



**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

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Order Instituting Rulemaking on the Commission's own motion to determine the impact on public benefits associated with the expiration of ratepayer charges pursuant to Public Utilities Code Section 399.8.

Rulemaking 11-10-003  
(Filed October 6, 2011)

**JOINT REPLY COMMENTS OF  
THE NATURAL RESOURCES DEFENSE COUNCIL,  
THE UNION OF CONCERNED SCIENTISTS,  
THE VOTE SOLAR INITIATIVE, SIERRA CLUB CALIFORNIA,  
CALIFORNIANS FOR CLEAN ENERGY AND JOBS AND  
THE NATURE CONSERVANCY ON THE ORDER INSTITUTING  
RULEMAKING**

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October 25, 2011

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THE NATURE CONSERVANCY ON THE ORDER INSTITUTING RULEMAKING**

Pursuant to Rules 1.4(a)(2)(ii) and 6.2 of the Commission's Rules of Practice and Procedure, and the *Order Instituting Rulemaking* issued October 6, 2011 ("OIR") in this proceeding, the Natural Resources Defense Council ("NRDC"), the Union of Concerned Scientists ("UCS"), The Vote Solar Initiative ("Vote Solar"), Sierra Club California ("SCC"), Californians for Clean Energy and Jobs ("CCEJ"), and The Nature Conservancy ("TNC") submit the following joint reply comments. Collectively, NRDC, UCS, Vote Solar, SCC, CCEJ and TNC shall be referred to as the "Joint Parties" in this filing.

Overall, the opening comments submitted to the California Public Utilities Commission ("Commission" or "CPUC") on the OIR demonstrated a broad range of support for continued investment in public interest research, development and demonstration and in emerging and undervalued renewable energy resources and technologies. In addition to the Joint Parties, support for continued funding came from traditional industry groups, the clean tech sector, consumer groups, environmental justice organizations, renewable energy and energy efficiency

associations, and leading research organizations.<sup>1</sup> The Joint Parties believe that this broad range of support provides the Commission with ample backing to authorize continued funding for these investments in Phase 1 and a firm foundation for further addressing the issues in Phase 2 of this proceeding.

## **I. The Commission Has Clear Authority and Responsibility to Authorize Ongoing Investment in Research, Development and Demonstration**

Southern California Edison Company (“SCE”), the California Large Energy Consumers Association and the Energy Producers and Users Coalition (“CLECA/EPUC”) and the Consumer Federation of California (“CFC”), raise the issue of whether the Commission investment in research, development and demonstration exceeds the Commission’s authority. The Joint Parties believe that collection and investment of such funds is well within the authority delegated by the State to this Commission, and indeed, that doing so is a responsibility of the Commission. As we discussed in our opening comments, statutory mandates on the CPUC create a clear need for ongoing research, development and demonstration (“RD&D”) to address the variety of challenges California electric customers face in the coming years.<sup>2</sup>

### **A. Research, development and demonstration is squarely within the broad authority delegated to this Commission by the State.**

SCE<sup>3</sup>, CFC<sup>4</sup>, CLECA/EPUC<sup>5</sup> and the California Manufacturers and Technology Association (“CMTA”)<sup>6</sup> claim the Commission does not have authority to invest in research,

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<sup>1</sup> Division of Ratepayer Advocates at p.2; Water Research Training/Pacific Forest Trust at p.2; California Farm Bureau Federation at pp.6-7; Bay Area Biosolids to Energy Coalition at p. 3; Pacific Gas and Electric at p.1; Silicon Valley Leadership Group, et.al. at p.5; Solar Alliance at p.2; California Building Industry Association at p.2; Waste Management at p.2; CEEIC, p.1; Ella Baker Center, pp. 6-7.

<sup>2</sup> “Joint Opening Comments of The Natural Resources Defense Council, The Union Of Concerned Scientists, The Vote Solar Initiative, Sierra Club California, Californians for Clean Energy and Jobs and The Nature Conservancy” October 20, 2011, (Hereinafter: “Joint Parties Opening Comments”), pp. 4-6.

<sup>3</sup> “Southern California Edison Company’s (U 338-E) Comments on Order Instituting Rulemaking 11-10-003,” October 20, 2011 (SCE Opening Comments), pp.7-8.

<sup>4</sup> “Opening Comments of the Consumer Federation of California on the Order Instituting Rulemaking on the Commission’s Own Motion to Determine the Impact on Public Benefits Associated with the Expiration of Ratepayer Charges Pursuant to the Public Utilities Code Section 399.8,” October 20, 2011 (CFC Opening Comments), p. 4.

<sup>5</sup> “Comments of the California Large Energy Consumers Association and the Energy Producers and Users Coalition,” October 20, 2011 (CLECA/EPUC Opening Comments), p. 7.

development and demonstration. In addition, CFC claims that Commission approval of research, development and demonstration investments would violate Proposition 26.<sup>7</sup> These arguments fail due to the broad statutory and constitutional authority given to the Commission to set just and reasonable rates. As the Joint Parties discussed in opening comments, the legislature has delegated *broad authority* to the Commission to fund research, development and demonstration. Indeed, such investments are necessary for the Commission to meet its responsibilities to achieve all cost effective energy efficiency, minimize societal and environmental costs of electric generation, reduce greenhouse gas emissions pursuant to AB 32, and meet the 33 percent Renewables Portfolio Standard (“RPS”).<sup>8</sup> As the Division of Ratepayer Advocates (“DRA”) notes,<sup>9</sup> Public Utility Code Section 381, which requires a collection of a non-bypassable element of the distribution service for investment in research, development and demonstration, emerging renewable energy sources and energy efficiency, has not expired.<sup>10</sup> Only the specific levels and limits of funding indicated in Public Utility Code 399.8 expire on January 1, 2012.<sup>11</sup>

Furthermore, the California Constitution and Legislature have delegated broad authority to the Commission, which California courts have routinely affirmed. The CPUC has clear power to “fix rates, establish rules...and prescribe a uniform system of accounts for all public utilities subject to its jurisdiction.”<sup>12</sup> Statutorily, the Commission is authorized to “supervise and regulate every public utility in the State and may do all things, whether specially designated in this part or in addition thereto, which are necessary and convenient in the exercise of such power and jurisdiction.”<sup>13</sup> California courts have described the CPUC as “a state agency of constitutional origin with far-reaching duties, functions and powers” whose “power to fix rates [and] establish rules” has been “liberally construed.” *San Diego Gas & Elec. Co. v. Superior Court*, 13 Cal.4th 893, 914-15 (Cal. 1996), quoting *Consumers Lobby Against Monopolies v Pub. Util. Com.*, 25 Cal.3d 891, 905 (Cal. 1979). Plainly, this Commission has been delegated broad authority by the State.

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<sup>6</sup> “Opening Comments of the California Manufacturers and Technology Association,” October 20, 2011 (CMTA Opening Comments), p. 2.

<sup>7</sup> CFC Opening Comments, p.5.

<sup>8</sup> Joint Parties Opening Comments, pp. 4-6.

<sup>9</sup> “Comments of the Division of Ratepayer Advocates,” October 20, 2011 (DRA Opening Comments) pp. 2-3.

<sup>10</sup> Pub. Util. Code § 381.

<sup>11</sup> Pub. Util. Code § 399.8.

<sup>12</sup> Cal. Const., art. XII, §§ 1, 6

<sup>13</sup> Pub. Util. Code § 701

The CPUC has the general authority to set rates for public utilities, and the specific ability to consider investments in R&D through those rates. By statute, the Commission is charged with establishing rules and rates such that the public is provided with energy services that are just and reasonable.<sup>14</sup> (And California courts afford the CPUC a great deal of deference interpreting the Public Utilities Code statutes.<sup>15</sup>)

Approving investment in RD&D is no further from Commission authority than approval of investments in power plants necessary for electric system reliability: both affect rates and have potential benefits that may be enjoyed outside the service territories of the investor-owned utilities, but both are necessary to meet the statutory and constitutional mandates of the Commission. Just as an approved power plant may improve system-wide reliability, RD&D funding for clean energy projects may lead to scientific or technological advancements with wider public benefits, but the possibility for larger public benefit should weigh in favor of investment in research, development and demonstration, not against it.

**B. There is no legislative intent to prevent the Commission from authorizing investments in research, development and demonstration.**

CFC,<sup>16</sup> CLECA/EPUC,<sup>17</sup> SCE<sup>18</sup> and CMTA<sup>19</sup> assert that the Legislature intended to restrict RD&D, based on the fact that the Legislature did not pass any bill to reauthorize Public Goods Charge (“PGC”) funding this session. The Joint Parties assert that the failure of the Legislature to reauthorize the PGC indicates no intent of the Legislature to reduce funding in perpetuity for public interest RD&D. Simply, the absence of a PGC reform bill does not provide any legislative intent that would preclude the Commission from considering adequate funding levels for research, development and demonstration.

California courts have consistently held that the failure of the Legislature to pass a particular bill *cannot* be relied upon as legislative intent. “Unpassed bills, as evidences of

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<sup>14</sup> “Every public utility shall furnish and maintain such adequate, efficient, just, and reasonable service, . . . as are necessary to promote the safety, health, comfort, and convenience of its patrons, employees, and the public. All rules made by public utility affecting or pertaining to its charges or service to the public shall be just and reasonable.” Pub. Util. Code. § 451.

<sup>15</sup> See *S. Cal. Edison, Co. v. Peevey*, 31 Cal.4th 781, 796 (2003) (“CPUC’s interpretation of the Public Utility Code ‘should not be disturbed unless it fails to bear a reasonable relation to statutory purposes and language’ . . .”).

<sup>16</sup> CFC Opening Comments, p. 4.

<sup>17</sup> CLECA/EPUC Opening Comments, pp. 3-4.

<sup>18</sup> SCE Opening Comments, p. 8.

<sup>19</sup> CMTA Opening Comments, p. 3.

legislative intent, have little value.” *People v. Mendoza*, 23 Cal.4th 896, 921, (Cal. 2000) (citing *Granberry v. Islay Investments* 9 Cal.4th 738, 746 (Cal. 1995)). “We can rarely determine from the failure of the Legislature to pass a particular bill what the intent of the Legislature is with respect to existing law.” *People v. Mendoza*, 23 Cal.4th at 921-922 (citing *Ingersoll v. Palmer* 43 Cal.3d 1321, 1349, fn. omitted (Cal. 1987)). Here, the Legislature did not pass a bill to continue RD&D funding through a particular mechanism. The absence of a bill provides insufficient evidence to determine any intent of the Legislature. Therefore, absent any affirmative statement by the Legislature, this failure to pass a bill this legislative session cannot be relied upon to infer legislative intent.

Even if the absence of a bill could be used to determine legislative intent, that intent is insufficiently clear. “[Failure to enact an amendment] provides very limited, if any, guidance even as to that intent, because the Legislature's failure to enact a proposed statutory amendment may indicate many things other than approval of a statute's judicial construction, including the pressure of other business, political considerations, or a tendency to trust the courts to correct its own errors.” *People v. Mendoza*, 23 Cal.4th at 921, (citing *Sierra Club v. San Joaquin Local Agency Formation Com.* (Cal. 1999) 21 Cal.4th 489, 506). Here, the Legislature failed to pass a bill that would have allocated a particular amount of funds for energy efficiency and clean energy-related research, development and demonstration programs through a particular mechanism, for a particular period, with many particular caveats (including reforms to possible programs). The reasons behind or implications of failing to pass such a complex bill are endless. Failure to pass the bill could imply that the funding level was not *high* enough; that the time period was too short; that the reforms to programs should be different, or absent; that details about particular programs were the cause of failure; or any other number of possibilities. In short, the legislative intent behind not passing a PGC just as likely implies that the funding level for RD&D should be increased as it implies a legislative intent to decrease these investments. Thus, even if legislative intent were bestowed upon a failed bill, that intent is insufficiently clear to draw any firm conclusions, let alone preclude this Commission from considering the continuance of funding vital research, development and demonstration programs.

## **II. The Commission has authority to select the CEC to continue to administer RD&D funds**

Pacific Gas and Electric Company (“PG&E”),<sup>20</sup> San Diego Gas and Electric Company (“SDG&E”)<sup>21</sup> and SCE<sup>22</sup> all question the Commission’s authority to select the California Energy Commission (“CEC”) to administer research, development and demonstration investments. The basis of this challenge is a citation to D.06-01-024, a Commission decision on solar programs which decided against CEC administration and oversight of solar programs. However, the Joint Parties are not convinced that this citation limits the Commission’s authority in the manner suggested. The relevant section of D.06-01-024 discusses the limits of the Commission’s ability to fully transfer oversight of programs, as distinguished from administration.

We distinguish program oversight from program administration in this regard. We use the term program oversight to mean those activities that involve formal decision-making on program elements, funding levels and ratemaking, which are the lawful obligations of the Commission or, in the case of the ERP, the CEC. Program administration involves day-to-day operations requiring little discretion and in compliance with state rules and decisions.<sup>23</sup>

This distinction is key: while the CPUC cannot delegate its authority and responsibility to determine rates, program rules, regulations and policies, it does have authority to transfer the day to day administration of a program, as it does with a variety of programs. The Commission can and should accept the input of the CEC in its oversight, planning, rule and policy making, but can and should maintain appropriate responsibility for final authority of the program, particularly in so far as ratemaking and final investment levels are concerned.

The Joint Parties encourage the Commission to look to its recent decision to select the CEC as administrator of natural gas research and development funds in D.04-08-010. In this 2004 Decision, as the Joint Parties discuss in opening comments,<sup>24</sup> the Commission selected the CEC as the best available administrator, and found no legal obstacle do doing so. The CEC

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<sup>20</sup> “Response of Pacific Gas and Electric Company (U 39 M) To Order Instituting Rulemaking,” October 20, 2011 (PG&E Opening Comments), p. 3.

<sup>21</sup> “San Diego Gas & Electric Company’s (U 902 E) Opening Comments in Response to Order Instituting Rulemaking and Preliminary Scoping Memo,” October 20, 2011 (SDG&E Opening Comments), p. 5.

<sup>22</sup> SCE Opening Comments, p. 8.

<sup>23</sup> D. 06-01-024, “Interim Order Adopting Policies and Funding For The California Solar Initiative,” January 17, 2006, p. 9.

<sup>24</sup> Joint Parties Opening Comments, pp. 25-26. Joint Parties also emphasize that the Decision and provides a significant administrative record on the benefits of CEC administration, which we hope the Commission will refer in this proceeding. *See, eg.*, Attachment 1: Testimony of Michael DeAngelis On Behalf Of The California Energy Commission Concerning The Funding And Administration Of A Natural Gas Public Interest R&D Program. R. 02-10-001, August 15, 2003.

continues to successfully act as the administrator of these funds. It is also worth noting that the University of California, which was also interested in administering the natural gas research, development and demonstration funds also supports CEC administration.<sup>25</sup>

The Commission's authority to transfer administration of RD&D programs to the CEC fits squarely within the statutory framework for CEC to manage those funds. The CEC has authority to accept funds for use in PIER and manage them under existing PIER rules and regulations.<sup>26</sup> Indeed RD&D is squarely within the statutory mandate of the CEC.<sup>27</sup> Additionally, the CEC has the necessary authority to accept funds, contract and spend funds in accordance with its mandate.<sup>28</sup> For all of these reasons, the Joint Parties strongly support ongoing CEC administration of the RD&D funds contemplated in the OIR.

### **III. The Commission should evaluate utility interests in RD&D investments and other potential sources for additional funding in Phase 2 of this proceeding, or in other relevant proceedings**

PGE,<sup>29</sup> SDG&E<sup>30</sup> and SCE<sup>31</sup> each request that they individually control Commission-approved RD&D investments, or that the utilities have greater control over CEC administered investments. In opening comments, the Joint Parties recommend the Commission maintain CEC administration of RD&D and that the utilities have a membership seat in the advisory board, along with other key state actors.<sup>32</sup> While not opposed to utility-managed RD&D, we believe that such investments should be in addition to the CEC-administered program. In addition, the Joint Parties recommend, and the DRA concurs,<sup>33</sup> that the Commission consider any utility proposals for RD&D, and its possible interaction with CEC administered RD&D in Phase 2 of this proceeding, or in individual rate cases, as appropriate.

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<sup>25</sup> "Opening Comments of The University of California on Order Instituting Rulemaking and Preliminary Scoping Memo," October 20, 2011 (UC Opening Comments), p. 9.

<sup>26</sup> Pub. Util. Code § 384..

<sup>27</sup> See: Pub. Res. Code § 25216 (c) and § 25401.

<sup>28</sup> Pub. Res. Code § 25218.

<sup>29</sup> PG&E Opening Comments, p. 3.

<sup>30</sup> SDG&E Opening Comments, p. 5.

<sup>31</sup> SCE Opening Comments, pp. 23-25.

<sup>32</sup> Joint Parties Opening Comments, pp. 25-26, 27.

<sup>33</sup> DRA Opening Comments, p. 11.

The Joint Parties also recommend that the issues surrounding publicly-owned utility (“POU”) participation in RD&D programs be addressed in Phase 2 of this proceeding. The Joint Parties believe that limits on how PGC funds might be applied in POU service territories is appropriate, but disagree with the Utility Reform Network (“TURN”) that “none of this money should be awarded to any entity located outside the service territory of a contributing IOU.”<sup>34</sup> Notably, several large research institutions, including Stanford and UCLA are located in part or entirely within a POU service territory.

TURN supports reauthorization of RD&D funds until December 2012, after which time they recommend RD&D funds come from revenue generated from greenhouse permit auctions.<sup>35</sup> As the Joint Parties stated in opening comments, greenhouse gas permit revenues may provide an opportunity for additional funding, but the Commission’s rulemaking on those revenues is still in the early phases and will not be complete for some time.<sup>36</sup> The Commission should explore potential additional funding sources and areas of interaction in Phase 2 of this proceeding, when the GHG proceeding will be further developed and there will be ample time for deliberation.

In the meantime, the Commission should authorize collection and investment in RD&D for at least five years, to prevent ongoing disruptions and allow for meaningful long-term strategic planning.

#### **IV. California’s renewable energy policies do not obviate the need to invest in emerging or undervalued renewable energy technologies.**

The Joint Parties disagree with SCE and CLECA/EPUC that the 33 percent RPS program has created a robust renewable energy market which has removed the need for any additional investments in renewable energy technologies, emerging or otherwise.<sup>37</sup> Indeed, the RPS program has substantially increased the demand for mature, commercially viable renewable energy technologies that must deliver renewable electricity in a specified timeframe. However, a guaranteed market for commercialized renewable energy technologies does not eliminate market

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<sup>34</sup> “Opening Comments of The Utility Reform Network on The Order Instituting Rulemaking,” October 20, 2011 (TURN Opening Comments), p.12.

<sup>35</sup> TURN Opening Comments, p. 14

<sup>36</sup> Joint Parties Opening Comments, pp. 10-11

<sup>37</sup> SCE Opening Comments, pp. 15-16, 20; CLECA/EPUC Opening Comments, pp.7-8.

barriers for emerging renewable energy technologies and applications that have the potential to expand the pool of RPS options and lower compliance costs. As stated in opening comments, the Joint Parties believe there is value to using billpayer funds to support a technology's transition from the laboratory to a fully commercialized application so that is mature enough to secure a long-term power-purchase agreement with a utility.

The state already recognizes the importance of investing in emerging renewable energy technologies through the emerging renewables program ("ERP") currently funded by the PGC and administered by the CEC, and the Self-Generation Incentive Program ("SGIP") which is administered by the Commission. PG&E does not oppose using future billpayer funds to support emerging renewable technologies, but concludes that such investments are already being made through the SGIP program and therefore additional PGC expenditures are unnecessary.<sup>38</sup> The Joint Parties disagree. On September 8, 2011 the Commission adopted D.11-09-015 which made several changes to SGIP. While D.11-09-015 expanded the eligible range of technologies and removed the funding limits based on project size, the program continues to focus on technologies that are primarily used to satisfy on-site generation:

While allowing export to the grid would provide flexibility in the program and motivate customers to invest in SGIP systems, we do not want to provide SGIP incentives for projects that are designed to export a substantial portion of their output to the grid. A 25% cap provides a reasonable export limit. Accordingly, we adopt a 25% export allowance.<sup>39</sup>

The Joint Parties do not believe that the Commission should automatically limit support for emerging renewable energy technologies to applications that are designed to only meet on-site electricity loads. Energy storage applications and renewable generation facilities located strategically on the distribution network can avoid costly transmission investments by exporting all or most of their electricity directly to the grid. Currently, these applications slip through the cracks of the existing programs intended to support emerging renewable energy technologies. The Joint Parties believe the Commission should re-examine the current ERP in Phase 2 of this proceeding, and in accordance with comments submitted by DRA, TURN, and SDG&E, engage in a deliberative process to identify how an emerging renewable energy program could focus on

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<sup>38</sup> PG&E Opening Comments, p.7.

<sup>39</sup> D.11-09-015, p.60.

specific resources that hold market advancement potential and currently lack programs and incentives.<sup>40</sup>

**V. Support for bioenergy technologies should focus on technologies located in California that enhance environmental performance.**

The Joint Parties agree with TURN that new ideas for funding preferred biomass technologies should be explored in 2012 or Phase 2 of this proceeding.<sup>41</sup> While the Joint Parties maintain that existing biomass generation facilities are best supported through long-term power-purchase agreements, we agree with the Watershed Research and Training Center / Pacific Forest Trust (“WRTC/PFT”) that the Commission should consider developing incentives for small-scale woody biomass facilities in California that “promote healthy, resilient forests, protect air and water quality, and provide benefits to rural communities.”<sup>42</sup> In addition, the Joint Parties wish to clarify that our initial comments regarding emerging biogas technologies refer to biogas capture, treatment, and generation facilities located in California.<sup>43</sup>

**VI. Continuation of the New Solar Homes Partnership should not be contingent upon additional analyses in this phase of the proceeding.**

Many parties that submitted opening comments on the OIR support the Joint Parties’ position that the New Solar Homes Partnership (“NSHP”) continue. These parties include the Solar Alliance, the California Building Industry Association, TURN, PG&E, the Ella Baker Center for Human Rights, Silicon Valley Leadership Group, CleanTECH San Diego, Clean Economy Network, CALSTART, TechNet, and Californians for Clean Energy and Jobs. The Joint Parties also generally support and agree with the comments of the Ella Baker Center for Human Rights regarding the importance of NSHP related programs in fostering job opportunities.

The Joint Parties disagree with SDG&E’s recommendation “that the NSHP be funded until its statutory sunset under SB1, December 31, 2016, but only if the Commission conditions

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<sup>40</sup> SDG&E Opening Comments, p.11; DRA Opening Comments, p.8; TURN Opening Comments, pp. 6-8.

<sup>41</sup> TURN Opening Comments, p.7.

<sup>42</sup> WRTC/PFT Opening Comments, p.5.

<sup>43</sup> Joint Parties Opening Comments, p.15.

such funding on ... five changes.”<sup>44</sup> In particular, the Joint Parties assert that the first change regarding net energy metering (“NEM”) policies – i.e. what SDG&E refers to as “participating customers [who] may currently avoid ... distribution-related costs,”<sup>45</sup> – is improperly raised in this proceeding. Indeed, as SDG&E itself points out, this issue is already being addressed in SDG&E’s GRC-II proceeding,<sup>46</sup> and, in any event, SDG&E’s attempt to wrongfully bootstrap the NEC issue to PGC funding should be rejected.

The Joint Parties also disagree with DRA<sup>47</sup> and SCE<sup>48</sup> regarding the cost effectiveness of the NSHP. Unlike direct incentives under other California Solar Initiative (“CSI”) programs, the NSHP funding not only covers system cost related incentives, but also assistance to new home builders and energy efficiency improvements. For this reason, an “apples to apples” cost/installed-kw comparison to other CSI installations is inappropriate. In the event the Commission determines that a cost-effectiveness study should be performed, the parameters of that study should not be addressed until Phase 2 of this OIR. Similarly, any consideration of SDG&E’s other “four” recommended changes should wait until Phase 2.

## **VII. The Commission should consider mechanisms to ensure funds are used for their intended purposes in Phase 2 of the proceeding.**

TURN raises the concern that billpayer funds intended for RD&D or investments in renewables may be transferred to the state’s General Fund.<sup>49</sup> The Joint Parties agree with the concern, but are not convinced that the approach proposed by TURN is the best solution. Therefore, the Joint Parties recommend the Commission consider in Phase 2 proposals to minimize the potential for diversion of funds to unintended purposes.

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<sup>44</sup> SDG&E Opening Comments, pp.7-8.

<sup>45</sup> *Id.*

<sup>46</sup> SDG&E Opening Comments at footnote 15.

<sup>47</sup> DRA Opening Comments, pp.10-11.

<sup>48</sup> SCE Opening Comments, pp.19-20.

<sup>49</sup> TURN Opening Comments, pp.2-3

In conclusion, the Joint Parties believe the Commission has received comments reflecting strong support from a wide range of stakeholders for continued investments in public interest RD&D and investment in emerging and undervalued renewable energy resources and technologies. Moreover, the Joint Parties believe that collection and investment of PGC funds is well within the authority delegated by the State to this Commission, and indeed, that doing so is a responsibility of the Commission. The Joint Parties thank the Commission for this opportunity to provide reply comments and look forward to future opportunities for participation.

Respectfully Submitted,

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*Director, California Climate Change*

Dated: October 25, 2011

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF  
CALIFORNIA

Order Instituting Rulemaking on the Establishment of  
a Public Purpose Program Surcharge Pursuant to  
Assembly Bill (AB) 1002.

Rulemaking 02-10-001

TESTIMONY OF MICHAEL DeANGELIS ON BEHALF OF THE  
CALIFORNIA ENERGY COMMISSION CONCERNING THE FUNDING  
AND ADMINISTRATION OF A NATURAL GAS PUBLIC INTEREST R&D  
PROGRAM



Submitted by:

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1 BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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3 Order Instituting Rulemaking on the Establishment of  
4 a Public Purpose Program Surcharge Pursuant to  
5 Assembly Bill (AB) 1002.

Rulemaking 02-10-001

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8 **TESTIMONY OF MICHAEL DeANGELIS ON BEHALF OF THE CALIFORNIA**  
9 **ENERGY COMMISSION CONCERNING THE FUNDING AND ADMINISTRATION OF**  
10 **A NATURAL GAS PUBLIC INTEREST RD&D PROGRAM**

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Pursuant to the June 3, 2003, ruling by Administrative Law Judge Bruce DeBerry  
12 of the California Public Utilities Commission (Commission), the California Energy  
13 Commission (CEC) respectfully offers the following comments and responses related to  
14 the public interest research and development (RD&D) issues identified in the ruling.

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This testimony presents a Summary and an Overview of Natural Gas Research  
17 Trends in California. The CEC's responses to the questions raised in Attachment A of  
18 the June 3 ruling begin at Section III, Discussion of Public Interest Natural Gas RD&D  
19 Issues.

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Most of the issues addressed in this testimony were also considered in 1996 by  
20 the RD&D Working Group in response to the Commission's Rulemaking (R.)94-04-031  
21 and Order Instituting Investigation (I.)94-04-032. The Working Group findings and  
22 conclusions are documented in the *Working Group Report on Public Interest RD&D*  
23 *Activities*, which was submitted to the Commission on September 6, 1996. This  
24 testimony draws heavily on information included in that report.

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1 **I. Summary and Recommendations**

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3 Current issues related to the reliability and price of natural gas combined with the  
4 drastic decline in RD&D funding both in California and nationally create a public policy  
5 crisis that needs to be addressed by the California Public Utilities Commission. RD&D  
6 can develop advanced technologies that, when commercialized, will reduce energy  
7 consumption, reduce or shift peak load, increase supplies and improve environmental  
8 quality.

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10 **A. Trends in Natural Gas Supply and Demand**

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12 Over the past decade, natural gas use for the generation of electricity has grown  
13 significantly nationwide, and especially in California, where stringent environmental  
14 requirements have virtually precluded the use of other fossil fuels. This increase in the  
15 use of gas for power generation has, at times, strained the gas industry's ability to  
16 deliver gas and has changed the pattern of gas demand from a winter peak to both a  
17 winter peak and a secondary summer peak. The gas industry has traditionally filled  
18 storage reservoirs during the low summer demand period to augment supplies during  
19 the winter peak periods. However, the development of the secondary summer peak has  
20 hampered the industry's ability to fill storage during the summer and has caused higher  
21 summer prices than before, raising the costs of stored gas. The increase in gas use for  
22 power generation in California is expected to continue through the next decade.

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1           **B. Shrinking National, State, and Investor-Owned Gas Utility RD&D**  
2           **Budgets**

3           During the same period when the demand for gas was growing and supplies  
4 growing tighter, public interest RD&D programs related to natural gas were shrinking at  
5 the national, state, and California gas utility levels. At the national level, the federal  
6 Department of Energy (DOE) natural gas RD&D program budget was reduced from  
7 about \$125 million per year in the mid 1990s to less than \$50 million per year today.  
8 The research program at the Gas Research Institute (GRI, now the Gas Technology  
9 Institute), funded by a surcharge on interstate gas pipeline deliveries of natural gas, had  
10 a budget of over \$200 million per year in the early 1990s that has declined to \$60 million  
11 per year today. The GRI research program will be eliminated after 2004. Over half of  
12 the research undertaken by GRI is estimated to have been public interest research.  
13 GRI funding costs were passed on to local distribution companies by pipelines in the  
14 form of a surcharge on the pipeline rates. The California investor-owned utilities (IOUs)  
15 provided over \$25 million per year for GRI research in the mid 1990s through this  
16 pipeline rate surcharge, approximately \$14 million of which was for public interest  
17 research. These payments from California IOUs will go to zero in 2005 as GRI closes  
18 its doors. In total, the declines in funding for gas RD&D at DOE and GRI during the  
19 1990s amount to nearly \$160 million per year for public interest research. The benefits  
20 of that research have been lost to California at a time when research is most needed to  
21 address the natural gas problems discussed above.

22           Funding for internal public interest research by California IOUs has also declined  
23 significantly over the past decade, from an estimated \$15 million per year in the early  
24 1990s to about \$1.7 million in 2003.

25           Funding for natural gas efficiency programs in California has also declined during  
26 the 1990s, from approximately \$120 million per year in the early 1990s to about \$40  
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1 million per year today. These programs are designed to increase the efficiency of gas  
2 use and reduce the demand for gas in California.

3  
4 **C. Recommended Level of Funding for a Public Interest Natural Gas**  
5 **Research Program in California**

6 Substantial public benefits exceeding costs will result from a well-funded RD&D  
7 program, including improved energy efficiency, reduced or shifted peak loads, increased  
8 supplies and improved environmental quality. We recommend an annual budget of \$26  
9 million per year for gas public interest RD&D budget for California. Three different  
10 methods were used to estimate an appropriate level of funding for a public interest  
11 RD&D program for natural gas for California. (See comments on funding level methods  
12 in the Appendix B.) First, a socially desirable level of public interest research has been  
13 estimated to be about one per cent of gas utility revenues by the National Association of  
14 Regulatory Commissions as reported in by the RD&D Working Group<sup>1</sup>. Applied to the  
15 revenues of California gas IOUs, this approach yields an annual funding level of about  
16 \$30 million. Second, assuming that a reasonable target for a public interest research  
17 budget is the sum of early 1990s internal public interest RD&D funding by the California  
18 gas IOUs plus the utilities' payments to GRI for public interest RD&D, an estimate of  
19 \$28 million per year is obtained. Third, assuming that the gas public interest RD&D  
20 budget should be the same percentage of gas utility operating revenues as the  
21 percentage of PIER electric public interest funding compared to electric utility revenues,  
22 we obtain a budget target of \$20 million per year for a gas public interest budget. The  
23 average of the three target budget estimates is \$26 million per year, our recommended  
24 budget for the gas public interest RD&D program.

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27 <sup>1</sup> Working Group Report on Public Interest RD&D Activities, California Energy Commission submission to  
28 the California Public Utilities Commission as part of Rulemakings R.94-04-031 and I.94-04-032,  
September 6, 1996.

1           **D. Recommended Administrator for California Gas Public Interest RD&D**  
2           **Program**

3           We recommend that the California Energy Commission be named the  
4 Administrator of the public interest RD&D program for natural gas in California. The  
5 CEC has a proven track record in the administration of the current PIER program for  
6 electricity. An evaluation of the PIER program showed that, on the basis of projected  
7 sales of PIER RD&D products just beginning to enter the market, that the program will  
8 generate approximately two to five dollars in ratepayer benefits for every dollar spent.<sup>2</sup>  
9 Further, the CEC would be an efficient administrator for the gas program by using the  
10 existing PIER program management infrastructure and systems, thus keeping overhead  
11 costs to a minimum. Although we have made no dollar estimate of the savings in  
12 overhead costs from using the existing PIER management infrastructure and systems  
13 for a new gas program as well, we note particularly that project management staff,  
14 contract negotiators and administrators, human resources, auditing, and technology  
15 transfer functions could handle the added load of a gas research program with modest  
16 increases in staff. The staff increases required would be much smaller than would be  
17 case if these capabilities had to be built from scratch in another organization. Public  
18 interests and not competitive pressure between gas and electricity industries will be  
19 used by the CEC for program funding decisions. The management of both the electricity  
20 and gas public interest RD&D programs by the CEC also would facilitate the integration  
21 of research programs that benefit both electricity and gas ratepayers and minimize the  
22 duplication of research. Finally, management of the gas program by the CEC would  
23 ensure that the research program is closely linked to state energy policies and that  
24 public processes are used to plan, solicit, conduct, and evaluate public interest energy  
25 research in California.

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28 <sup>2</sup> *Evaluation of the Benefits to California Electric Ratepayers From the Public Interest Energy Research (PIER) Program, 1998-2002*, California Energy Commission, 500-03-024F, May, 2003.

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2 **E. Recommended Increase in Funding of Regulated Research by California**  
3 **Gas Investor-Owned Utilities**

4 Although regulated research is beyond the scope of this proceeding, the  
5 observations and arguments that apply to public interest RD&D apply equally to  
6 regulated RD&D. We recommend that the Commission encourage the gas utilities to  
7 rebuild their regulated RD&D programs to at least early 1990s levels using the  
8 traditional utility ratemaking process.  
9

10 **II. Overview of Natural Gas Research Trends in California**

11  
12 **A. Natural Gas Research Trends Nationally and California**  
13

14 Gas RD&D has decreased substantially over the past decade nationally. Figure  
15 1 shows a decline from about \$125 million annually for DOE in the mid 1990s to about  
16 \$25-50 million today for gas research in the DOE Fossil Energy Program. Gas research  
17 performed by the Gas Research Institute (GRI) has also decreased from about \$250  
18 million in the early 1990s to \$60 million today. Furthermore, the GRI budget will go to  
19 zero in 2005, when its operation will cease. As shown in the Figure 2, more than half of  
20 the GRI budget funded public interest projects (about \$150 million in 1991), and the  
21 remainder funded projects related to the operation of the gas industry and to increasing  
22 gas markets. Virtually all of the DOE and GRI research results were available for  
23 application in California. California IOUs funded approximately \$25 million per year of  
24 the GRI budget in the mid 90s of which about \$14 million reflected public interest  
25 research. This amount has decreased to about \$5 million per year as shown in Figure  
26 3. In addition California's utilities funding of public interest projects at the Gas  
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1 Technology Institute, GRI's successor, is expected to be reserved only for regulated  
2 projects after 2005.

3 Funding of internally-performed RD&D and contracted RD&D (separate from  
4 payments to GRI) by California investor-owned gas utilities has also decreased over the  
5 past decade. Figure 4 shows the decline in total RD&D funding (electricity and gas) for  
6 the three California investor-owned gas utilities. Also shown in the figure is a CEC  
7 estimate of the gas-related public interest R&D funding for the three utilities over the  
8 period 1991-2000 and the total funding for gas public interest for 2001 and 2002 as  
9 reported to the CEC by the three utilities. The funding gas-related public interest RD&D  
10 by the IOUs for the years 2001 and 2002 is approximately \$600,000 per year, rising to  
11 about \$1.7 million in 2003 (not shown in the figure). In constant dollar terms, the  
12 combined decline in funding of public interest RD&D for the three utilities has been  
13 about \$13 million, from an estimated average of about \$15 million in the 1991-94 period  
14 to about \$1.7 million in 2003.

15 DOE's electricity research expenditures have grown at the same time that gas  
16 expenditures have fallen. Research expenditures at EPRI have decreased during the  
17 past decade, but not nearly as precipitously as have those for research at GRI.

18 California also has programs dedicated to deploying projects to increase end-  
19 use efficiency. Funding for the gas efficiency public benefit program, shown in Figure 5,  
20 has decreased from about \$120 million per year in the early 90s to about \$40 million per  
21 year today. Over the same period, expenditures for electricity efficiency public benefit  
22 programs in California have increased from about \$200 million to about \$300 million per  
23 year, as illustrated by Figure 6. The decrease in RD&D budgets together with the  
24 decrease in efficiency program budgets puts gas ratepayers at a significant  
25 disadvantage compared to electricity ratepayers.

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Figure 1. DOE Spending on Fossil Energy RD&D<sup>3</sup>

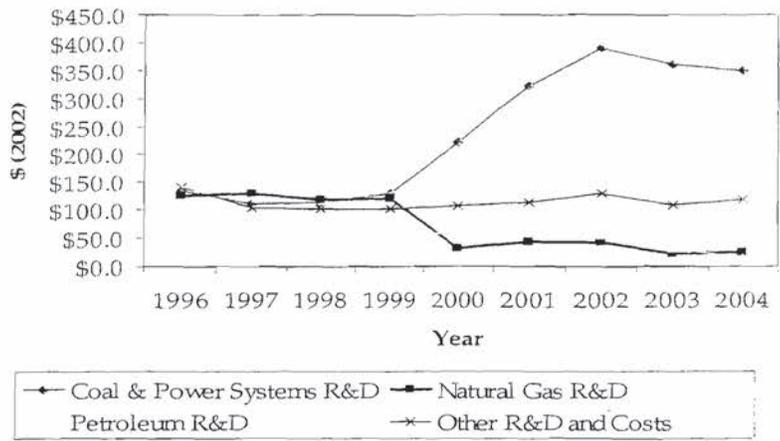
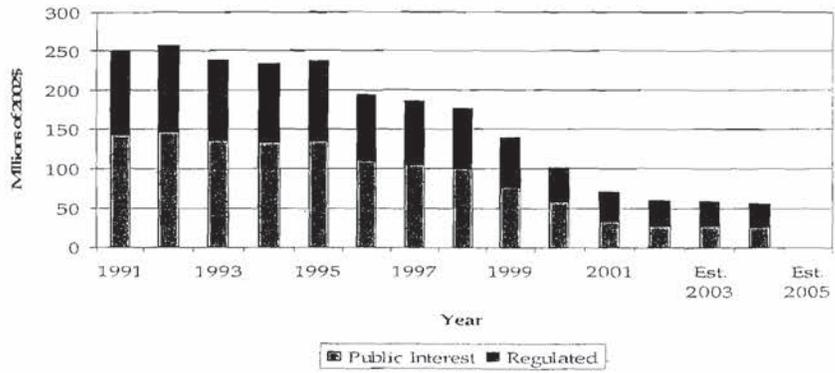


Figure 2. GRI Funding of Public and Regulated RD&D<sup>4</sup>

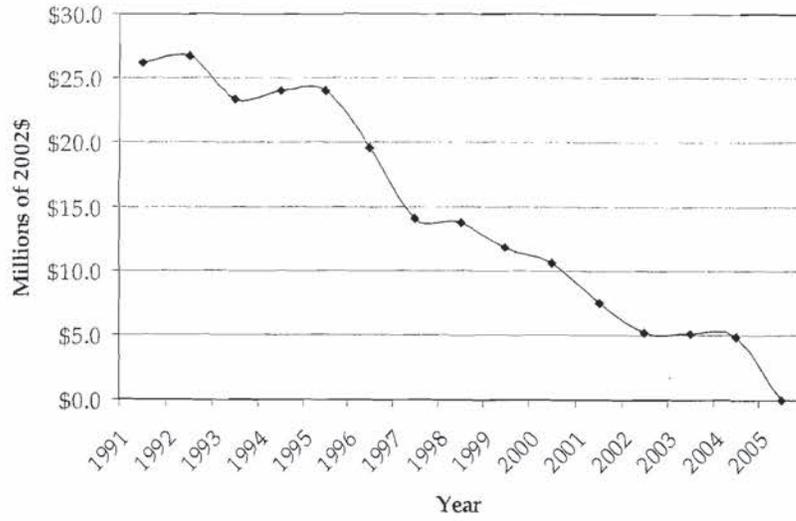


<sup>3</sup> United States Department of Energy, (PIER) Program, 1998-2002, California Energy Commission, 500-03-024F, May, 2003. <http://www.fossil.energy.gov/budget>

<sup>4</sup> GRI

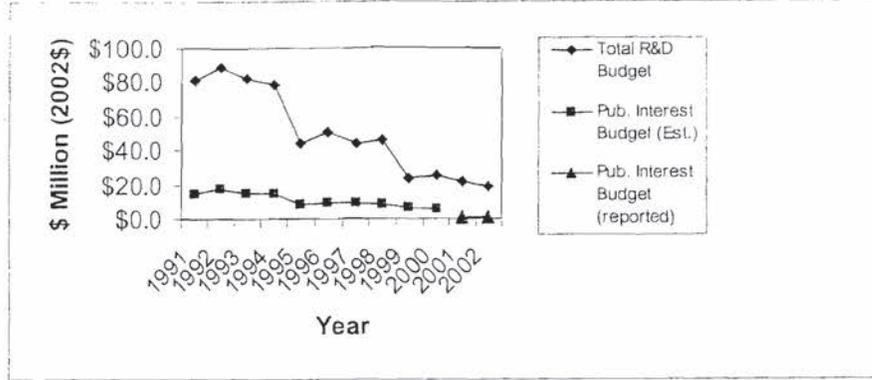
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Figure 3. California Natural Gas Investor Owned Utilities Payments to GRI<sup>5</sup>



<sup>5</sup> 1991 – 1996 California Energy Commission Working Group Appendix, R.94-04-031, I.94-04-032; 1997 – 2002 from GRI; 2003 – 2005 Estimated

Figure 4. Decline in California Investor-Owned Gas Utility RD&D Budgets<sup>6</sup>

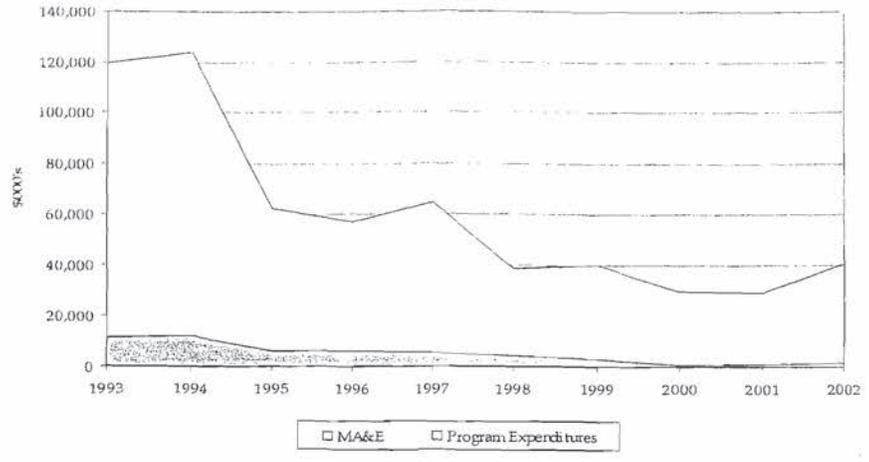


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<sup>6</sup> 1991 – 1996 California Energy Commission Working Group Appendix. R.94-04-031, I.94-04-032; 1997-2002 total RD&D funding from gas IOU annual reports; 1991-2000 estimate of public interest funding are Energy Commission estimates; 2001 and 2002 public interest R&D funding from gas IOU responses to Energy Commission data request.

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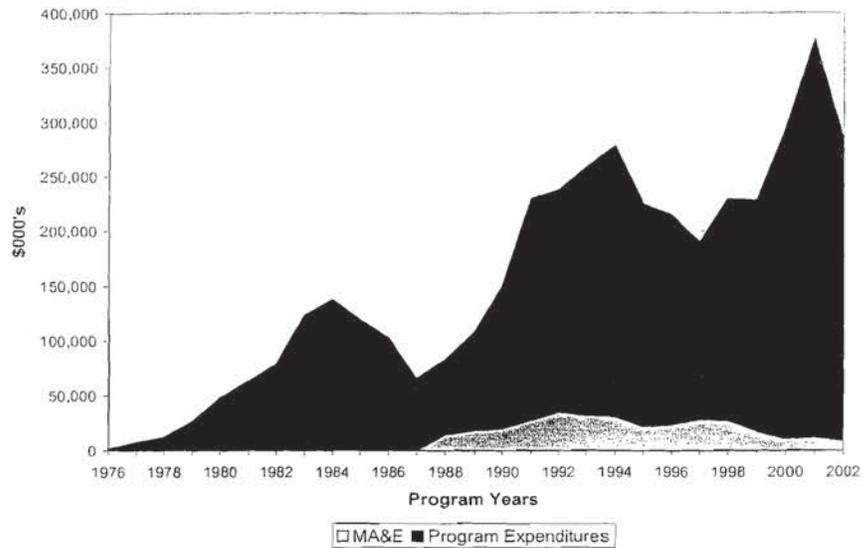
Figure 5. Annual Spending by California on Natural Gas Efficiency Programs 1993 – 2002<sup>7</sup>



<sup>7</sup> Public Interest Energy Strategies Report, California Energy Commission, Staff Report Draft 100-03-012SD, July 29, 2003.

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Figure 6. Annual Spending by California on Electric Efficiency Programs 1976 – 2002<sup>8</sup>



**B. Expected Benefits to California Ratepayers from a Gas Public Interest RD&D Program**

The CEC reviewed benefits evaluations undertaken by the gas research program at GRI and the PIER Program for electricity being managed by the CEC.

The Gas Research Institute began operation in 1978 and has conducted annual benefits assessments of its RD&D program since 1985. GRI collects sales data and performance data for products that have been placed into commercial use, and these data are updated annually for five years after commercial introduction of the products<sup>9</sup>. Benefits are calculated by comparing the cash flow for users of the new products to the cash flow for the most likely competing product over the economic lifetimes of the

<sup>8</sup> Public Interest Energy Strategies Report, California Energy Commission, Staff Report Draft 100-03-012SD, July 29, 2003.

<sup>9</sup> Products as defined by GRI include hardware and software, information products, and improved processes and techniques.

1 products, and benefits are expressed as the net present value of the resultant cash flow  
2 savings. Incremental costs of implementing the new products are subtracted from  
3 annual operating cost savings. The net present values are calculated using constant  
4 dollars for the year in which the evaluation is done, and a five percent discount rate is  
5 used for present value calculations. The sum of the net present values of user benefits  
6 are compared to the present value of the GRI program costs for the previous five years.  
7 The GRI evaluations for the years 1991 through 2002 were reviewed. Benefit to cost  
8 ratios ranged from 4.1 to 1 to 9.4 to 1.

9 In early 2003, the GRI benefits evaluation methodology was applied to the PIER  
10 program. The PIER program had just completed its fifth full year of operation, so many  
11 products were just beginning to enter commercial use. The PIER evaluation estimated  
12 that PIER products placed into commercial use by early 2003 would, over their  
13 economic lifetimes, return between two and five times the costs to operate the PIER  
14 program during its first five years. The projected PIER RD&D benefits come primarily  
15 from technologies that increase the efficiency of electricity end-use, reducing customer  
16 electricity bills and reducing the demand for electricity. Economic theory tells us that  
17 additional benefits will accrue to ratepayers in general as a result of the decreased  
18 demand for electricity through downward pressure on the variable cost component of  
19 electricity prices. Some of the downward pressure on electricity prices may be lost  
20 because of increases in the fixed cost component as utilities strive to maintain their  
21 returns, but we are confident that the overall result will be lower costs for ratepayers.  
22 PIER has not yet attempted to calculate the net savings to ratepayers through this  
23 mechanism, however. As the PIER program matures and additional products enter into  
24 commercial use, there is every reason to expect that the benefit to cost ratio for the  
25 program will approach that of GRI.

26 Based on the success of the GRI and PIER programs, we can project with  
27 confidence that an expanded public interest RD&D program for gas will more than  
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1 return the ratepayer investment in RD&D after its first five years of operation and will  
2 return between four and nine dollars to California ratepayers for every dollar invested  
3 after the program matures.

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6 **III. Discussion of Public Interest Gas RD&D Issues**

7  
8 This section responds to the questions posed in ALJ DeBerry's June 3 ruling.

9  
10 **A. Definition**

11  
12 **1. What is the appropriate definition of "public interest research and  
13 development authorized by Section 740 and not adequately provided  
14 by the competitive and regulated market," specified in Pub. Util.  
15 Code 890(a)?**

16 Drawing from previous work done in the areas of electric and renewable energy  
17 public interest research and development the CEC feels that the following definition  
18 should be used for now in this proceeding.

19 *Public interest RD&D activities are directed toward developing science or  
20 technology, 1) the benefit of which accrue to California citizens and 2) that are not  
21 adequately addressed by competitive or regulated entities.*

22 However, the CEC believes that there are not "bright line" boundaries between  
23 public interest RD&D, regulated RD&D, and competitive RD&D. We recommend for  
24 now that the definitions in the collaborative "Working Group Report on Public Interest  
25 RD&D Activities"<sup>10</sup> should be used for all three definitions. We believe that all three  
26 types of RD&D need to exist and be healthy for full California benefits to accrue over  
27 time, and collaborative "match" funding should be required for projects addressing

28 <sup>10</sup> *Working Group Report on Public Interest RD&D Activities*, Submitted to the CPUC by the RD&D  
Working Group on September 6, 1996.

1 overlapping interests between the three types of RD&D. In addition, operational criteria  
2 also need to be established and applied to the RD&D definition for practical application  
3 of the definition during program administration.

4

5 **2. Does the definition of "public interest" research and development**  
6 **presented in the Working Group Report meet the definition of "public**  
7 **interest" under Pub. Util. Code 890(a)?**

7

Yes. See the response to question A. 1.

8

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**B. Administration**

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**1. Should the utilities administer R&D?**

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No, they should not administer the public interest RD&D program, but they  
13 should fund and administer a healthy regulated RD&D program.

14

15

**2. Should a non-utility entity administer R&D?**

16

Yes, a non-utility entity should administer the public interest RD&D program.

17

18

**3. What criteria should be used by the Commission to select an**  
19 **administrator for R&D?**

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An important step in establishing a natural gas public interest RD&D program is  
21 for the Commission to select an administrative body that will be in charge of the day to  
22 day operations of the program. The following administrator qualities should be used by  
23 the Commission in selecting an administrator for public interest RD&D. Many of these  
24 criteria were developed in the "Working Group Report on Public Interest RD&D

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1 Activities<sup>11</sup>." The Public Interest RD&D administrator should be the most capable  
2 organization in the state to:

- 3 • Serve the statewide public interest;
- 4 • Support state energy policies;
- 5 • Address needs of California end use consumers;
- 6 • Maintain public accountability and provide an open, public process in planning,  
7 projects selection, management and evaluation;
- 8 • Provide effective and efficient program administration at reasonable cost;
- 9 • Support collaboration and enhancement of RD&D capabilities;
- 10 • Consist of experienced and qualified staff in managing RD&D programs;
- 11 • Provide a successful track record for RD&D management.
- 12 • Support the fair selection of outside RD&D performers without internal conflicts in  
13 interests.

14  
15 **4. What criteria should the R&D administrator use to select projects to  
16 undertake?**

17 Criteria for projects selection should reflect the specific subject(s) in the  
18 solicitation. However, the following selection criteria were developed and published in  
19 the Strategic Plan for Implementing the RD&D Provisions of AB 1890, published by the  
20 California Energy Commission in 1997 (Report P500-97-007). They are still appropriate  
21 as generic selection criteria.

22 Public Benefits: Evaluate the level of public and private benefits in comparison  
23 with the proposal costs to be funded by the RD&D program and collaborative  
24 participants. Public benefits can include improvements to the quality of the environment  
25 above and beyond current legal requirements, beneficial utilization of indigenous and/or  
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28 <sup>11</sup> Working Group Report on Public Interest RD&D Activities, Submitted to the CPUC by the RD&D  
Working Group on September 6, 1996.

1 renewable sources of energy, reduction in statewide energy requirements, increases in  
2 the overall efficiency and reliability of generation or end-use of energy, and positive  
3 impacts on the economies at the regional or statewide levels through, for example,  
4 consumer cost savings and creation of jobs.

5 Quality of Proposal: Determine the degree to which the proposal helps to  
6 advance the objectives of one or more of the program's focus or strategic areas.  
7 Evaluate the quality of the proposal to determine if the goals, objectives and work  
8 statement represent technically viable means to resolve the major barriers. Evaluate  
9 whether the proposal describes the relationship of related RD&D efforts to ensure the  
10 proposal represents a synergistic approach without duplication of effort. Evaluate  
11 whether there is a realistic technical and financial vision for transferring results of the  
12 proposal into the marketplace within a defined timeframe, and the proposed level of  
13 cost-sharing appropriate to the type of proposal being considered. Evaluate the size of  
14 the applicable niche and/or mass markets and gauge the likelihood for commercial  
15 success. Evaluate whether the budget and timeframe for the proposal are sufficient to  
16 achieve the desired results.

17 Qualifications of Research Team: Gauge the strength and  
18 viability of the proposer's team based on: (1) the knowledge, qualifications and  
19 experience of key individuals; (2) the past performance, financial stability and level of  
20 commitment; (3) the plans for, and track record of, transferring research results into the  
21 marketplace; and (4) the plans for collaboration and/or an alliance path to the market  
22 where appropriate.

23 Policy Consistency: Assess the technical, market and financial risks of the  
24 proposal and the likelihood of and timeframe for success. Weigh the results of these  
25 evaluations with the degree to which the proposal advances the objectives of one or  
26 more focus areas, and is consistent with State energy policy.

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1           Preferences: Evaluate all preferences or other considerations required by law or  
2 specified in the program's operational plan(s) (e.g., California public policy provide a  
3 contracting preference for disabled veterans businesses).

4  
5           **5.     How should the R&D administrator evaluate the completion of**  
6           **selected R&D projects?**

7           There are a variety of ways in which project completion can be assessed and  
8 evaluated. Project completion evaluation should be interconnected with project reviews  
9 during the term of project performance and also with reviews of program area(s) and the  
10 overall RD&D program. In defining the process for project evaluation, the Commission  
11 should ensure that projects are assessed by the administrator for both specific public  
12 benefits and contribution to achieving California energy policy objectives. The overall  
13 RD&D program should also be reviewed by an independent review committee. The  
14 following examples illustrate four independent processes that, if used together, will  
15 provide a cohesive project completion (and program) evaluation structure. These  
16 processes are currently used by the CEC for the PIER program.

17           Interim critical project reviews: On-going critical project reviews (developed as  
18 part of a scheduled list of milestones before the RD&D project begins) provide an  
19 effective way for the program administrator to track project progress and provides a  
20 solid foundation for adjusting project direction, terminating the project early, and  
21 providing fair project evaluations after the project is completed.

22           Evaluations by the contract manager: Final project evaluation by specific contract  
23 managers who are familiar with the project's scope of work will provide the most  
24 accurate assessment of project completion. These evaluations can be used to help  
25 make future program funding decisions.

26           Program subject area reviews: Program subject area reviews by a peer review  
27 committee will provide quality feedback to improve each subject area RD&D program. A  
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1 review process of this type is described in the Public Interest Energy Research Annual  
2 Report 2002, P500-02-076F, pp. ES5-ES6.

3 Overall public interest reviews: An independent third-party review process of the  
4 full program, which can include project reviews, should be conducted periodically. An  
5 example of this process is the independent review panel that reports to the Legislature  
6 on the CEC's PIER Program.

7

8 **6. How should the R&D administrator determine that funds have been**  
9 **spent appropriately and in a cost-effective manner?**

10 The qualitative measurement of appropriate funding and spending should be  
11 conducted through the integrated, four-step project and program evaluation process  
12 outlined in the response to section B question 5. In addition to the qualitative analysis  
13 done by project contract managers the administrator must also take into account the  
14 nature of RD&D investment. There are many qualitative benefits to the public at large  
15 associated with science and technology RD&D not directly associated with the specific  
16 project objectives and their direct economic impacts. For example, the pulse  
17 combustion gas furnace, introduced into the home heating market by Lennox in the  
18 1980's, stimulated advances by competing gas furnace manufacturers and helped to  
19 bring about an increase in gas space heating efficiency well beyond the impacts of the  
20 original Lennox pulse furnace. Another common occurrence is the use of RD&D results  
21 in applications quite different from the intended one, resulting in 'spin-off' benefits to  
22 society.

23 In addition, periodic evaluations of program commercial successes should be  
24 undertaken to measure the extent to which projected benefits are being realized and to  
25 determine whether program benefits to ratepayers exceed program costs.

26

27

28

1           **7.     What are the public benefits of allowing the utilities to oversee RD&D**  
2           **projects?**

3           Addressing the needs of end use consumers. Natural gas utilities are close to  
4 market and end use consumers in their service territories, providing them with a  
5 competitive advantage in addressing the needs of those customers by targeting and  
6 identifying RD&D projects that have a high likelihood of being widely adopted in their  
7 service areas. In addition, utilities administer public benefit efficiency deployment  
8 programs in California. Thus, they have the opportunity to achieve added benefits for  
9 customers by coordinating the public interest RD&D and the efficiency programs.

10  
11           **8.     What are the disadvantages of allowing the utilities to oversee R&D**  
12           **projects?**

13           Support State Energy Policies. Utilities are necessarily focused on their service  
14 areas rather than the entire state. This discrepancy could lead to conflicts of interest  
15 between utility objectives and state wide energy policy objectives. In addition, utilities  
16 have little incentive to encourage the success of RD&D products outside their own  
17 service areas. Benefits realized from the research will likely be greater if the  
18 administrator has a motivation to encourage the widest possible application of the  
19 research results in the state, and to clearly address statewide energy policy issues  
20 through RD&D actions.

21           Public accountability and use of public processes. The desire to maintain a  
22 competitive advantage and to protect information that may be beneficial to a competitor  
23 make it difficult for a utility to maintain public accountability and an open, public process  
24 in planning, soliciting projects, managing, and evaluating a public interest RD&D  
25 program. There is little evidence that public availability of RD&D results and public  
26 processes consistently have been used in the past for IOU RD&D programs.

27  
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1           Effective and efficient program administration. RD&D departments in IOUs have  
2 been eliminated in the past decade and key staff have left the companies. Distributing  
3 RD&D activities throughout a company is not an effective or efficient method of RD&D  
4 program administration for many reasons, such as the lack of overall program planning,  
5 cohesiveness, and standards for the performance of RD&D.

6           Experienced and qualified staff. In the 1980s to the mid-90s, IOUs had many  
7 experienced and qualified staff performing public interest RD&D activities. Today, most  
8 qualified RD&D staff have either left the IOUs for work in other RD&D institutions or  
9 changed jobs because of a steady decline in RD&D programs in IOUs.

10           Successful track record for RD&D management. Similar to the comment above,  
11 the IOUs track record for RD&D management in recent years has declined with  
12 declining funding. Clearly, public interest RD&D program management has not been an  
13 important priority for IOUs in California in the past decade.

14           Fair selection of RD&D performers without conflicts in interests. There currently  
15 is a large and qualified RD&D industry in California that has the experience and  
16 qualifications to perform public interest energy RD&D to benefit California. In the past,  
17 IOUs would fund RD&D projects that were performed internally by IOU staff and use  
18 funds to construct RD&D facilities owned by the IOU. Funding of internal RD&D  
19 projects may create a conflict of interest in fairly considering the RD&D community  
20 outside of the IOU to perform RD&D.

21

22           **9. What are the public benefits of allowing a non-utility administrator to**  
23           **oversee R&D projects?**

24           A non-utility administrator can be selected by the CPUC that effectively meets all  
25 of the criteria in the response to question B. 3.

26

27           **10. What are the disadvantages of allowing a non-utility administrator to**  
28           **oversee RD&D projects?**

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The only apparent disadvantage may be that a non-utility administrator may not be as closely connected to the end use ratepayers in a service territory market as a utility, increasing the risk that some research products will not meet local market needs in the service territory.

**11. How should the administrator's overheads and other expenses be recovered (e.g., by utility ratepayers funded through the Natural Gas Public Purpose Program Surcharge, etc.)?**

The administrator's overhead and other non-specific project costs should be recovered using the Natural Gas Public Purpose Program Surcharge fund, refer to section B question 15 for more about administrator's overhead cost recovery.

**12. How should the Commission evaluate the performance of a R&D administrator?**

Annual reports from the administrator outlining the past year accomplishments of the program should be provided to the Commission. In addition, project evaluations discussed in section B question 5, will give the Commission adequate information for assessing the success of various RD&D projects as well as the overall program's performance. Specifically, the establishment of an independent third party review process would also help the Commission in evaluating the administrator's performance.

**13. Should the administrator have the discretion to determine what projects should be funded?**

Yes

**14. Should the Commission or Energy Division approve R&D projects for funding?**

1           The Commission and the Energy Division should not become involved in  
2 individual project selection. The job of project selection and funding is properly the role  
3 of an administrator. However, the Commission should approve the overall program  
4 direction and funding priorities of an administrator, e.g., through approval of an RD&D  
5 plan.

6  
7           **15. What levels of R&D overhead or administrative costs are reasonable  
8 and should such costs be recoverable through the Gas Consumption  
9 Surcharge Fund?**

10           Overhead and administrative costs are very difficult to fairly evaluate because of  
11 a lack of standardized definitions and a widely varying scope of RD&D work in different  
12 organizations (e.g., is the organization an RD&D administrator only, an RD&D performer  
13 only, or both?). This assessment should be done by independent evaluation as briefly  
14 described in the response to question B. 5.

15           In order to assess an appropriate level of overhead and administration costs a  
16 clear definition of overhead and administrative costs needs to be set forth and agreed  
17 upon by all parties. After definitions have been decided upon a benchmark of costs  
18 may be established based on other similar RD&D programs with a similar scope of work  
19 (e.g., select from PIER, GRI, EPRI, Prior IOU programs, NYSERDA, and National  
20 Laboratories). Once these benchmarks have been set the program should be  
21 structured such that it's overhead and administrative costs fall within these excepted  
22 industry benchmarks.

23           **16. What type of accounting procedures should be established to track  
24 R&D spending (e.g. project specific, etc.) and overhead?**

25           Before project approval by the public interest RD&D administrator, contracts  
26 should be prepared that include (at a minimum) project goals, work tasks, budget,  
27 deliverables, and a milestones schedule. In general, contractors should be paid by the  
28

1 RD&D administrator on a cost-reimbursement basis for the deliverables provided in  
2 accordance with the milestones established in the contract. Accounting practices for  
3 Public interest RD&D should be based on established government accounting principles  
4 and procedures.

5

6 **17. How can the Commission ensure that R&D funds are being spent to**  
7 **achieve their maximum benefit at minimum cost?**

7

8 The Commission should seek outside expertise to fairly and effectively evaluate  
9 the public interest RD&D program. An independent third party evaluation as briefly  
10 described in the response to question B.5 and previous questions offers an unbiased  
11 review of project successes by industry experts not closely tied to specific projects.  
12 This has been an effective approach used by the Legislature and the Energy  
13 Commission in the evaluation of the PIER program. Internal benefit-to-cost analysis  
14 work similar to that done by GRI and PIER also offers a good evaluation of achievable  
15 benefits. However, the measurement of benefits needs to include environmental and  
16 other non-monetary public goods well as economic benefits.

17

18 **C. Proposed R&D Projects**

19 **1. How should R&D funding levels be determined?**

20

21 The appropriate funding level determination should be estimated in multiple ways  
22 to insure accuracy and consistency with other similar RD&D programs. The following  
23 three methods are all justifiable analytical methods to determine the appropriate level of  
24 funding for this program.

25

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- 1 • Social Investment Approach. A desirable level of investment based on utility  
2 revenues recommended by NARUC<sup>12</sup> about 1% of revenues. This percentage  
3 can be applied to the revenues of California investor-owned natural gas utilities  
4 to determine an appropriate funding level.
- 5 • Gap Method. If RD&D outlays have been declining over a period of time and it is  
6 judged that the previous, higher level of expenditures is the optimum level, then  
7 the appropriate level of funding can be estimated as that necessary to fill the  
8 funding "gap" and restore RD&D funding to previous levels.
- 9 • Market Parity Method. The ratio of gas public interest RD&D program funding to  
10 California gas utility operating revenues can be made equal to the ratio of PIER  
11 program funding to California electricity utility operating revenues.

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**2. What specific R&D projects should be undertaken and funded through the Natural Gas Public Purpose Program Surcharge? Describe proposed project in detail including objectives, benefits, etc. (Identify if project is under consideration in another Commission proceeding.) Explain why it is in the "public interest." What is the approximate cost of each project, including overhead?**

Project selection within a public interest RD&D program requires very careful program planning and subprogram planning. Special consideration also should be given to the consistency of the program with state energy and environmental policies and connection of the RD&D to the market. After targeting the RD&D subprograms, careful consideration must be made to determine the best possible performers of the planned RD&D work. Usually, competitive public processes with a merit review of proposals should be used to select the best performers and projects. Specific, high quality projects will be identified after going through this process.

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<sup>12</sup> Ibid. Working Group Report

1           Recent trends in gas supply and demand and the recent emergence of significant  
2 problems in serving customers suggest several areas in which RD&D could contribute.

3 A few possible focus areas for a gas public interest RD&D program might include:

- 4
- 5 • Creation of more efficient end-use technologies for buildings and industrial  
6 customers.
  - 7 • Load management and storage technologies and strategies to shift loads from  
8 peak to off-peak periods.
  - 9 • Energy efficient, advanced production technologies for California gas supplies  
10 and the development of substitutes for natural gas (e.g., biogas and hydrogen).
  - 11 • Technologies to reduce the environmental impacts of gas supply, distribution,  
12 and use.
- 13

14           In addition, a regulated RD&D program should be conducted by IOUs that  
15 addresses the regulated functions of the utility (e.g., distribution system, O&M, meeting  
16 laws and regulations, etc.). When there is overlap between the public interest and  
17 regulated RD&D programs in high priority areas, joint projects planning and funding  
18 should occur.

19

20           **3.     How should R&D projects be prioritized for funding?**

21

22           A five-step process should be used to target RD&D and set priorities for funding,  
23 including: 1) Development of an RD&D action plan that respond directly to overall state  
24 energy policy direction (e.g., as determined through the "Energy Action Plan"<sup>13</sup> of the  
25

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27 <sup>13</sup> *State of California Energy Action Plan*, Adopted by the Consumer Power and Conservation Financing  
28 Authority, the Energy Resources Conservation and Development Commission, and the Public Utilities  
Commission, May 8, 2003.

1 CPUC & CEC & CPA, and the upcoming "Integrated Energy Policy Report"<sup>14</sup> of the  
2 California Energy Commission). 2) This state energy policy guidance and action plan is  
3 then used to help develop more detailed plans in each of the subject areas of the Gas  
4 Public Interest RD&D program. 3) These plans should then be used by the  
5 administrator in a budgeting process to allocate annual funds to each RD&D subject  
6 area in the program. 4) The RD&D subject areas would then procure specific RD&D  
7 projects, typically by the public release of competitive solicitations that identify the  
8 proposed RD&D work that is eligible for funding, including specific topics for research,  
9 eligibility requirements, evaluation criteria, and the selection and scoring process. 5) A  
10 merit review process with peer experts should then be used to evaluate and rank  
11 proposals for the RD&D administrator, who would then make decisions for funding.

12  
13 **4. Should the Commission establish an authorized annual budget for**  
14 **R&D projects, if so, how should it be established (e.g., based upon**  
15 **proposed R&D projects, percentage of revenues, etc.)?**

16 The Commission should establish a stable annual funding level for a minimum of  
17 five years as the Legislature has done for the PIER program. The stability and  
18 predictability of funding are essential for effective planning and management of an  
19 RD&D program. Most RD&D programs will require longer than one year for completion.  
20 If project expenses are to be reimbursed based on actual contractor expenses (See  
21 response to question C.12), then the administrator must have a stable and predictable  
22 funding source that will be there to pay the contractor when he has completed contract  
23 tasks. Further, the completion of a comprehensive RD&D program will generally require  
24 multiple contractors and multiple contracts over a period of years. The funding source  
25 must be stable and predictable in order to effectively plan such a long-term effort. See  
26 response to C.1 for a discussion about how to establish the funding level. The

27 \_\_\_\_\_  
28 <sup>14</sup> Integrated Energy Policy Report, draft CEC report in preparation.

1 administrator should develop and manage an RD&D program to stay within the  
2 authorized budget limits.

3 The Commission should provide high-level oversight of the RD&D program  
4 proposed by the administrator based on the Independent Review process discussed  
5 earlier. The Commission should not be involved in project selection or day-to-day  
6 management of the program. Program management and implementation should be left  
7 to the discretion of the administrator.

8

9 **5. What type of cost/benefit analysis should be conducted to determine  
10 whether a R&D project should be funded; how can the benefit be  
measured?**

11 A quantitative cost-benefit analysis is one aspect of project selection, but it alone  
12 is not sufficient to determine whether a proposed project should be funded. Criteria (see  
13 response to question B. 4) and a merit review scoring process should be used to  
14 evaluate and rank RD&D proposals.

15

16 **6. [No question included in Attachment A questions.]**

17

18 **7. How can the Commission determine if the proposed benefits of the  
19 R&D project were achieved?**

20 Please see the response to question B. 5 for an integrated, multi-step review and  
21 evaluation process to determine the benefits of an RD&D program and projects. In  
22 addition, there should be annual RD&D reports by the administrator that should be  
23 submitted to the Commission.

24

25 **8. Under what grounds should spending for R&D projects be  
26 disallowed (e.g., project exceeds authorized budget, cost/benefit  
analysis, etc.)?**

27

28

1 Prior to funding, RD&D projects should have clear goals, work tasks, budget,  
2 deliverables and a schedule of milestones in a contract between the RD&D program  
3 administrator and the RD&D performer. The administrator will then have the ability to  
4 discontinue project funding if project goals are not being met, based mainly on critical  
5 project reviews and the other project assessment criteria discussed in section B  
6 question 5.

7

8 **9. What policy should the Commission adopt for R&D projects which**  
9 **have commercial applications?**

10 The public interest RD&D program should not provide funding to subsidize the  
11 installation of commercially-available products. This RD&D program should provide  
12 funding to advance science or technology not adequately provided by competitive and  
13 regulated markets. Other public programs are available to support commercial  
14 applications. For example, energy efficiency, low income and renewables deployment  
15 programs established through AB 1890 provide market incentives to deploy  
16 commercially available products.

17 However, the Commission should encourage RD&D projects that have a high  
18 potential for commercialization. Usually a project's benefits, especially to the California  
19 public, are not fully realized until it has been fully commercialized and is in wide spread  
20 use. Thus, the public interest RD&D program should also address the "valley of death"  
21 issues in bridging the market introduction of successful public interest RD&D projects.

22

23 **10. How can the Commission ensure that R&D projects are not**  
24 **duplicative or being undertaken by other entities?**

25 There are a variety of ways the Commission can ensure that RD&D projects are  
26 not duplicative, most of which should be standard operating procedure for the  
27 administrator. One important approach would be for the Commission to select a single  
28

1 statewide administrator for the public interest RD&D program. This approach will  
2 simplify the responsibility for eliminating needless redundancy in RD&D funding. In  
3 addition, a good administrator should be aware of the industry parties involved in gas  
4 RD&D as well as the pertinent issues facing the state of California and the gas industry.  
5 Peer and technical reviews allow for industry experts to give feedback on current and  
6 future projects. The administrator must also be aware that an alternative path to similar  
7 results does not automatically signify duplicative RD&D. In some cases pursuing  
8 parallel paths may increase the likelihood of success and best serve the public interest.

9  
10 **11. What type of R&D coordination activities should the Commission  
11 employ to prevent duplicative activities?**

12 Refer to section C question 10.

13  
14 **12. What procedures should be in place if expense for an R&D project  
15 exceeds its budget or authorized spending limit?**

16 Clear procedures should be established by the public interest RD&D  
17 administrator to control project expenditures. For example, through project monthly  
18 progress and expenditure reports and through critical project reviews (see the response  
19 to question B. 5) at key project stages project managers should be alerted to potential  
20 project budget overruns and should be able to continue, cancel, or redirect the projects  
21 as appropriate. In general, project expenses should be reimbursed to contractors  
22 based on actual contractor expenses. In addition all contracts should have an  
23 authorized spending limit, and costs in excess of this limit should not be billable without  
24 a prior contract modification.

25  
26 **13. Is there a clear distinction between gas-related R&D and electric  
27 public purpose R&D (i.e., can gas related R&D projects impact  
28 electric related activities)? If not, does this raise issues that the  
Commission should be concerned about?**

1  
2 Very few RD&D projects will impact only the gas system or only the electric  
3 system. First, gas is a major fuel for electricity generation in California. Therefore,  
4 projects that affect the availability, reliability, or price of gas will affect electric utility  
5 operations and the availability, reliability, and price of electricity. Second, a consumer  
6 may choose to provide energy services for most end uses with either electricity- or gas-  
7 fueled equipment. Therefore, a new gas (electric) end-use technology that succeeds in  
8 the market will generally do so at the expense of a competing electric (gas) technology.  
9 Still other technologies can impact both gas and electricity markets, e.g., combined heat  
10 and power systems. This is a very important consideration for the Commission in this  
11 proceeding. The distinction between gas and electric RD&D can only be done on a  
12 project by project basis.

13  
14 **D. Reimbursements for the Gas Consumption Surcharge Fund**

15  
16 **1. What types of procedures should be in place for administrators**  
17 **(utility or 3<sup>rd</sup> party) to be reimbursed from the Fund?**

18 A minimum of five years of funds should be made available to the administrator  
19 immediately after approval of a five-year RD&D plan by the Commission (i.e., CPUC).  
20 The collected funds should be deposited into a fund every quarter for the administrator.  
21 If the administrator is a state agency such as the CEC, legislative authority does not  
22 exist to advance payments to a contractor and later to request reimbursement from the  
23 CPUC or the Board of Equalization. Also, if the gas public interest administrator is state  
24 agency, an annual appropriation out of the fund may be required. The administrator  
25 should then be free to implement the RD&D program and obligate funds to contractors  
26 as the program proceeds, and to pay recipients as milestones and deliverables are  
27 provided to the administrator. A state agency such as the CEC would have access to  
28

1 the appropriated funds throughout the life of the appropriated funds so that timely cost-  
2 reimbursement payments are made for valid invoices from the contractor.

3  
4 **2. When should administrators be reimbursed from the Fund (e.g., at  
5 the completion of the R&D project)?**

6 See the response to question D. 1. The state-wide administrator should not be  
7 reimbursed by the Commission. Funds should be deposited in a special account for  
8 public interest RD&D on a quarterly basis for statewide administration, as is done for the  
9 CEC PIER program. In general, RD&D contractors should be reimbursed by the  
10 administrator based on performance.

11  
12 **E. R&D Program Costs**

13  
14 **1. Have the utilities removed public interest R&D costs from their  
15 rates?**

16 From the information provided to the CEC, it appears that only Southern  
17 California Gas and San Diego Gas and Electric Company currently have public interest  
18 RD&D programs, which were funded at approximately \$0.7 million in 2002 and \$1.7  
19 million in 2003.

20  
21 **2. How should R&D costs be treated in the development of the  
22 surcharge rate?**

23 The rate surcharge should be established at a level adequate to fund all four  
24 public benefit programs required by AB 1002. This funding should be stable and  
25 provided for at least a five year time period, as is done by the Legislature for the three  
26 electricity public purpose programs created by AB 1890. A minimum annual funding  
27 level needs to be established for the gas public purpose RD&D program. Several  
28

1 methods can be used to determine this funding level. Three methods are described in  
2 Appendix B. The Energy Commission recommends a funding level of at least \$26  
3 million per year for gas public interest RD&D.

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5 This concludes the direct testimony of the CEC.

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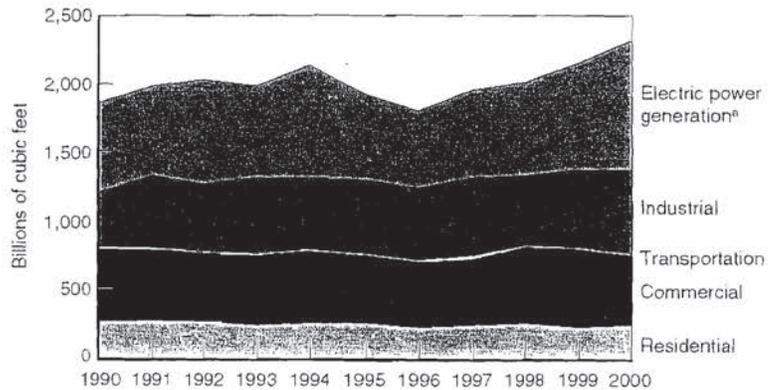
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1 Appendix A

2  
3 Relevant trends in gas consumption, prices, and customer costs in  
4 California

5 Gas demand has grown steadily in California during the past decade with most of  
6 the growth occurring in the electricity generation sector (see Figure A-1). While growth  
7 in the electricity generation sector has grown significantly because of the stringent  
8 environmental regulations, there has been a decrease in the residential and commercial  
9 sectors due to efficiency improvements. As shown in Figure A-2, this growth is  
10 expected to continue in the future.

11  
12 **Figure A-1. Growth of Electricity Use in California by End-Use<sup>15</sup>**

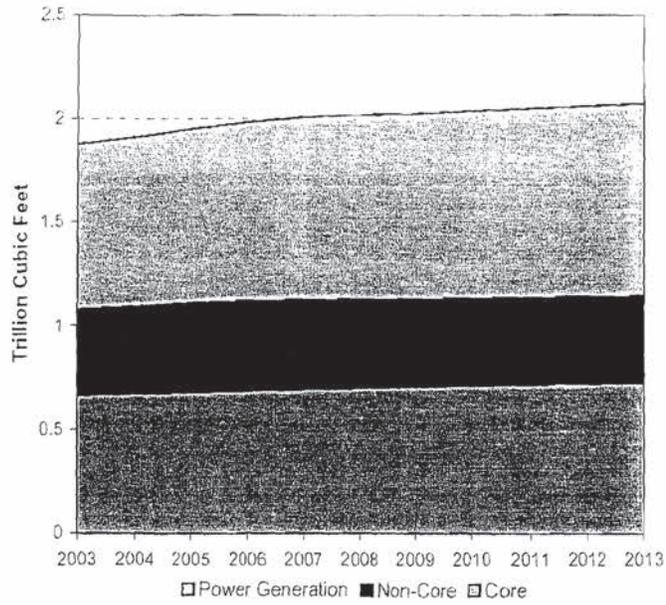


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21 <sup>6</sup>Includes gas consumed by utilities, merchant and cogenerators in the commercial and industrial sectors.

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27 <sup>15</sup> RAND Science and Technology, "Implications and Policy Options of California's Reliance on Natural Gas", M.A. Bernstein, Page 7

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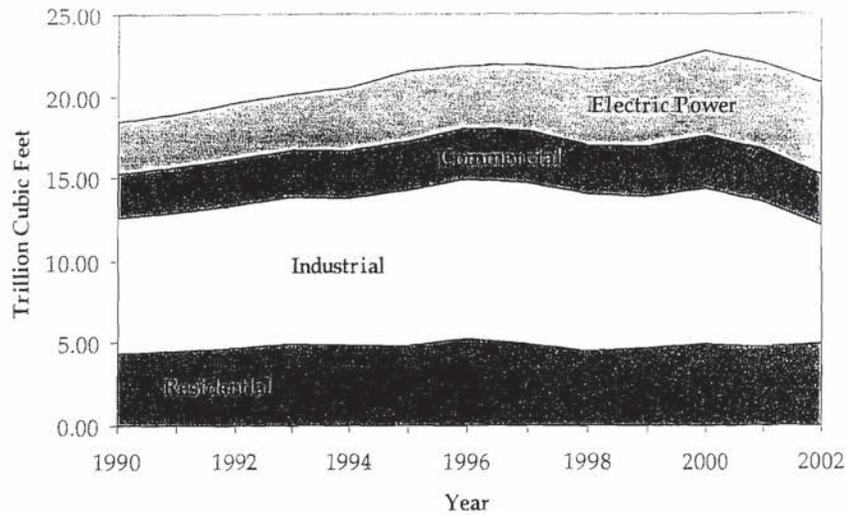
Figure A-2. Projected Natural Gas Demand in California by Sector<sup>16</sup>



Gas has shown similar growth nationally although to a somewhat lesser extent in the electricity generation sector than for California. Figure A-3 shows the nation's gas consumption on a similar trend to that of California.

<sup>16</sup> California Energy Commission, "Preliminary Natural Gas Market Assessment", May 27, 2003, 100-03-006SR, page 13

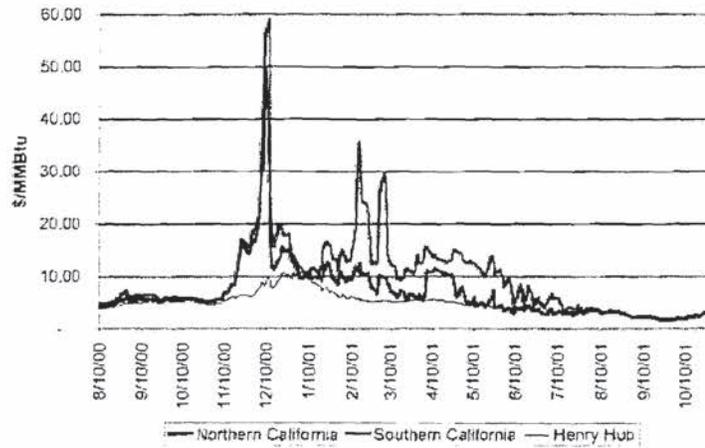
Figure A-3. Natural Gas End Use by Sector for U. S. (1990-2002)<sup>17</sup>



Gas prices in California have been relatively stable in all sectors until 2000, when prices rose substantially because of tightening gas supplies. Figure A-4 shows gas prices were highly volatile during 2000 and 2001 when spot prices rose to almost \$50 per million Btus for short periods. The increases in gas price and the volatility during 2000 and 2001 had major economic impacts for all sectors, but particularly for the electricity generation and industrial sectors.

<sup>17</sup> Energy Information Administration

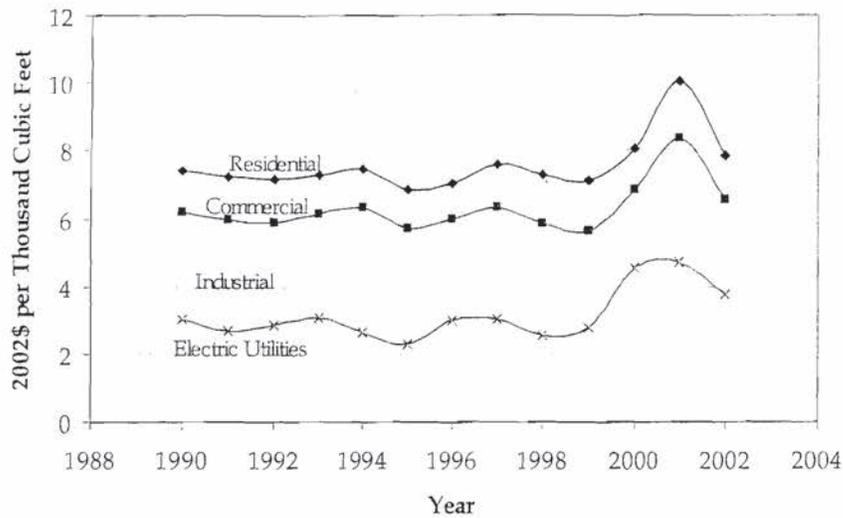
1  
2 **Figure A-4. Example of Natural Gas Spot Prices during 2000-2001<sup>18</sup>**



14 The nation as a whole reflected the price increase seen in California. Figure A-5 shows  
15 the price jump seen during 2000 – 2001 period on the national level.  
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27 <sup>18</sup> CEC, [http://www.energy.ca.gov/naturalgas/2001\\_weekly\\_updates/](http://www.energy.ca.gov/naturalgas/2001_weekly_updates/)  
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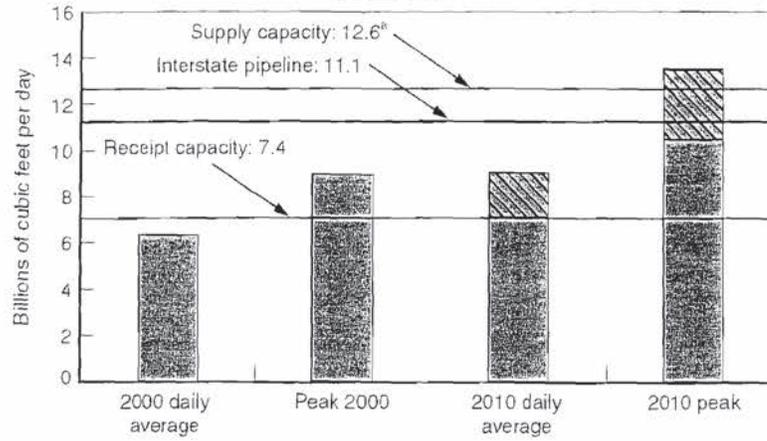
Figure A-5. Increase in Gas Prices for U. S. (1990 – 2002)<sup>19</sup>



The growth in gas demand in California is still within pipeline delivery capacity limits for California today, but more pipeline capacity will be required before 2010. As shown in the Figure A-6, however, demand exceeded pipeline capacity within California during the peak period in 2000. Normally, gas storage is used to provide local supplies during the winter period when the peak load occurs. However, the growth in gas use for electricity generation resulted in a secondary peak during the summer when storage is normally replenished. The summer demand for gas plus the accompanying higher than historic summer prices caused the gas industry to delay filling storage to normal levels during the summer of 2000 as shown below in Figure A-7. This exacerbated the supply problems and gas price volatility during the winter of 2000-2001. The change in the shape of gas demand from a winter peak and a summer lull to a two peak shape will get more pronounced as gas demand for electricity generation grows and will cause major changes in the operation of the gas system.

<sup>19</sup> Energy Information Administration

1 Figure A-6. Future Gas Pipeline System Capacity in California vs. Projected  
 2 Demand<sup>20</sup>

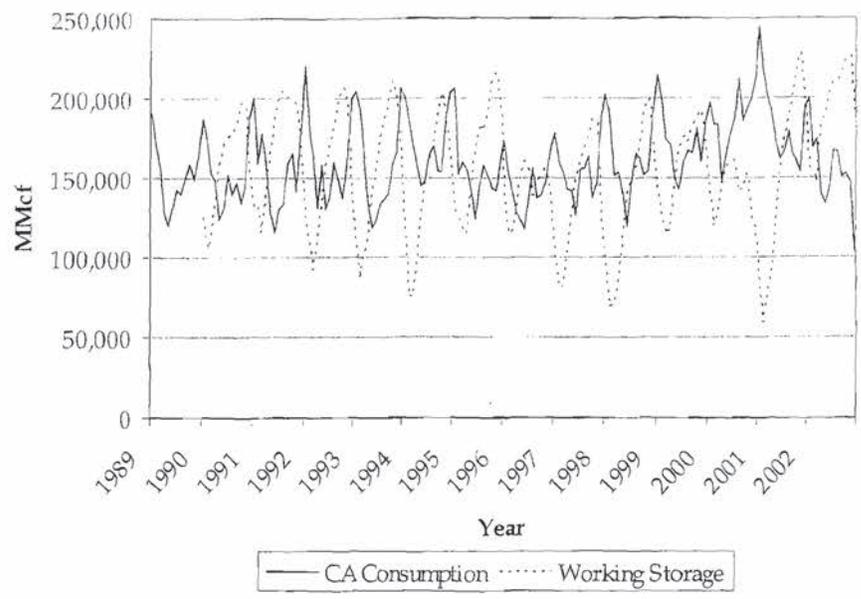


11 <sup>a</sup>California production + interstate pipeline capacity to California border + storage withdrawal capacity.  
 12 NOTE: Cross-hatched portion of bar represents uncertainty in the forecast.

26

27 <sup>20</sup>RAND Science and Technology, "Implications and Policy Options of California's Reliance on Natural  
 28 Gas", M.A. Bernstein, Page xxi

1 Figure A-7. California's gas consumption and storage levels 1990-2002<sup>21</sup>



<sup>21</sup> Energy Information Administration

1 Appendix B

2  
3 Approaches Used to Estimate Appropriate RD&D Funding Level

4  
5 A. Funding Levels

6  
7 The CEC used several approaches in determining the appropriate size of the  
8 public goods charge to be used in support of a public interest natural gas RD&D  
9 program. A listing of the approaches used and the resulting funding levels is included in  
10 Table B-1.

11  
12 Table B-1. Possible Alternative Funding Levels for Public Interest Gas RD&D  
13 Program for California

14

Approach	Funding Level (\$ in millions)
Social Investment Approach	\$30.1
Gap Method	\$28.0
Market Parity Method	\$20.0

15  
16  
17

18 B. Approaches Used to Evaluate Appropriate Funding Level

19  
20 The three funding level approaches mentioned within the testimony each use  
21 different assumptions, criteria, and data to arrive at a reasonable level of funding.

22 Social Investment Approach: This approach is based on the assumption that 1%  
23 of California's gas utilities operating revenues is a desirable funding level for all  
24 California gas RD&D. This assumption is described in the Public Interest RD&D  
25 Activities Working Group Report<sup>22</sup> and is based on a resolution by the National  
26 Association of Regulatory Utility Commission. Once this total RD&D funding level is

27  
28 <sup>22</sup> "Working Group Report on Public Interest RD&D Activities". Submitted to the Public Utilities  
Commission of the State of California on April 20, 1994, R.94-04031, I.94-04-032

1 established the amount of public interest RD&D in relation to regulated RD&D within the  
2 total amount must be established. Based on historical data from GRI and California  
3 utilities an average ratio between public interest and regulated RD&D funding was found  
4 to be approximately 50%. Using this rational for total California gas RD&D and the  
5 relationship between public interest and regulated RD&D the following formula was  
6 constructed to calculate the Gas Public Interest RD&D funding level.

7

$$8 \quad \text{Gas Public Interest Funding} = (\text{Gas Operating Revenue}) \times 1\% \times 50\%$$

9

10 Gap Method: This method attempts to quantify the funding gap that has become  
11 apparent between early 90s and today's gas public interest RD&D funding levels. This  
12 gap is made up by two different funding sources, California's funding of GRI and  
13 California's gas utilities own internal RD&D funding. Data provided by GRI shows a  
14 sharp decline in GRI total RD&D Expenditures after the early 90s. The relationship  
15 between this sudden decline and the anticipated elimination of GRI operation in 2005  
16 lends credibility to this methods assumption. This approach uses the entire GRI public  
17 interest funds from California as the GRI gap. California IOUs' internal public interest  
18 RD&D spending was estimated using their total RD&D budgets and historical ratios  
19 between gas and electricity RD&D. Adding the GRI gap and IOU's gap together yields  
20 total annual gas public interest funding gap for California.

21

22 Market Parity Method: This approach attempts to establish a surcharge funding  
23 level for natural gas that is proportional to the current surcharge funding for electricity.  
24 This approach uses the reasoning that an equitable way to establish funding levels for  
25 electricity and gas public interest RD&D is to set the funding so that electricity and gas  
26 utilities pay the same percentage of operating revenues. This ratio was then multiplied

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28

1 by the PIER surcharge funding of \$62.5 million to find a comparable gas surcharge  
2 level.

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CERTIFICATION OF SERVICE

I, **CHESTER HONG**, certify that I have served copies of the **"TESTIMONY OF MICHAEL DeANGELIS ON BEHALF OF THE CALIFORNIA ENERGY COMMISSION CONCERNING THE FUNDING AND ADMINISTRATION OF A NATURAL GAS PUBLIC INTEREST RD&D PROGRAM"** on service list **R.02-10-001** on all parties by e-mailing/ mailing a properly addressed copies, by first class mail with postage prepaid, on or before **August 14, 2003**, to all parties identified on the service list provided by the California Public Utilities Commission.

Dated: August 14, 2003, at Sacramento, California.

\_\_\_\_\_  
DECLARANT  
(Service Lists attached to original only)