial Cooking and Food Service Equipment and Systems ▪ Advanced HVAC and Building Envelopes ▪ Integrated Natural Gas Systems to Achieve ZNE or High Efficiency Buildings/Systems ▪ Indoor Environmental Quality for ZNE/Low Energy Use Buildings 	\$4,300,000
Industrial, Agriculture and Water Efficiency Proposed Research Initiatives: <ul style="list-style-type: none"> ▪ Natural Gas Efficiency Research and Demonstration ▪ Heat Recovery ▪ Gas and Energy Reduction Through Capture and Sequestration 	\$4,300,000
Total Energy Efficiency	\$8,600,000

Source: California Energy Commission

Table 6: FY 2014-15 Natural Gas Research Budget Plan Summary – Renewable Energy and Advanced Generation

Program Area - Renewable Energy and Advanced Generation	Proposed Budget
<p>Proposed Research Initiatives:</p> <ul style="list-style-type: none"> ▪ Biomethane Enabling Technology Development for Remote Power Generation ▪ Clean Micro-Scale Systems for Power, Cooling, and Heating Applications ▪ Novel Systems for Small to Intermediate Combined Heat and Power ▪ Improving Cost-Effectiveness of Natural Gas Power Generation with Advanced Carbon Dioxide (CO₂) Capture Technologies 	<p>\$3,500,000</p>
<p>Total Renewable Energy and Advanced Generation</p>	<p>\$3,500,000</p>

Source: California Energy Commission

Table 7: FY 2014-15 Natural Gas Research Budget Plan Summary – Energy Infrastructure

Program Area - Energy Infrastructure	Proposed Budget
<p>Natural Gas Pipeline Integrity</p> <p>Proposed Research Initiatives:</p> <ul style="list-style-type: none"> ▪ Pipeline Network Safety and Integrity 	\$2,500,000
<p>Energy-Related Environmental Research</p> <p>Proposed Research Initiatives:</p> <ul style="list-style-type: none"> ▪ Quantification of Fugitive Methane Emissions from Commercial Buildings in California ▪ Probabilistic Seasonal and Decadal Forecasting to Support Robust, Cost-Effective Management of Fluctuations in Natural Gas Supply and Demand ▪ Climate Readiness Options for the Natural Gas Sector: Regional Studies ▪ Visualizing Climate-Related Risks to the Natural Gas System Using Cal-Adapt ▪ Assessment of Current and Potential Environmental Value of Residential Solar Water Heating in California 	\$3,000,000
<p>Natural Gas Related-Transportation</p> <p>Proposed Research Initiatives:</p> <ul style="list-style-type: none"> ▪ Mid-Size Engine Integration and Demonstration ▪ On-Road and Advanced Emission Testing for Fleets 	\$4,000,000
<p>Total Energy Infrastructure</p>	\$9,500,000

Source: California Energy Commission

END APPENDIX