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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION OF ROCKY MOUNTAIN POWER SEEKING AUTHORIZATION TO SUSPEND FUTURE PROGRAM EVALUATIONS OF SCHEDULE 21, LOW INCOME WEATHERIZATION SERVICES FOR INCOME QUALIFYING CUSTOMERS	)	CASE NO. PAC-E-11-13 COMMUNITY ACTION PARTNERSHIP ASSOCIATION OF IDAHO'S COMMENTS

COMES NOW, the Community Action Partnership Association of Idaho (CAPAI) by and through its attorney of record, Brad M. Purdy, and hereby submits the following comments regarding the Application of Rocky Mountain Power (Rocky Mountain, RMP, Company) in this case pursuant to Commission Order No. 32363 issued September 27, 2011.

I. BACKGROUND

On, April 29, 2011, Rocky Mountain filed an application seeking authority to be relieved from any further obligation to conduct cost-effectiveness evaluations of its Low-Income Weatherization Assistance Program (LIWA) on the basis that the LIWA program is not cost-effective making further evaluations wasteful, and seeking a ruling that the

Commission approve LIWA as a continuing component of the Company's overall DSM portfolio.

In support of its contention, RMP included with its Application a study conducted by a third party contractor known as "The CADMUS Group, Inc." (CADMUS) which, using data input through a computer model based on program "activities for the period 2007 through 2009, purports to measure the cost-effectiveness of RMP's LIWA program. The CADMUS study proclaims that Rocky Mountain's current program is not cost-effective based on traditional evaluation methodologies and criteria. In spite of the alleged fact that LIWA is not cost-effective, Rocky Mountain requests that "the Commission acknowledge the program as an acceptable part of Rocky Mountain Power's [DSM] program portfolio, and find that it should continue." *Application at p. 4.*

In further support of its Application, RMP states: "in an effort to reduce future administrative costs associated with this program [i.e., cost of obtaining third party effectiveness evaluations] Rocky Mountain Power respectfully requests that the Idaho Public Utilities Commission remove any future obligation for program evaluations of the Low Income Weatherization Services Optional for Income Qualifying Customers Program [i.e., LIWA]." *Id.* The Company submits that although its overall portfolio of DSM resources is cost-effective, LIWA is not.

Rocky Mountain further argues that the recent increase in annual funding for the program from a total of $150,000 to $300,000 ordered by the Commission in Order No. 32196 issued on February 28, 2011 in Case No. PAC-E-10-07 (RMP's 2010 general rate case) as well as an increase in the percentage of Rocky Mountain's share of funding any

given LIWA project from a cap of 75% to 85% have exacerbated the degree to which LIWA is not cost-effective.

On June 30, 2011, the Commission issued Order No. 32284 ruling that the Company's Application would be handled under modified procedure pending the objection of any person to such procedure and invited comments filed within ninety (90) days (September 28, 2011). Pursuant to agreement of all parties, the Commission extended the comment deadline to October 28, 2011in Order No. 32363.

On June 22, 2011, CAPAI filed a Petition to Intervene in this proceeding which was granted by the Commission in Order No. 32286 issued July 1, 2011. Only Staff and CAPAI are specifically named participants to this proceeding at the present time. As will be explained below, CAPAI does not necessarily object to modified procedure but, due to the very unique nature of the Company's request and the timing in which this case is being processed, it might well be advisable to defer a final ruling on whether a technical hearing will be conducted in this case[1] until the Commission and all parties have had ample opportunity to review the nature of the comments filed in response to RMP's application. CAPAI makes a more definitive procedural proposal later in these comments.

II. CADMUS EVALUATION

The CADMUS evaluation filed in support of RMP's application is based on a "web-based" computer model. During the course of analyzing the Company's application, it became obvious that Staff and CAPAI would need access to the model

[1] IDAPA 31.01.01.021-400.

used by CADMUS to conduct its evaluation as well as specific input data to that model and the assumptions on which both the model operates and the input data was based. In addition, CAPAI submitted an extensive set of discovery requests.[2] Staff submitted discovery requests as well and an on-line "webinar" teleconference was conducted in mid-October involving Rocky Mountain, Staff, CAPAI and CAPAI's expert, Roger Colton, as well as certain CADMUS personnel familiar with the model.

The CADMUS personnel who actually performed the model runs and who interacted with RMP regarding the input data weren't all involved in the webinar resulting in a number of unanswered questions to which RMP submitted a certain degree of follow-up response, though much later than expected. It was informally agreed that a second on-line teleconference involving the same parties and possibly additional CADMUS and RMP personnel should be conducted. For reasons unknown to CAPAI, this second teleconference never occurred.

III. CAPAI'S POSITIONS

CAPAI emphasizes the magnitude of Rocky Mountain's filing which has had a profound impact on a substantial percentage of the issues CAPAI has raised since its first intervention before the Commission nearly a decade ago. In many ways, RMP's filing has become the single most important case that CAPAI has participated in. The reasons for this are several. First, if the CADMUS evaluation is legitimate and accurate and Rocky Mountain's conclusions are meritorious, the continued existence of not only that

[2] Rocky Mountain's discovery responses were supplemented on numerous occasions. Collectively, the responses are very voluminous. CAPAI will serve them on the Commission and all parties via electronic transmission.

utility's LIWA program is in serious jeopardy, but so are the low-income weatherization programs of Idaho Power and AVISTA. In fact, a study similar to that conducted by CADMUS could arguably be used to eliminate every program for every utility that is specifically directed to low-income customers.

A. Applicable Law

The most obvious reason for this is that one could argue that the Commission does not have the legal authority to approve future funding increases for low-income programs, approve the creation of new low-income programs, or even to allow for the continued existence of current low-income programs, if those programs are deemed to not be "cost-effective." It is doubtful that programs deemed not cost-effective will be deemed prudent. The Commission is, of course, a governmental agency created by the Idaho Legislature[3] and whose powers and responsibilities are largely set forth in Titles 61 and 62 of the Idaho Code, as are the obligations of public utilities. Of the many statutes contained in those titles, several are of particular importance in regard to RMP's filing.

First, regarding the duties and obligations of public utilities, Idaho Code Section 61-301states that all charges imposed by a public utility must be "just and reasonable." Idaho Code Section 61-303 provides that all rules and regulations of a utility affecting its rates and charges must be "just and reasonable" and, finally, Idaho Code Section 61-315 states that no public utility, in terms of its "rates, charges, service, facilities, or in any other respect" may grant to any customer any "preference or advantage" or subject any customer to "prejudice or disadvantage." The statute further states that "no public utility

[3] Idaho Code Section 61-201.

shall establish or maintain any unreasonable difference as to rates, charges, service, facilities or in any other respect either as between localities or as between classes of service."

CAPAI firmly believes that Rocky Mountain's LIWA program is extremely cost-effective. Furthermore, it is subject to debate whether implementing a low income-specific program that provides some form of benefit to low-income customers necessarily constitutes discrimination, advantage or preference "between localities" or "between classes" as stated in I.C. Section 61-315. Even if low-income programs are deemed subject to the anti-discrimination prohibitions of I.C. Section 61-315, CAPAI asserts that the benefits to other customers of providing low-income assistance offsets any preference given low-income customers eliminating any potential for true discrimination. Regardless, the fact remains that the costs of installing weatherization measures in the households of low-income customers are passed on to other utility customers. This is where the duties imposed by Title 61 of the Idaho Code on the Public Utilities Commission come into play.

The overarching mandate to the Commission regarding the approval of utility rates and charges is found in I.C. Section 61-502 which basically requires that the Commission examine all public utilities' rates and charges to ensure that they are not "unjust, unreasonable, discriminatory or preferential." In making this assurance, the Commission "shall determine the just, reasonable or sufficient" rates and charges of a public utility and adjust them as necessary to meet the foregoing parameters.

B. Rocky Mountain's Application Would Result in Appealable Order

When CAPAI first received notice of RMP's filing in this case and reviewed the Application, it was immediately apparent that the filing would create a tremendously awkward dilemma for the Commission, Staff and CAPAI. CAPAI is and has been for some time aware of the fact that Staff desires to have greater clarity and specificity in how to evaluate the effectiveness of low-income weatherization programs for all three major electric utilities. CAPAI's position has consistently been to agree with what it believes is Staff's position that LIWA should not be exempt from any type of effectiveness evaluation and to work collaboratively with Staff and the electric utilities to craft an evaluation methodology that is fair to all interests and that takes into consideration the highly unique characteristics of programs such as LIWA.

The dilemma created by Rocky Mountain's application is that the Company is simultaneously asking the Commission to find that LIWA is not cost-effective, but to allow it to continue to be part of the Company's overall DSM portfolio. Based on applicable law as outlined above, this places the Commission in a legally tenuous position. If the Commission approved Rocky Mountain's application as it is worded, this would arguably lead to a final order that could be reversed on appeal due to its failure to comply with anti-discrimination statutes. RMP chose what CAPAI considers a highly unusual manner in which to frame its application, effectively asking the Commission to reach a questionable ruling.

Because of the awkwardness created by Rocky Mountain's filing, and the fact that the Company had submitted what on its face was a detailed evaluation performed by an

independent third party that purportedly showed LIWA to not be cost-effective, CAPAI was placed in a very unusual and difficult position. Rocky Mountain's application alone creates the dilemma outlined above. Combining the nature of the filing with the timing and processing of the filing, as discussed below, exacerbates that dilemma.

C. CADMUS Evaluation Untimely

In this regard, and as a brief aside, it should be noted that in Rocky Mountain's 2010 general rate case, Staff noted that the Company was considerably delinquent in filing a cost-effectiveness of its LIWA program. This was true as of the issuance of Final Order No. 32196 in the 2010 general rate case, issued in February of this year. RMP was under an obligation, pursuant to a Memorandum of Understanding, executed by the Company on December 22, 2009, to file a "prudency evaluation" of its DSM programs, including LIWA. By waiting until April of this year to file its long-overdue evaluation, Rocky Mountain created a problematic procedural scenario.

D. Protracted Scheduling of Case Exacerbated Dilemma

Upon learning of RMP's filing, CAPAI began inquiring as to when the case would be noticed and under what procedure. For reasons unknown to CAPAI, the initial Notice of Application was not issued until the last day of June, more than two months after it was filed. The reason that this exacerbated the dilemma is that, as CAPAI and many others were keenly aware at the time RMP's filing was made in this case, Rocky Mountain, Idaho Power, and AVISTA were going to file general rate cases in late Spring/early summer of this year. CAPAI had firm plans to, and in fact did, intervene in all three of those rate cases. CAPAI feared that if Rocky Mountain's LIWA Application

were not quickly resolved, it would create a substantially serious problem in light of the fact that CAPAI intended to seek funding increases for all three electric utilities' LIWA programs in the general rate cases. Having a case pending that called into question the very legality of LIWA on the whole made the prospect of advocating for LIWA funding increases challenging to say the least.

Furthermore, CAPAI knew that Idaho Power and AVISTA were aware of Rocky Mountain's LIWA filing when they filed their rate cases. T the simultaneous pendency of the LIWA case made those two utilities hesitant to agree to funding increases pending resolution of the LIWA case. CAPAI had reason to believe that at least one of those two utilities intended to not propose additional LIWA funding pending the outcome of the Rocky Mountain application. In fact, none of the three utilities proposed or have thus far agreed to LIWA funding increases. CAPAI correctly assumed that there would be a "domino" effect of all this. Though CAPAI cannot divulge anything discussed during any settlement negotiations, it is obvious that the fact that the Rocky Mountain case would not be resolved until late 2011 or even sometime into next year might have caused hesitation on the part of some to support LIWA funding increases especially given the possibility that a LIWA program might ultimately be deemed not prudent.

While it might be tempting to dismiss this dire scenario as overreaction, it has proven out so far. The comment period in this case was set for September 28, 2011. Although all parties to this case supported extending the comment deadline by one month due to the complexity and inaccessibility of the CADMUS web-based model, Staff noticed up settlement negotiations for all three pending electric rate cases weeks if not

months prior to the original September 28 deadline. This forced CAPAI to enter settlement negotiations without any sense of whether the Commission would ultimately deem one of Idaho's three LIWA programs to be prudent. CAPAI has already pre-filed testimony in the Idaho Power case and will soon file in the Rocky Mountain rate case.

Although CAPAI did sign the settlement agreement with AVISTA, it did so based on the fact that AVISTA was funding its LIWA program at a rate more than 200%[4] greater than Idaho Power and roughly 25% greater than Rocky Mountain. This basis for CAPAI's agreement to settle is set forth in the testimony of Teri Ottens (later converted to comments) submitted in the AVISTA case. But, as a quick review of the recent settlement agreements executed by certain parties in the Idaho Power and Rocky Mountain Power cases makes obvious, CAPAI declined to join in those settlements and intends to fully proceed to hearing on numerous issues including LIWA funding. It is no stretch of logic to contend that the late filing of Rocky Mountain's application and the somewhat protracted scheduling of this case caused the procedural conundrum described above. This scenario has also thrown CAPAI's primary objective (LIWA) into a far more contentious posture.

It is worth noting that although CAPAI often weighs in on numerous issues not related specifically to low-income weatherization, LIWA programs are currently the meat of CAPAI's typical involvement in proceedings before this Commission. The Commission is well aware that CAPAI continues to seek a form of bill assistance similar to that allowed in most if not all other western state and in many states nationwide. Until

[4] Idaho Power's funding alone must be increased by $1.5 million to equal AVISTA funding on a per capita basis.

then, CAPAI continues to do everything within its limited resources to advance the interests of utilities' low-income customers and, in the process, provide benefits to all ratepayers.

Furthermore, as evidenced by the testimony of Teri Ottens currently filed in the Idaho Power general rate case, CAPAI is addressing numerous issues that to some extent affect all customers, particularly the residential class. It would not be unreasonable to state that CAPAI is currently the closest thing that the state of Idaho has to a consumer interest energy advocate. CAPAI makes this assertion with due humility but in recognition of the simple truth. Thus, the unfortunate nature of Rocky Mountain's filing, the timing of that filing, the timing of scheduling the case and the reaction of other parties to the filing have made what was already a critical case to CAPAI even more so.

IV. CAPAI'S RESPONSE TO CADMUS STUDY

Realizing the significance and possible implications of the CADMUS study, CAPAI retained an expert consultant highly trained and specialized in its ability to evaluate the effectiveness of public utility low-income weatherization programs. CAPAI's expert in this case is Mr. Roger Colton of the firm "Fisher, Sheehan & Colton, Public Finance and General Economics." Mr. Colton's resume is attached hereto as Exhibit "A," establishing his expertise in this field.

Also attached hereto as Exhibit "B" is Mr. Colton's analysis of the CADMUS study. Prior to preparing his analysis, Mr. Colton was provided all relevant materials in this case and participated in the on-line teleconference with RMP, CADMUS, Staff and

CAPAI and, consequently, has more than ample factual knowledge and basis for his opinions.

Mr. Colton's analysis provides, in explicit detail, a listing of the many aspects of the CADMUS study that constitute "fatal flaws" rendering the conclusions derived from the study highly inaccurate and misleading. These flaws involve both the manner in which the web-based model utilized by CADMUS was used as well as the data that were input through the model, or lack of data. Mr. Colton explains with precision how these flaws affect the CADMUS study's conclusions and the cumulative effect they have on the ultimate conclusion of whether Rocky Mountain's LIWA program is cost-effective. As Mr. Colton notes, even if the highly inaccurate results produced by CADMUS, with one or two adjustments, were accepted at face value, the LIWA program is still cost-effective within an appropriate margin of error. The correction of the many flaws contained in the study all increase the program's cost-effectiveness. When combined, there can be no doubt that the program is cost-effective.

A noteworthy point is that, while the societal benefits produced by programs such as LIWA are impossible to deny (e.g., reductions in homelessness and crime, improved living conditions for the poor, etc.), no attempt is made to quantify them by any party to this proceeding thus far. The fact is that the program provides tangible economic benefits to the entire Rocky Mountain system and to all customers that more than offset the costs of the program. Rocky Mountain's contention that the recent $150,000 increase in funding diminishes cost-effectiveness rests on the presumption that the program is a money-loser. If, as Mr. Colton concludes, the program provides net benefits, then

additional funding has the opposite effect. This truism applies equally to the 10% increase in RMP's funding sharing percentage of each LIWA project.

Regarding Rocky Mountain's request to be relieved of its obligation to evaluate LIWA CAPAI, though confident that the program is very cost-effective, agrees with Staff's position that Rocky Mountain's request be denied. There is no logical reason to exempt a low-income weatherization program from any and all analysis, especially considering that program costs are borne by ratepayers other than program participants. CAPAI submits, however, that LIWA is a DSM program unique from all others. Consequently, many of the program benefits fall outside the traditional DSM cost-benefit evaluation methodologies. Examples of such benefits include reduced arrearages, disconnections, and bad debt write-offs.[5] Though the CADMUS study fails to properly calculate and value these benefits, it appears that even Rocky Mountain does not dispute that they should legitimately be included in evaluating LIWA. Thus, any final conclusion regarding the cost-effectiveness of a given LIWA program should include the type of valuation/calculation of these "non-energy" benefits as set forth in Mr. Colton's analysis.

Finally, regarding Rocky Mountain's request that it be allowed to forgo any future evaluations of LIWA due to the cost of paying a third party contractor to perform independent evaluations, CAPAI notes that the CADMUS study does not seem to include the costs RMP paid to CADMUS. CAPAI was not a party to the proceeding in which the various utilities agreed in a Memorandum of Understanding to conduct cost-effectiveness evaluations of their DSM programs using independent contractors. Consequently,

[5] Referred to by CADMUS as "non-energy" benefits.

CAPAI does not take a particular position on whether the MOU should be modified for LIWA. It seems somewhat intuitive, however, that once an acceptable methodology is agreed upon, the costs of evaluations should be less in subsequent years. Regardless, CAPAI points out that it is difficult to know the impact that the cost of such evaluations has on cost-effectiveness if that cost is not identified by the Company.

To summarize, CAPAI agrees with Rocky Mountain's request that LIWA continue to be a part of the Company's DSM portfolio, but disagrees that LIWA should be entirely exempt from any type of evaluation.

V. CAPAI'S PROCEDURAL RECOMMENDATIONS

Because CAPAI has invested considerable resources in participating in this case and, hopefully, providing Staff with a solid starting point from which to derive an acceptable cost-effectiveness evaluation methodology, it would be counter-intuitive to start entirely anew. As Mr. Colton posits in his analysis, there is nothing inherently wrong with the web-based model used by CADMUS. It was the manner in which that model was used and the data input that must be corrected or rejected. If Mr. Colton's critiques and suggestions were followed, it would not involve much additional work to set up the proper methodology.

CAPAI realizes that Rocky Mountain, and perhaps Staff, will want to respond to Mr. Colton's analysis and that such a response takes time, especially under the current caseload all parties are dealing with. What CAPAI believes critical is that the flawed CADMUS study not be used as a basis for any party, including Staff, to not support increases to LIWA funding or to allow any backsliding from the efforts made by CAPAI

in this case. CAPAI believes that the failure to timely resolve RMP's application in this case has caused Staff and other parties to not support the LIWA funding increases that CAPAI is currently seeking in the two remaining electric rate cases. Just this year, the Commission approved a funding increase for Rocky Mountain's LIWA program in the 2010 rate case that exceeded the amount of increase sought by CAPAI. The Commission based its ruling on Staff's proposed higher amount.[6] It would be unfortunate to allow what has clearly been demonstrated to be a fatally flawed study to stop otherwise legitimate funding increase requests.

LIWA funding increases have been found prudent and approved by this Commission for all three electric utilities for the better part of the past decade. CAPAI has consistently proven that there continues to be a substantial gap between the need for LIWA and available resources creating a large backlog and impossibly long waiting lines for eligible LIWA customers. CAPAI assumes that the Commission has taken this fact into account over the past years when it has approved LIWA funding increases and program design changes. Though CAPAI acknowledges that the Commission has been very supportive of LIWA, the three programs in Idaho are not exactly flush with money. The gap between need and resources is widening as economic conditions continue to worsen. CAPAI recommends, therefore, that the Commission approve Rocky Mountain's request that LIWA continue to be part of the RMP DSM portfolio, but deny the request to cease further evaluations, leaving open the extent and manner in which future evaluations should be conducted.

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[6] Case No. PAC-E-11-13, *supra.*

In order to prevent this case from serving as a reason to not support or approve future LIWA funding increases for all utilities, CAPAI submits that a final resolution should be made by the Commission in the near future. Pushing this case into collaborative workshops to be conducted sometime in the future would create continued uncertainty and unnecessarily stall much needed funding increases, including the $1.5 million by which Idaho Power must increase its funding to equal AVISTA on a per capita basis. Thus, CAPAI proposes that a reasonable period of time be established for Staff and Rocky Mountain to respond to CAPAI's position. After receiving such responses, the Commission could then issue a final order in this matter.

VI. CONCLUSION

Rocky Mountain's application should be granted in part, and denied in part as set forth above. The CADMUS study is obviously inaccurate and misleading. Mr. Colton's analysis demonstrates that Rocky Mountain's LIWA program is clearly cost-effective and prudent. Procedurally, the Commission should set a deadline for responses to CAPAI's position and then make a determination finally resolving the case so that the CAP agencies who implement LIWA can continue to provide vital services to the poor that result in benefits to all customers. Finally, Staff is entitled to some definitive guidance on what it should reasonably expect from the utilities in terms of effectiveness evaluations in the future.

DATED, this 28th day of October, 2011.

Brad M. Purdy

CERTIFICATE OF SERVICE

I, the undersigned, hereby certify that on the 28th day of October, 2011, I served a copy of the foregoing document on the following by electronic transmission.

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DATED, this 28th day of October, 2011

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EXHIBIT A

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EDUCATION:

J.D. (Order of the Coif), University of Florida (1981)

M.A. (Economics), McGregor School, Antioch University (1993)

B.A. Iowa State University (1975) (journalism, political science, speech)

PROFESSIONAL EXPERIENCE:

Fisher, Sheehan and Colton, Public Finance and General Economics: 1985 - present.

As a co-founder of this economics consulting partnership, Colton provides services in a variety of areas, including: regulatory economics, poverty law and economics, public benefits, fair housing, community development, energy efficiency, utility law and economics (energy, telecommunications, water/sewer), government budgeting, and planning and zoning.

Colton has testified in state and federal courts in the United States and Canada, as well as before regulatory and legislative bodies in more than three dozen states. He is particularly noted for creative program design and implementation within tight budget constraints.

National Consumer Law Center (NCLC): 1986 - 1994

As a staff attorney with NCLC, Colton worked on low-income energy and utility issues. He pioneered cost-justifications for low-income affordable energy rates, as well as developing models to quantify the non-energy benefits (*e.g.*, reduced credit and collection costs, reduced working capital) of low-income energy efficiency. He designed and implemented low-income affordable rate and fuel assistance programs across the country. Colton was charged with developing new practical and theoretical underpinnings for solutions to low-income energy problems.

Community Action Research Group (CARG): 1981 - 1985

As staff attorney for this non-profit research and consulting organization, Colton worked primarily on energy and utility issues. He provided legal representation to low-income persons on public utility issues; provided legal and technical assistance to consumer and labor organizations; and provided legal and technical assistance to a variety of state and local governments nationwide on natural gas, electric, and telecommunications issues. He routinely appeared as an expert witness before regulatory agencies and legislative committees regarding energy and telecommunications issues.

PROFESSIONAL AFFILIATIONS:

Coordinator:	BelmontBudget.org (Belmont's Community Budget Forum)
Coordinator:	Belmont Affordable Shelter Fund (BASF)
Member:	Board of Directors, Belmont Housing Trust, Inc.
Chair:	Housing Work Group, Belmont (MA) Comprehensive Planning Process
Past Chair:	Waverley Square Fire Station Re-use Study Committee (Belmont MA)
Past Member:	Belmont (MA) Energy and Facilities Work Group
Past Member:	Belmont (MA) Uplands Advisory Committee
Past Member:	Advisory Board: Fair Housing Center of Greater Boston.
Past Member:	Fair Housing Committee, Town of Belmont (MA)
Past Member:	Aggregation Advisory Committee, New York State Energy Research and Development Authority.
Past Member:	Board of Directors, Vermont Energy Investment Corporation.
Past Member:	Board of Directors, National Fuel Funds Network
Past Member:	National Advisory Committee, U.S. Department of Health and Human Services, Administration for Children and Families, Performance Goals for Low-Income Home Energy Assistance.
Past Member:	Editorial Advisory Board, International Library, *Public Utility Law Anthology*.
Past Member:	ASHRAE Guidelines Committee, GPC-8, *Energy Cost Allocation of Comfort HVAC Systems for Multiple Occupancy Buildings*
Past Member:	National Advisory Committee, U.S. Department of Housing and Urban Development, Calculation of Utility Allowances for Public Housing.
Past Member:	National Advisory Board: Energy Financing Alternatives for Subsidized Housing, New York State Energy Research and Development Authority.

PROFESSIONAL ASSOCIATIONS:

National Association of Housing and Redevelopment Officials (NAHRO)
Association for Enterprise Opportunity (AEO)
Iowa State Bar Association
Energy Bar Association
Association for Institutional Thought (AFIT)
Association for Evolutionary Economics (AEE)

Society for the Study of Social Problems (SSSO)
International Society for Policy Studies
Association for Social Economics

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CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	I
I/M/O Louisville Gas & Electric Prepayment Meters	Witness	Kentucky Community Action Association	Low-income energy	Kentucky	
I/M/O NICOR Budget Billing Plan Interest Charge	Witness	Cook County State's Attorney	Rate Design	Illinois	
I/M/O Rules Re. Payment Plans for High Natural Gas Prices	Witness	Cook County State's Attorney	Budget Billing Plans	Illinois	
I/M/O Philadelphia Water Department	Witness	Office of Public Advocate	Credit and collections	Philadelphia	
I/M/O Missouri Gas Energy	Witness	Office of Peoples Counsel	Low-income rate relief	Missouri	
I/M/O Bell Atlantic--New Jersey Alternative Regulation	Witness	Division of Ratepayer Advocate	Telecommunications universal service	New Jersey	
I/M/O T.W. Phillips Gas and Oil Co.	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	
I/M/O Peoples Natural Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	
I/M/O UGI Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	
I/M/O PFG Gas Company	Witness	Office of Consumer Advocate	Ratemaking of universal service costs.	Pennsylvania	
Armstrong v. Gallia Metropolitan Housing Authority	Witness	Equal Justice Foundation	Public housing utility allowances	Ohio	
I/M/O Bell Atlantic--New Jersey Alternative Regulation	Witness	Division of Ratepayer Advocate	Telecommunications universal service	New Jersey	
I/M/O Universal Service Fund for Gas and Electric Utilities	Witness	Division of Ratepayer Advocate	Design and funding of low-income programs	New Jersey	
I/M/O Consolidated Edison Merger with Northeast Utilities	Witness	Save Our Homes Organization	Merger impacts on low-income	New Hampshire	
I/M/O UtiliCorp Merger with St. Joseph Light & Power	Witness	Missouri Dept. of Natural Resources	Merger impacts on low-income	Missouri	
I/M/O UtiliCorp Merger with Empire District Electric	Witness	Missouri Dept. of Natural Resources	Merger impacts on low-income	Missouri	
I/M/O PacifiCorp	Witness	The Opportunity Council	Low-income energy affordability	Washington	
I/M/O Public Service Co. of Colorado	Witness	Colorado Energy Assistance Foundation	Natural gas rate design	Colorado	
I/M/O Avista Energy Corp.	Witness	Spokane Neighborhood Action Program	Low-income energy affordability	Washington	
I/M/O TW Phillips Energy Co.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	
I/M/O PECO Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	
I/M/O National Fuel Gas Distribution Corp.	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	
I/M/O PFG Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	
I/M/O UGI Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	
Re. PSCO/NSP Merger	Witness	Colorado Energy Assistance Foundation	Merger impacts on low-income	Colorado	9

CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
I/M/O Peoples Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O Columbia Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O PG Energy Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
I/M/O Equitable Gas Company	Witness	Office of Consumer Advocate	Universal service	Pennsylvania	99
Allerruzzo v. Klarchek	Witness	Barlow Allerruzzo	Mobile home fees and sales	Illinois	99
I/M/O Restructuring New Jersey's Natural Gas Industry	Witness	Division of Ratepayer Advocate	Universal service	Pennsylvania	99
I/M/O Bell Atlantic Local Competition	Witness	Public Utility Law Project	Lifeline telecommunications rates	New Jersey	99
I/M/O Merger Application for SBC and Ameritech Ohio	Witness	Edgemont Neighborhood Association	Merger impacts on low-income consumers	Ohio	98 - 99
Davis v. American General Finnce	Witness	Thomas Davis	Damages in "loan flipping" case	Ohio	98 - 99
Griffin v. Associates Financial Service Corp.	Witness	Earlie Griffin	Damages in "loan flipping" case	Ohio	98 - 99
I/M/O Baltimore Gas and Electric Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Delmarva Power and Light Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Potomac Electric Power Co. Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
I/M/O Potomac Edison Restructuring Plan	Witness	Maryland Office of Peoples Counsel	Consumer protection/basic generation service	Maryland	98 - 99
VMHOA v. LaPierre	Witness	Vermont Mobile Home Owners Association	Mobile home tying	Vermont	98
Re. Restructuring Plan of Virginia Electric Power	Witness	VMH Energy Services, Inc.	Consumer protection/basic generation service	Virginia	98
Mackey v. Spring Lake Mobile Home Estates	Witness	Timothy Mackey	Mobile home fees	State ct: Illinois	98
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Re. New Hampshire Electric Restructuring	Witness	NH Comm. Action Ass'n	Wires charge	New Hampshire	97
Re. Natural Gas Competition in Wisconsin	Witness	Wisconsin Community Action Association	Universal service	Wisconsin	96
Re. Baltimore Gas and Electric Merger	Witness	Maryland Office of Peoples Counsel	Low-income issues	Maryland	96
Re. Northern States Power Merger	Witness	Energy Cents Coalition	Low-income issues	Minnesota	96
Re. Public Service Co. of Colorado Merger	Witness	Colorado Energy Assistance Foundation	Low-income issues	Colorado	96
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Re. FERC Merger Guidelines	Witness	National Coalition of Low-Income Groups	Low-income interests in mergers	Washington D.C.	96
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Re. Theresa Mahaulu	Witness	Theresa Mahaulu	Damages from lack of homestead	Honolulu	95
Re. Joseph Ching, Sr.	Witness	Re. Joseph Ching, Sr.	Damages from lack of homestead	Honolulu	95
Joseph Keaulana, Jr.	Witness	Joseph Keaulana, Jr.	Damages from lack of homestead	Honolulu	95
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Re. PGW Customer Service Tariff Revisions	Witness	Philadelphia Public Advocate	Credit and collection	Philadelphia	95
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Penn Bell Telephone Co.	Witness	Penn. Utility Law Project	Low-income phone rates	Pennsylvania	93
Philadelphia Gas Works	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	93
Central Maine Power Co.	Witness	Maine Assn Ind. Neighborhoods	Low-income rates	Maine	92
New England Telephone Company	Witness	Mass Attorney General	Low-income phone rates	Massachusetts	92
Philadelphia Gas Co.	Witness	Philadelphia Public Advocate	Low-income DSM	Philadelphia	92
Philadelphia Water Dept.	Witness	Philadelphia Public Advocate	Low-income rates	Philadelphia	92
Public Service Co. of Colorado	Witness	Land and Water Fund	Low-income DSM	Colorado	92
Sierra Pacific Power Co.	Witness	Washoe Legal Services	Low-income DSM	Nevada	92
Consumers Power Co.	Witness	Michigan Legal Services	Low-income rates	Michigan	92
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Union Heat Light & Power	Witness	Kentucky Legal Services (KLS)	Energy Assurance Program	Kentucky	90
Philadelphia Water	Witness	Philadelphia Public Advocate (PPA)	Controlling accounts receivable	Philadelphia	90
Philadelphia Gas Works	Witness	PPA	Controlling accounts receivable	Philadelphia	90
Mississippi Power Co.	Witness	Southeast Mississippi Legal Services Corp.	Formula ratemaking	Mississippi	90
Kentucky Power & Light	Witness	KLS	Energy Assurance Program	Kentucky	90
Philadelphia Electric Co.	Witness	PPA	Low-income rate program	Philadelphia	90
Montana Power Co.	Witness	Montana Ass'n of Human Res. Council Directors	Low-income rate proposals	Montana	90
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CASE NAME	ROLE	CLIENT NAME	TOPIC	JURIS.	DATE
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Southwestern Bell Telephone Co.	Witness	SEMLSC	Formula ratemaking	Mississippi	90
Generic Investigation into Low-income Programs	Witness	Vermont State Department of Public Service	Low-income rate proposals	Vermont	89
Generic Investigation into Dmnd Side Management Measures	Consultant	Vermont DPS	Low-income conservation programs	Vermont	89
National Fuel Gas	Witness	Office of Consumer Advocate	Low-income fuel funds	Pennsylvania	89
Montana Power Co.	Witness	Human Resource Develop. Council District XI	Low-income conservation	Montana	88
Washington Water Power Co.	Witness	Idaho Legal Service Corp.	Rate base, rate design, cost-allocations	Idaho	88

EXHIBIT B

Assessing the Cost-Effectiveness of Low-Income Weatherization in Idaho:

A Review of the Rocky Mountain Power Evaluation

Prepared by Roger Colton

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Public Finance and General Economics

On behalf of the Community Action Partnership Association of Idaho

Presented to:
Idaho Public Utilities Commission
Case No. PAC-E-11-13

Presented by:
Community Action Partnership Association of Idaho
(CAPAI)
Boise, Idaho

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Introduction: Interest of Community Action Partnership Association of Idaho (CAPAI)

These comments are presented on behalf of the Community Action Partnership Association of Idaho (CAPAI). CAPAI is a private, non-profit association dedicated to fighting the causes and conditions of poverty in Idaho. Established in 1969, CAPAI is a membership organization with eight members that consist of six community action partnership organizations: Community Action Partnership (CAP), Western Idaho Community Action Partnership (WICAP), El-Ada Community Action Partnership (El-Ada), South Central Community Action Partnership (SCCAP), SouthEastern Idaho Community Action Agency (SEICAA), Eastern Idaho Community Action Partnership (EICAP), and two special purpose agencies, the Community Council of Idaho (CCOI – formerly Idaho Migrant Council) and CCOA-Aging, Weatherization and Human Services (CCOA).

CAPAI is the association of local weatherization agencies delivering the utility low-income weatherization programs in Idaho, in addit ion to delivering the U.S. Department of Energy's Weatherization Assistance Program (WAP) services as supplemented by funding through the Low-Income Home Energy Assistance Program (LIHEAP) transfers to weatherization.

Part 1: The Cadmus Study is an Inappropriate Basis for Decisionmaking.

These comments provide the assessment of the Community Action Partnership of Idaho (CAPAI) of the Cadmus study regarding the "cost-effectiveness" of the low-income weatherization program funded in part by Rocky Mountain Power Company (Company or RMP). CAPAI finds that the Cadmus cost-effectiveness study has serious fatal flaws throughout its analysis. These flaws make the Cadmus study an inappropriate basis for decision-making. At the least, the flaws that CAPAI identifies should lead to the conclusion that no basis for decision-making has been presented to the Commission. It is possible, however, given the consistent direction of the impact of the Cadmus flaws, for the Commission to find that had the flaws not been present, the Cadmus study would almost certainly have reported that the Rocky Mountain Power low-income weatherization program meets standard benefit-cost tests.

The Cadmus Study Understates Savings in Weatherized Homes

The Cadmus study determines the net savings of the weatherized population by comparing the changes in the participant population before and after weatherization to the changes in the non-participant population in the same time period. Thus, for example:

- If the weatherized population reduced consumption by 18% and the non-participant population reduced consumption by 6% during the same time period, the net reduction of the participant population[1] would be 12% (18% participant - 6% non-participant = 12% net).
- If the weatherized population reduced consumption by 18% and the non-participant population *increased* consumption by 3%, the net reduction of the participant population would be 21% (18% participant – (-3%) non-participant = 21% net).[2]

[1] The phrases "weatherized population" and "participant population" are intended to be co-terminous, unless specifically noted otherwise.

[2] An increase in consumption would be a *negative* savings.

Several assumptions underlie the Cadmus study:

1. The first assumption in this type of analysis is that, given the fact that both the participant population and non-participant population are subject to the same external forces in the same time period, those external forces will operate equally on both populations. Accordingly, the only difference that exists between the two populations will be the presence (or absence) of the weatherization measures installed through the program.

2. A further assumption underlying this analysis is that the difference between the two populations is constant over time. The savings for a single period is calculated and used for each year over the course of the 25-year study period.[3]

Given these assumptions, the difference in consumption, therefore, is attributable to the program and will continue over the life of the weatherization measures. We know, however, that these assumptions are not the case in the Rocky Mountain Power situation. We know further that the participant and non-participant populations are *not* similar but for the presence (or absence) of weatherization. We know finally that the differences will overstate the savings of the non-participant population and thus understate the weatherization savings of the weatherization population.[4]

The Differential Impacts of the Economic Downturn and Rate Increases

During the study period for the Cadmus study, the Rocky Mountain Power service territory experienced two phenomena that would have affected the participant and non-participant populations: (1) a substantial economic downturn; and (2) a significant increase in the price of electricity. Cadmus reports that:

> . . .the savings observed in the non-participant sample may be attributed to a few other factors.
>
> - Between 2006 and 2009 residential rates in Idaho increased by 44 percent due to the reduction of the Bonneville Residential Exchange Credit.
>
> - Effects of the U.S. economic recession are present in the post-installation period of this analysis.

Cadmus refers to the savings occurring irrespective of the weatherization measures as the "naturally occurring savings." (Cadmus, at ES-3).

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[3] The 25-year period is the assumed life of the weatherization measures.

[4] To the extent that the non-participant savings are over-stated, the net difference between the two populations is understated. In the illustration above, for example, if the participant savings was 18% and the non-participant savings was 3% (rather than 6%), the net savings would have been 15%, not 12% (18% participant – 3% non-participant = 15% net).

Cadmus notes that while "these factors would likely also affect the participant population. . .the impact of these on their household would have been less than for the [non-]participating population." (Cadmus, at 18).[5] Accordingly, one of the basic assumptions underlying the Cadmus savings estimate –that in the absence of the weatherization measures, all external factors would operate equally on the participant and non-participant population—is not valid for the Cadmus weatherization study. Moreover, Cadmus acknowledges that it made no effort to adjust for the disproportionate impact that the rate increases and economic recession would have had in generating usage reductions for the non-participant population. (CAPAI-1-26).

Because of the disproportionate usage reduction impact of the economic recession and rate increases on the non-participant population, the non-participant savings would be over-stated. As a result, the net participant savings attributable to the weatherization measures would be under-stated.

The Higher Income is Unaccounted for in the Non-Participant Population

The Cadmus study fails to account for the fact that its non-participant population was a higher income population than the Weatherization population, with a corresponding greater "naturally occurring" usage reduction that would not also be present in the participant population. The participant population for the Rocky Mountain Power weatherization program is income-qualified at 150% of the Federal Poverty Level. (Cadmus, at note 7, page 9). In contrast, the nonparticipant population was identified based on their receipt of energy assistance on their Rocky Mountain Power bills. (Cadmus, at 13). The two populations, however, are not identical populations. Rather than an income-eligibility of 150% of Federal Poverty Level, the federal fuel assistance program (called the Low-Income Home Energy Assistance Program, or LIHEAP) sets income eligibility at 60% of median income in Idaho.

Cadmus simply "assumed" that "customers receiving energy assistance were valid proxies" for the weatherization population. (CAPAI-1-9). Cadmus deemed it to be "unduly burdensome" to determine the number of nonparticipants in either the usage study or the payment study who would received energy assistance, but who would ***not*** have been income-qualified to participate in the Weatherization program. (CAPAI-1-11).

The problem with the Cadmus approach is that the external factors contributing to usage reduction between 2007 and 2010 would not have operated on the two populations in the same fashion. Persons in the higher "low-income" range (greater than 150% of Federal Poverty Level but at or below 60% of median income) during this time period, for example, would have been more likely to have faced unemployment and reductions in wage hours; they would have thus seen a more substantial reduction in income than the population with income at or below 150% of Poverty Level. Data from the Current Population Survey (CPS), for example, shows that between 2007 and 2010, unemployment increased by

[5] While the Cadmus report states that the impacts would have been greater for the *participating* population, it subsequently acknowledged a typographic error and the intent to state that the impact of the price increases and economic recession on the savings for the ***non-participant*** population would have been greater than on the participant population. (CAPAI-1-23, CAPAI-1-24).

150% (from 9,000 to 23,000 persons) in the population with income at or below 150% of Poverty Level. In contrast, within the population with income between 200% and 250% of Poverty, unemployment increased by 250% (from 2,000 to 7,000 households). The same impacts are found in the percentage of persons who dropped out of the labor force altogether. Within the population below 150% of Poverty Level, the number of persons who dropped out of the labor force completely increased by less than 20% (from 212,000 to 252,000). In contrast, within the population with income between 200% and 250% of Poverty Level, the number of persons dropping out of the labor force between 2007 and 2010 increased by more than 30% (from 79,000 to 103,000).

The Cadmus "assumption" that the two populations were equivalent, and would react to external factors in the same fashion absent weatherization, can be seen to be in error. Cadmus used the energy assistance population and the weatherization population as equivalent populations when they are not. The non-participant population used by Cadmus is, in other words, more likely to have made usage reductions due to their loss of income. These usage reductions would be disproportionately high and they would be temporary. As a result, the Cadmus study would over-state the "naturally occurring" savings of the non-participant population and thus under-state the net savings attributable to Weatherization, both immediately and in the long-term.

The Relative Non-Participant Savings are Likely Over-Stated

The process for obtaining savings for the participant and non-participant population results in a nearly certain under-statement of the net savings attributable to the weatherization program. The Rocky Mountain Power weatherization program treats both homes with electric heating and homes without electric heating. Cadmus readily concedes that "not all homes completed with Rocky Mountain Power's funding are electrically heated. Funding for insulation measures requires a home [to] be electrically heated[;] however funding is also available in non-electrically heated homes for other energy savings measures. . ." (CAPAI-1-5).

The Cadmus comparison leading to the estimated net energy savings depends for its validity on the assumption that the participant and non-participant groups are otherwise comparable but for the presence (or absence) of the weatherization investments. Cadmus freely concedes that it does not know the extent to which the presence of electric heating exists in the participant population. According to its data request responses, "the Company is not able to provide accurate data on the specific number of participant and non-participant homes that are heated electrically versus non-electrically." (CAPAI-1-6). The Company cannot separate *any* of its analyses disaggregated by electric heating and non-heating homes, including the estimation of adjusted gross savings (Table 10); the pre- and post-savings (Table 11); the payment amounts (Table 16); the reconnection summary (Table 17); or the arrearage summary (Table 18). (CAPAI-1-7(a) – (f)). Nor can the Company separate any of its cost-benefit analyses (Tables 21, 22, 23) disaggregated by whether a home is electrically-heated or not. (CAPAI-1-7(g) - (i)).

Cadmus reports, however, that, according to the agencies delivering weatherization services using Rocky Mountain Power funding, "between 35 and 48 percent of homes served are electrically heated, the remainder being heated with natural gas, heating oil, or other fuels." (Cadmus, at 8).[6]

One problem with the Cadmus analysis, therefore, is that it is likely that the non-participant population used for its analysis consisted of almost entirely electrically-heated homes. In its calculation of net savings, the Cadmus analysis thus compares the savings in electrically-heated non-participant homes against the savings in a melding of participant homes heating with electricity and with other fuels.

The criterion used for establishing income-eligibility for the non-participant population was whether the household received "energy assistance" posted to the Rocky Mountain Power account. (Cadmus, at 13 ["The nonparticipant population was identified based on their receipt of energy assistance on their Rocky Mountain Power bill. . ."]). Cadmus did not seek to determine whether the "energy assistance" used to establish the non-participant population involved the receipt of LIHEAP basic cash grants, LIHEAP "crisis" grants, or both. (CAPAI-1-10).

The problem with this approach is that, in Idaho, basic energy assistance grants are only provided for primary heating service; crisis grants can be obtained for either primary heating or for electricity (when not used for heating). If, therefore, the "energy assistance" used to establish income eligibility for the nonparticipant population was a basic cash grant –this is likely since only 4% of Idaho's total LIHEAP allocation is used for funding crisis assistance—the non-participant population would consist only of households using electricity as their primary heating source.[7]

It would be expected that gross savings accruing in a population comprised of a mix of electric and non-electric heating homes would be substantially different from, and smaller than, the all-electric savings found in the non-participant population. It was unfortunate, and a critical analytic mistake, for the Cadmus study to use "energy assistance" posted to Rocky Mountain Power accounts as the surrogate for weatherization eligibility while determining neither the mix of electric heating and non-heating accounts in the weatherization population nor the mix of basic cash and crisis grants in the non-participant population.

[6] While the response to the data request may seem to be inconsistent with this statement in the Cadmus report, it need not necessarily be so. The weatherization agencies may know that 35% - 48% of all weatherized homes heat with electricity, without Cadmus knowing the extent to which, if at all, the specific participant homes selected for study were amongst that electric-heating population.

[7] The likelihood of a randomly selected household being a Crisis recipient is, in fact, even lower than 4%. While the average LIHEAP cash benefit is $355, Crisis benefits are more than twice as high ($750). Since the Crisis benefit is higher than the LIHEAP cash benefit, the proportion of total customers receiving Crisis will be lower than the proportion of total dollars devoted to Crisis benefits.

The Lifetime Non-Participant Savings are Overstated

The Cadmus study calculated a cost-benefit analysis in its study by deriving a net energy savings for the participant population in the manner described above for a single year (1,308 kWh) and using that one-year savings as a constant over a 25-year planning horizon. (Cadmus, at 28). The "naturally occurring savings" in the participant and non-participant populations, in other words, are assumed to remain constant (or at least remain constant relative to each other as between the participant and non-participant populations) over the course of the 25-year study period.

We know, however, and Cadmus acknowledges, that this is not the case. Instead, the types of savings attributable to the economic downturn and to the price increases are not likely to persist over time. Cadmus was asked that: "assuming usage decreases occurred due to the impact of the 44% rate increase and economic recession, please compare the persistence of those usage reductions to the persistence of the savings generated by the weatherization measures installed through the program." Cadmus replied: "It is generally assumed that behavioral changes (such as turning off lights that are not in use) are not as persistent as physical changes (such as adding insulation or replacing an incandescent bulb with a compact fluorescent light)." (CAPAI-1-27).

Given that the savings in the non-participant population were likely to degrade (i.e., fail to "persist" for as long as the "physical changes" installed by the weatherization program), compounded by the disproportionate impact that the recession and price hikes had on non-participants, it was error for Cadmus to use the first year non-participant savings as the basis upon which to calculate the expected *lifetime* net savings attributable to the weatherization measures. The net difference in savings between the participant and non-participant populations would grow over time as the non-participant savings degraded. Using the first year savings would, however, take the non-participant savings at their highest point and impute those artificially high savings over the full 25 years of the study period.

Cadmus acknowledges that it made no effort to quantify and account for the lack of persistence in the savings in the non-participant population in its savings analysis, its payment analysis, or its cost-benefit analysis. (CAPAI-1-28). As a result, the lifetime net savings attributable to the weatherization program are understated.[8]

Usage Reduction due to Shutoffs is not "Naturally Occurring" Savings.

One of the primary assumptions underlying the Cadmus cost-benefit study is that the participant and non-participant populations are comparable, but for the delivery of weatherization services to the participant population. This assumption leads Cadmus to attribute certain usage reductions in the non-participant population to "naturally occurring savings" that inappropriately reduce the "net savings" attributable to the weatherization measures. Calling it a "quasi-experimental" research design, Cadmus explains that its:

[8] This problem, too, would affect all calculations of changes in arrearages and/or payments.

> . . .approach consists of comparing the changes in pre- and post-energy consumption between participants and a comparison group of customers who, though eligible, did not participate in the program. By accounting for non-program-related factors that can affect energy use from the pre- to the post-program periods, this method can provide estimates of the 'net' program impacts.

(Cadmus, at 16). Problems arise when the analysis does not appropriately account for ***program-related*** factors that can affect energy use from the pre- to the post-installation periods. Under the circumstances of the Rocky Mountain Power study, this failure leads Cadmus to over-state the "savings" of the non-participant population and, as a result, to under-state the net savings of the weatherization program.

Cadmus treats the participant and non-participant populations as though they were the same even though the two populations had distinctly different shutoff characteristics. Cadmus reports that participants had 26% fewer reconnections and 13% fewer number of sites with one or more reconnections than did the non-participant population. It is the converse which is more important, however. Non-participants had 26% ***more*** disconnections and 13% ***more*** sites with a disconnection than did the participant population. This difference in the two populations would, of course, affect the usage characteristics of the two populations.

Cadmus, however, does not account for the higher number of disconnects in its usage analysis. Cadmus reports that virtually all disconnected accounts were both in the payment and consumption analysis. "Only 3% of all accounts with disconnects were associated with sites that had fewer than 11 months of billing or less than 330 billing days, and may have been dropped." (CAPAI-1-43).

The disconnection of service does not, for the most part, affect the number of billing days by a customer. Anyone who is disconnected and remains off the system for five or fewer days is considered to be a continuous active customer. (CAPAI-1-17). If someone is disconnected on June 10 and reconnected on or before June 15 that customer is deemed to have been on the system for all billing days within the month. (CAPAI-1-17).

Days on which service is disconnected, of course, generate no consumption for the disconnected customer. This reduced consumption, however, was not accounted for by Cadmus. Instead, the reduced consumption caused by the 26% net higher rate of disconnections for nonpayment contributes to a higher rate of "savings" by the nonparticipant population. Since the "natural savings" of the non-participant population is higher, the *net* savings for the weatherization population is reduced.

Strangely, under the Cadmus analysis, to the extent that the low-income weatherization program succeeds in reducing the number of service disconnections in the weatherized population relative to the non-weatherized population, the net usage reduction attributable to the program will also be reduced

and the program will be more likely to be found *non*-cost-effective. This occurs because the increased number of days off the system within the nonparticipant population due to the relative increase in shutoffs shows up as "usage reduction," thus reducing the net usage reduction attributable to the weatherization.

Failing to Account for Previously Weatherized Homes Over-states Nonparticipant Savings

The selection of homes to be included in the non-participant population was inadequate to determine the net impacts of weatherization on low-income housing units. To begin this section, it is important to again summarize the assumptions that underlie the analysis performed by Cadmus. Cadmus selected a "participant" group and a "non-participant" group. The pre- and post-installation period consumption of the two groups were compared. The *difference* in usage reduction (if any) is the net reduction attributable to the installation of weatherization measures.

The Inability to Explain How to Account for Federally-Weatherized Homes

In its study for Rocky Mountain Power, Cadmus concedes that it made an initial error in its calculation of the net savings attributable to weatherization measures. Cadmus reports that some homes in the non-participant sample had been weatherized outside the program using non-Rocky Mountain Power funding. (Cadmus, at 17). As a result, some portion of the non-participant savings should have been attributable not to "naturally occurring" usage reduction, but rather to non-utility funded weatherization services. Cadmus found that 13% of the non-participant homes had been weatherized using such non-Rocky Mountain funds. (Cadmus, at 17 – 18).

The same would be true, of course, for the payment and arrears analysis. Some portion of the reduction in arrears and increase in payments in the non-participant population would have been attributable to the previous receipt of weatherization services before the program periods.

Upon discovering that it had included homes in the non-participant population that had been weatherized solely with federal funds, i.e., with non-Rocky Mountain Power dollars, Cadmus reported that "we adjusted the nonparticipant savings estimate to account for these homes." According to Cadmus, "nonparticipant annual post-usage [was] adjusted upward to account for weatherized homes." (Cadmus, at 18). Cadmus, however, could provide no explanation of *what* they did or how they made these adjustments. Indeed, when asked to "provide a detailed explanation of how the 'non-participant savings estimate' was 'adjusted' to account for homes previously weatherized solely with federal dollars," as well as to "provide a detailed explanation of how the 'non-participant usage' was 'adjusted upward to account for weatherized homes,'"[9] Rocky Mountain Power objected to the request, saying "Rocky Mountain Power and its consultants have not performed the requested analysis, and to do so

[9] The language of the data request quoted the language of the Cadmus report, page 18, including the footnote to Table 11 on page 18.

would be cost prohibitive." (CAPAI-1-22). No adjustment was reported as being made in the payment or arrearage analysis either.

The Failure to Account for Previously-Weatherized Homes

The Cadmus study erred in a second significant way in its usage and payment analysis in its treatment of previously-weatherized homes. While it could not explain how it made the adjustment, and Rocky Mountain Power later disclaimed such an adjustment, Cadmus noted that it had included homes that had been weatherized using federal funding in its non-participant population. (Cadmus, at 17 – 18). Indeed, 13% of the homes that it included in the non-participant population were homes that had been weatherized using only federal monies.

The only homes that Cadmus identified as having been weatherized with non-Rocky Mountain Power funds, however, were homes that had been weatherized during the three-year study period. When asked to provide a distribution of the years in which those 13% of homes had been weatherized using only federal dollars, Cadmus indicated that 84 homes had been weatherized in 2007; 84 had been weatherized in 2008; and 144 had been weatherized in 2009. (CAPAI-1-21). No homes weatherized with federal dollars *prior* to 2007, in other words, were excluded from the non-participant population. The Cadmus report states that only two criteria were used to identify the nonparticipant population: (1) that they received energy assistance on their Rocky Mountain Power bill; and (2) that they did not receive weatherization with Rocky Mountain Power funds *during the program period*. (emphasis added)[10]

Including homes weatherized with federal funds before 2007 in the non-participant population will increase the savings observed in the study period and thus decrease the net savings attributable to the weatherization program. The installation of weatherization measures in a home will better equip a home to save energy over the long-term. Air infiltration controls are installed and air sealing performed. Attic, ceiling and wall insulation is installed. Windows and doors are replaced. The result of the weatherization process is not only an immediate reduction in energy consumption, but an improvement in the ability of the resident to control his or her energy consumption over the long term. The ability to engage in "naturally occurring" usage reduction, whether in response to weather, to price increases, or to economic recession, is enhanced through weatherization. The usage in a weatherized home will be lower, and, therefore, if weatherized homes are included in the nonparticipant population, the difference in savings between the participant population and the "non-participant" population will be lesser, thus seemingly indicating a reduced usage reduction impact in the newly weatherized homes.

The principle underlying a comparison of a participant population and a non-participant population is that the comparison is of two groups who, but for the new weatherization measures provided through

[10] "The nonparticipant population was identified based on their receipt of energy assistance on their Rocky Mountain Power bill and homes that did not receive weatherization with Rocky Mountain Power funds during the program period." (Cadmus, at 13). Subsequently, the non-participant population was further narrowed based on consumption and billing data. (Cadmus, at 23 ["Participant and nonparticipant sites were removed from analysis if any of the following screens applied. . ."]; see also, CAPAI-1-29, CAPAI-1-31).

the program, are *otherwise similar*. For this principle to be accurately applied, the "pre-" comparison must be between two populations of otherwise un-weatherized homes, while the "post'" comparison must be between the newly weatherized homes and the continuing un-weatherized homes. The Cadmus Rocky Mountain Power study failed to abide by this basic evaluation design.[11]

The Cadmus Study Understates the Non-Energy Benefits

The calculation of non-energy benefits associated with the improvement of payment patterns attributable to reduced bills generated by low-income weatherization is a critical step toward determining the "cost-effectiveness" of that weatherization program. The reduction in utility costs associated with a reduction in nonpayment[12] affects each of the following cost-effectiveness tests: (1) Total Resource Cost (TRC); (2) Utility Cost Test (UCT); (3) Ratepayer Impact test (RIM); and (4) Participant Cost Test (PCT). The Cadmus study fails to adequately, or appropriately, account for the improvement in low-income payment amounts and patterns in its cost-effectiveness study.

The One-Year Reduction in Arrears Understates Improved Payments

Cadmus calculates that the Rocky Mountain Power weatherization program results in a first-year net reduction in arrearages of 31%. (Cadmus, at 26). Given a pre-installation period participant arrearage of $104, this 31% improvement yields an arrearage improvement of $31. (Cadmus, note 14, page 26).

The Cadmus study incorporates this reduction in arrears into the cost-benefit by multiplying the number of participants times the net difference in average consumer arrearages (266 x $31.32 = $8,331). (CAPAI-1-47). Clearly, the Cadmus study incorporates only the first year change in arrearage amounts in the cost-benefit study. Cadmus concedes quite explicitly that "we have assumed that the arrearage benefit occurs only in the first year after a home is weatherized." (CAPAI-1-45(B)). While usage reductions are assumed to continue over the 25 years of a measure life, the use of the 25-year measure life is *not* applied to changes in payment behavior. (CAPAI-1-45(B)). The Cadmus study implicitly incorporates the assumption, in other words, that the weatherization will improve arrearages for the first year, but that in the second year and beyond, the payment levels of participants and non-participants will revert to being identical.

Changes in arrearages attributable to weatherization, however, do not occur over a one-year period and then stop. The arrearage reduction measured by the payment analysis is not simply a *first* year reduction, it is an *annual* reduction. If the first year reduction is $31, in other words, the *second* year

[11] Cadmus has previously recognized the validity of this principle. In the low-income weatherization evaluation it provided in response to discovery, Cadmus (then quantec llc) stated: "non-participants who had received weatherization services in previous Program periods were removed from [the] non-participant sample." (CAPAI-1-2, Attachment) (*Final Report: Washington Low-Income Weatherization Program*, at note 4, page 28, prepared for Pacific Power (January 2007).

[12] "Nonpayment" includes a variety of subsets. Nonpayment should include not only complete nonpayment, but late payments as well. Two customers with identical annual bills of $1,200, who both make annual payments of $1,200, present substantially different cost profiles if one makes two payments of $600 in Month 6 and Month 12 and the other makes twelve equal monthly payments of $100 each.

arrearage reduction will be an ***additional*** $31; the third year reduction would be an additional $31. If the change in arrearages represents an actual reduction in arrears, the reductions will continue until the pre-existing arrearages in the participant population are eliminated (somewhat over three years for the Cadmus study, given a pre-existing arrearage of $104). If the change in arrearages represents a reduced growth in arrears, the reduced growth should continue until the customers are removed from the system. In either case, to include only the first year of arrearage reduction in the calculation of benefits inappropriately incorporates the assumption that weatherization will have an arrearage reduction impact in that first year, but that the improved payments will not continue over time.

Including Homes Weatherized with non-RMP Dollars in the Non-Participant Population Inappropriately Reduces Net Arrearage Changes

Including homes that have been previously weatherized in the "non-participant" population will artificially, and inappropriately, reduce the net payment impacts calculated for the weatherization program. As established above, while Cadmus adjusted its usage analysis (in some unspecified way)[13] to account for homes that were weatherized exclusively with federal funds (i.e., not using Rocky Mountain Power funding), it did not indicate that it made a similar adjustment in its arrearage analysis. Given that 13% of the non-participant population had been weatherized during the study period using non-Rocky Mountain Power funding, the arrearage levels of the non-participant population would reflect the impacts of weatherization-induced arrearage improvements, even if not induced by RMP funding.

In addition, as documented above, the homes that were weatherized with non-RMP funding that were included in the Cadmus usage "adjustment" included only homes that were weatherized with federal funds during the study period. (CAPAI-1-21). Homes that had been weatherized exclusively with federal funds *prior* to 2007 were almost certainly included in the non-participant population.[14] The arrearage reduction benefits flowing from weatherization, in other words, were not isolated in the participant population, but were also present in the non-participant population that had been weatherized with federal-only funds. These arrearage reduction benefits would have flowed from federally-funded weatherization occurring in the study period and before. To this extent, the arrearage reduction benefits arising in the RMP participant population are substantially under-stated.

[13] When asked to explain what adjustment was made, and how it was made, Rocky Mountain Power objected to the request. Indeed, when asked to "provide a detailed explanation of how the 'non-participant savings estimate' was 'adjusted' to account for homes previously weatherized solely with federal dollars," as well as to "provide a detailed explanation of how the 'non-participant usage' was 'adjusted upward to account for weatherized homes,'" Rocky Mountain Power objected to the request, saying "Rocky Mountain Power and its consultants have not performed the requested analysis, and to do so would be cost prohibitive." (CAPAI-1-22).

[14] If 13% of the non-participant population had been weatherized with federal-only funds simply in the previous three years, it is not only "likely", but almost a certainty that a substantial additional proportion of the non-participant homes had been weatherized exclusively with federal funds in the previous ten or fifteen years.

Utility Cost Reductions Associated with Improved Arrearages were Inappropriately Excluded

While the Cadmus study documented that the RMP weatherization program generated substantial reductions in credit and collection activities, the study inappropriately excluded the cost savings associated with those reductions from the calculation of benefits. There is no question but that the RMP weatherization program resulted in a reduction in credit and collection activities directed toward the participant population. Cadmus reported, for example, a 26% reduction in the number of "reconnections"[15] and a 13% reduction in the number of customers experiencing a disconnection for nonpayment. (Cadmus, at Table 17, page 25).[16] Moreover, weatherized customers made nearly 15% more payments than did non-participants (Cadmus, at Table 15, page 24), in addition to making a higher annual dollar payment. (Cadmus, at Table 16, page 24).

Despite these improved collections outcomes, Cadmus included no dollarized benefits in its cost-benefit analysis. In its report, for example, Cadmus included no dollarized benefits from the increased number of payments attributable to the receipt of weatherization. (CAPAI-1-33, CAPAI-1-35). Cadmus did not include any:

- Avoided credit and collection costs;
- Avoid lost sales;
- Avoided bad debt;
- Avoided working capital; or
- Added revenue (arising from the redeployment of collection resources away from participants who were now paying their bills to non-participants who were not).

(CAPAI-1-36). Neither did Cadmus include any financial benefits generated by the reduced number of disconnections for nonpayment. Cadmus concedes that it did not incorporate any of the reduced number of disconnections into the cost-benefit analysis. (CAPAI-1-37). Reducing the number of disconnections through weatherization, under the Cadmus analysis, generated:

- No reduction in credit and collection costs;
- No reduction in lost sales;
- No reduction in bad debt; or
- No reduction in working capital.

(CAPAI-1-38). In addition, according to the Cadmus analysis, the reduction in the number of disconnections for nonpayment did not result in the Company being able to redeploy its credit and collection resources previously devoted to those service disconnections to other accounts in arrears that

[15] Cadmus placed in a parenthetical "disconnections" after it used the term "reconnections. It did not explain how or why the number of reconnections was an adequate or appropriate substitute for disconnections for nonpayment.

[16] Some customers, in other words, were disconnected more than one time.

had not been previously subject to collection activities (thus generating additional revenue). (Cadmus-1-38).

There can be little question but that the avoided costs identified above are subject to quantification. These quantified avoided costs can have a substantial impact on a benefit-cost analysis. Cadmus conceded, for example, that low-income weatherization generates "ratepayer benefits" that it "considered" in the Rocky Mountain Power evaluation, albeit not in a quantified manner. (CAPAI-1-4(a), (c), (e)).[17] The Table below shows the ratepayer benefits that Cadmus claims it "considered" even though while not "quantifying" them.

Consideration of Non-energy Benefits (CAPAI-1-4)			
Non-energy Benefits	Considered in Cadmus Study?	Quantified by Cadmus Study?	Quantified by ORNL Study?
Ratepayer Benefits			
Payment-related benefits			
Avoided rate subsidies	Yes	No	Yes
Lower bad debt write-off	Yes	No	Yes
Reduced carrying costs on arrears	Yes	No	Yes
Fewer notices and customer calls	Yes	No	Yes
Fewer shutoffs and reconnections for delinquency	Yes	No	Yes
Reduced collection costs	Yes	No	No

[17] Cadmus did not explain *how* it incorporated these benefits into its "considerations." For example, when asked whether, and if so how, it used the numbers from Table 16 ("payment amounts summary") in the cost-benefit analysis, Cadmus responded: "Table 16 reports payment behavior. The numbers from Table 16 were not directly used in the cost-benefit analysis." (CAPAI-1-33). When asked to provide a detailed explanation of how the results in Table 16 were incorporated into the cost-benefit analysis, Cadmus responded: "The numbers from Table 16 were not used in the cost-benefit analysis." (CAPAI-1-35). When asked to provide a detailed explanation of how avoided credit and collection costs, avoided lost sales, avoided bad debt, and avoided working capital "were incorporated into the cost-benefit analysis," Cadmus responded: "None of these were included in the cost-benefit analysis." (CAPAI-1-36). When asked to provide a detailed explanation of how the results in Table 17 ("reconnection summary") were incorporated into the cost-benefit analysis, Cadmus responded that "the numbers from Table 17 were not used in the cost-benefit analysis." (CAPAI-1-37). When asked to provide a detailed explanation of how the avoided credit and collection costs, avoided lost sales, avoided bad debt, and avoided working capital associated with the reduced number of disconnections were incorporated into the cost-benefit analysis, Cadmus responded that "the numbers from Table 17 were not used in the cost-benefit analysis." (CAPAI-1-38).

If one were to have taken the Net Present Value benefits of "payment-related benefits" quantified by Oak Ridge National Laboratory (ORNL),[18] even at 2001 dollar levels,[19] and applied them the same way in which Cadmus did for the decreased arrears ($s of benefit per participant x # of participants = total $s of benefits) (CAPAI-1-47), these payment-related benefits would have added more than $42,000 in additional dollars of benefits arising from the RMP weatherization program.

	$/part	Parts	Total $s
Payment-related benefits			
Avoided rate subsidies /a/	$0	266	$0
Lower bad debt write-off	$89	266	$23,674
Reduced carrying costs on arrears	$57	266	$15,162
Fewer notices and customer calls	$6	266	$1,596
Fewer shutoffs and reconnections for delinquency	$8	266	$2,128
Reduced collection costs	$0	266	$0
Total			$42,560

NOTES:

/a/ No rate discount exists in Idaho and thus do reductions in discount were calculated.

These benefits alone would have been sufficient, even at 2001 dollar levels, to have moved the benefit-cost ratios close to 1.0 in the Cadmus study, even without making any of the other corrections and adjustments identified in these comments. (Cadmus, at Tables 21, 22, 23).

Moreover, even these benefits, however, do not identify the full range of benefits of the low-income weatherization program. They do not identify the extended credit and collection benefits of weatherization. Cadmus found, for example, that the RMP low-income weatherization program resulted in 26% fewer disconnections for nonpayment. The staff that would have been devoted to these disconnections, however, would not be "laid off." Instead, these staff would be redeployed to address the payment-troubles of non-participants who, in the absence of the program, would otherwise have been untreated. These redeployed collection activities would have, in turn, generated an additional set of avoided payment-related savings, including avoided bad debt and avoided working capital. The benefit-cost ratios identified above would be improved even further through this entire set of benefits that has been excluded from the Cadmus analysis.

In short, Cadmus inappropriately failed to include any dollarized benefits in the cost-benefit analysis to reflect improved collection outcomes. The increased numbers of payments, the increased dollars of payments, and the reduced number of shutoffs generated no benefits that were dollarized, quantified and included in the cost-benefit analysis.

[18] Martin Schweitzer and Bruce Tonn (April 2002). *Nonenergy Benefits from the Weatherization Assistance Program: A Summary of Findings from the Recent Literature*, Oak Ridge National Laboratory: Oak Ridge (TN) (hereafter, "Oak Ridge").

[19] The Oak Ridge study was released in 2002. It used 2001 dollar levels.

Cadmus Inappropriately Understated the Improved Payment Patterns of Weatherization Participants.

The Cadmus analysis of weatherization participants and non-participants documented that the weatherization program generated substantial improvements in the payment patterns amongst the weatherization participant population. According to the Cadmus study, weatherization participants made nearly 15% more payments as a result of the weatherization program. The net increase in customer-provided payments reached $244 for weatherization participants. (Cadmus, at 24).

Cadmus errs by not adjusting the "total bill" to eliminate miscellaneous charges such as late payment charges, disconnection and reconnection charges, returned check charges, field collection charges, and the like in examining these changes in payments. Rocky Mountain Power imposes a variety of "regulatory charges" (Schedule 300, RMP Residential Tariffs). It imposes a monthly 1% late payment charge (Schedule 300, Sheet 8R.1); a $20 charge for returned checks (Schedule 300, Sheet 8R.2); and a "reconnection charge" of either $25 or $50 (depending on whether the reconnection occurs during regular business hours or not). (Schedule 300, Sheet 10R.6). The Company imposes a $20 "field service collection charge." (Schedule 300, Sheet 10R.8).

The fact that nonparticipants would have a disproportionate relative increase in their bills devoted to such fees necessarily follows from the study findings regarding payments and arrearages. A reduced level of arrearages attributable to weatherization would necessarily imply a reduced portion of the bill caused by late payment charges. The reduced number of reconnections necessarily implies a reduced amount of the total bill attributable to field collection charges and to reconnection charges.

The fact that weatherization participants increased their payments by $244 relative to non-participants does not capture the full beneficial impact of the weatherization program. The true benefit of the weatherization program is the amount by which the program participants increased their payments toward their bill for current usage, not merely toward their total current bill. It is as important, if not more so, that the weatherization program enabled the program participants to reduce the payments being siphoned off to pay the miscellaneous customer service fees. Note, for example, that RMP's weatherization participant population increased their payments by $231 from the pre- to post-installation period, while the non-participant population decreased their payment by $13. (Cadmus, at 24). This result is significant because not only did the non-participant population reduce its payments, but a higher proportion of the payments that this population ***did*** make was applied to charges other than bills for current consumption. The reduction in payments applied to their bill for current usage would be even greater than their gross reduction impacts.

Cadmus made no effort to determine the make-up of the bills that were being paid by participants and by non-participants. When asked for a disaggregation of bills by the type of charge, including how much represented bills for current consumption (e.g., customer charge, usage charge, riders) and how much represented late payment charges and customer service fees, Rocky Mountain Power objected, saying that Cadmus had not performed such an analysis and to do so would be cost-prohibitive. (CAPAI-1-34). The payment objective of weatherization is not simply to increase the payment of ***total*** bills, but to

increase the payments made toward bills for current usage. The Cadmus cost-benefit study did not even seek to determine or document these benefits of increasing payments toward bills for current usage.[20]

The Cadmus Study Has Data Problems That Makes its Conclusions Suspect

Aside from the fundamental methodological issues identified above, which demonstrate that Cadmus systematically understated the benefits of RMP's low-income weatherization program, the Cadmus study exhibits other data problems that throw the validity of the study into doubt.

The Timing of Weatherization Services and "Post-Installation" Data

Cadmus reports that its analysis is based on a comparison of 12 months of "pre-installation" data and 12-months of "post-installation" data. According to the Cadmus report, for its usage analysis, the "pre-installation" period was defined to be the calendar year 2006 and the "post-installation" period was defined to be the 12 months ending September 2010 (i.e., October 2009 through September 2010). (Cadmus, at 16). The payment analysis was similar. According to Cadmus, "Rocky Mountain Power provided monthly payment data for the low-income customer sample from January 2006 to October 2010." (Cadmus, at 22). For the payment analysis, Cadmus defined the "pre-installation" period as calendar year 2006 and the "post-installation" period as the 12 months ending October 2010 (i.e., November 2009 through October 2010). (Cadmus, at 23).

What Cadmus does *not* do is to explain the discrepancy between how it defines the "post-installation" period and the data it has available identifying the dates on which weatherization was actually performed. Remember that:

- In the usage analysis, three months out of 2009 were included in the "post-installation" period (October, November, December);
- In the payment analysis, two months out of 2009 were included in the "post-installation" period (November, December).

Cadmus reports that it originally identified 266 weatherized homes to use in its analysis. (Cadmus, at 14). Of the 266 participants, 113 were weatherized sometime during 2009. (Cadmus, at 14). There were more weatherized homes from 2009 than for either of the other two years (2007: 64 weatherized homes; 2008: 89 weatherized homes). Cadmus could not provide the same breakdown for its payment analysis. When asked "of the 229 participants used in the payment analysis, please indicate the number of participants on which weatherization was completed in 2009," the Company responded that neither

[20] To fail to account for this would generate the impact that improving payment patterns would result in decreased payments by weatherization participants since bills would no longer include a component directed toward late payment charges, customer service fees and the like. Under this approach, the more successful the weatherization program would be in improving payment patterns, the less likely the program would be found cost-effective. The overall level of payments of program participants would decline relative to non-participants who face constant or increasing customer service fees.

it nor Cadmus had done that analysis and to do so would be "unduly burdensome" and "cost prohibitive." (CAPAI-1-14(c))

Somewhat fewer participants were identified for the payment analysis, however, than for the usage analysis. (Cadmus, at 23). Cadmus does not know, however, and could not produce, the number of overlaps between the 229 accounts used in the payment analysis and the 166 accounts used in the consumption analysis. (CAPAI-1-29; see also, CAPAI-1-31(a)).[21]

Cadmus reports that due to the fact that the only "date" it could obtain on program participants was "the date Rocky Mountain Power entered the program data into its system," it was "difficult to determine the specific program year in which jobs were completed." (Cadmus, at 14). Cadmus stated further that ". . .we were unable to identify the date weatherization was completed and therefore unable to specifically determine start and end dates for the pre- and post-installation periods for the billing analysis." (Cadmus, at 14).

Nonetheless, the available evidence indicates that the weatherized units occurring in 2009 were completed later in the year rather than earlier in the year. Cadmus reports, for example, that the quality of weatherization delivered by the local agencies improved after those agencies changed their policies "during the summer of 2009" to ensure that post-weatherization inspections were performed by persons other than the persons installing the weatherization in the first instance. (Cadmus, at 9) Some substantial number of weatherized units, in other words, were treated *after* the "summer of 2009" for this policy to have had an impact.

The use of 2009 weatherized units is problematic from the perspective of the Cadmus usage and payment analyses. Cadmus was asked to distribute the number of homes weatherized in 2009 by the month in which the weatherization was completed. Cadmus could not provide the month in which 2009 weatherization was completed for either the participants used in the consumption analysis (CAPAI-1-14(a) – (b)) or for the participants used in the payment analysis ((CAPAI-1-14(c) – (d)).

Given the above information, that:

1. units weatherized in 2009 were completed after the summer of 2009; and

2. that the "post-installation" usage and payment analysis used data from October, November and December 2009; and

3. that Cadmus is not able to report the months in which units weatherized in 2009 were treated,

[21] Remember, the 229 participants identified for the payment analysis were those identified *before* applying the further screens. The 229 participants identified for the payment analysis are comparable to the 266 identified for the consumption analysis, not to the 166 finally used in the usage analysis. Cadmus did not identify the number of participants ultimately used in the payment analysis (i.e., the payment analysis equivalent to the 166 usage analysis population).

it is not even possible to confirm that either the usage or the payment data used in the "post-installation" period was, in fact, *completely* within the *post*-installation period.[22] Any participants weatherized in September 2009 or later would not provide a full twelve months of post-installation billing data. Any units weatherized in October 2009 or later would not provide a full twelve months of post-installation consumption data. The post-installation data for participants from 2009 appears likely to have included a mixture of both pre- and post-installation data.

The impact of this data problem will be to understate the benefits of the RMP weatherization program. To the extent that Cadmus included "pre-installation" months in the "post-installation" period for program participants, the calculated consumption will be higher than it would be had those months included the reduced consumption generated by the weatherization. Moreover, to the extent that Cadmus included untreated months in the "post-installation" period for program participants, the payments made by those program participants would be directed, in part, toward usage (and thus bills) that would not have been reduced; including only post-installation payments and bills would have resulted in an even greater reduction in arrears.

The Treatment of Bill Credits Understates Arrearage Impacts

Cadmus reports that it bases its analysis of arrears on the "ending balance amount across the 12-month period." (Cadmus, at 26). In doing this calculation, however, Cadmus made a critical methodological error. When asked how monthly *credit* balances were treated in the examination of the "ending balance amount," Cadmus responded that "no adjustments were made; the data was used as provided. Credit balances were combined with debit balances to produce the totals over the study period." (CAPAI-1-44).

The effect of this approach, of course, is to take the credit balance of Customer A to reduce the arrearage balance of Customer B, an impact that does not occur in fact. The Cadmus approach does not even make sense from a conceptual perspective. The question would be: how many dollars in arrears are the participant and non-participant customers? In response to that question, customers do not run "negative arrears." If a customer has a credit balance on his or her bill, the answer to the question is "$0." If a customer has a credit balance of $50, the customer has $0 in arrears (*not* a -$50 in arrears). It certainly would be inappropriate to take that credit balance and reduce the arrears of a different customer as a result. Under the Cadmus approach, a customer with a bill credit of $50 when matched with a customer with an arrears of $50 would generate the conclusion that the average arrears was $0.

The impact is not small. Cadmus provided the "low-income billing history" in response to discovery in this proceeding. (CAPAI-1-34). Since Cadmus provided no explanation of, or data dictionary for, this "billing history," the billing history for the most part was less-than-helpful. Nonetheless, it is still possible to determine that the impact of this mis-specification of how to calculate "average arrears" is

[22] Remember that bills would be issued one month after the fact. Bills rendered in October, for example, would reflect September consumption in whole or part (along with the corresponding billed revenue).

substantial. Taking the "balance forward" as the statement of arrearage levels, of the 32,761 records provided for 2010:[23]

- 9,667 billing months (30%) had a "balance forward" of greater than $0 (i.e., had an "arrears");
- 8,236 billing months (25%) had a "balance forward" of less than $0 (i.e., had a bill credit); and
- 14,858 billing months (45%) had a "balance forward" equal to $0 (i.e., were paid in full without a bill credit).

As can be seen, to use the "bill credits" to reduce the arrears of accounts having arrears would substantially understate the arrears over the course of the study period (January through early November, 2010 in the example above). Because of this methodological flaw in its calculation of "average arrears," the Cadmus study provides no useful information about the impact of the weatherization program on arrears.

General Observations with Respect to the Cadmus Study

The Cadmus study can be found to be supportive of the cost-effectiveness of low-income weatherization as much as to find that low-income weatherization is *not* cost-effective. According to Cadmus, the usage reduction found by its billing analysis was bounded by a 26% precision band at the 90% confidence level. (Cadmus, at 17). Cadmus also applied the 26% precision band to its arrearage analysis. (CAPAI-1-20). This precision level indicates that any number within the confidence band is as likely to be accurate (and not occurring at random) as any other number.

Cadmus provided a restatement of its cost-benefit calculations using the upper bound of the confidence band rather than the mid-point for its consumption analysis. Using the upper bound solely for the usage reduction calculation yields the following restated Table 21 (cost-effectiveness without non-energy benefits) and Table 23 (cost-effectiveness with non-energy benefits).

The Restated Table 21 inserts the upper range of savings into the calculation of benefits excluding non-energy benefits.

Restated Table 21 Using Upper Bound of Savings Estimate (1,648 kWh): Program Cost-Effectiveness Summary for 2007 – 2009 (CAPAI-1-19)

Cost-Effectiveness Test	Levelized $ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation added (PTRC)	$0.078	$426,022	$468,864	$42,842	1.10
Total Resource NO Added (TRC)	$0.078	$$426,022	$426,240	$218	1.00
Utility (UCT)	$0078.	$426,022	$426,240	$218	1.00

[23] The "billing history" provided in response to discovery did not separately identify weatherization participants and weatherization non-participants. Accordingly, it was not possible to determine the disparate impact of this methodological flaw on participants and non-participants.

Ratepayer Impact (RIM)	$0.169	$916,860	$426,240	-$490,260	0.46
Participant (PCT)	$0.065	$355,470	$846,308	$490,838	2.35
Lifecycle Revenue Impact	$0.00001075				

In contrast, the Restated Table 23 inserts the upper range of savings into the calculation of benefits including the non-energy benefits.

Restated Table 23 Using Upper Bound of Savings Estimate (1,648 kWh): Program Cost-Effectiveness Summary for 2007 – 2009 (CAPAI-1-19)					
Cost-Effectiveness Test	Levelized $ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation added (PTRC)	$0.078	$426,022	$622,141	$196,118	1.46
Total Resource NO Added (TRC)	$0.078	$$426,022	$579,517	$153,494	1.36
Utility (UCT)	$0078.	$426,022	$434m571	$8,548	1.02
Ratepayer Impact (RIM)	$0.169	$916,860	$434,571	-$482,289	0.47
Participant (PCT)	$0.065	$355,470	$846,308	$490,838	2.36
Lifecycle Revenue Impact	$0.00001057				

As can be seen, with or without the non-energy benefits, using the upper bound rather than the mid-point, the low-income weatherization is likely to be cost-effective, even under the Cadmus study, using every test but the RIM test, and without making any corrections to the Cadmus analysis.

Similar results are found when one considers the upper bound of the arrearage reduction estimate. Under this restatement, Table 21 would not change since it does not incorporate non-energy benefits. A restated Table 23, however, finds that low-income weatherization is cost-effective under both Total Resource Cost tests, as well as under the Participant cost test. While low-income weatherization still would not reach a benefit-cost ratio of 1.0 under the Utility Cost Test in this restated Table 23, this failure occurs because, as discussed in detail above, Cadmus erroneously assigns no utility cost savings (e.g., reduced working capital, reduced bad debt, reduced credit and collection savings) to a weatherization participant's reduction in arrears and dollar increase in payments and assume that arrearage reductions occur only in Year One and not in subsequent years.

Restated Table 23 Using Upper Bound of Arrearage Reduction ($54): Program Cost-Effectiveness Summary for 2007 – 2009 (CAPAI-1-20)					
Cost-Effectiveness Test	Levelized $ / kWh	Costs	Benefits	Net Benefits	Benefit / Cost Ratio
Total Resource + Conservation added (PTRC)	$0.078	$426,022	$531,329	$105,306	1.25
Total Resource NO Added (TRC)	$0.078	$426,022	$497,509	$71,486	1.17
Utility (UCT)	$0078.	$426,022	$352,563	-$73,460	0.83
Ratepayer Impact (RIM)	$0.169	$815,476	$352,563	-$462,913	0.43
Participant (PCT)	$0.065	$355,470	$744,924	$389,454	2.10
Lifecycle Revenue Impact	$0.00001075				

While not asked to produce a restated Table 23 incorporating the upper bound for BOTH the arrearage reduction AND usage reduction, the combination of the two impacts, both of which increased benefit-cost ratios to more than 1.0, would increase the benefit-cost ratios under each test even more.

In setting forth these restated tables, no other adjustments or corrections to the Cadmus analysis have been made. The need for such other adjustments and corrections, however, has been documented throughout these comments. These adjustments and corrections would be expected to increase the cost-effectiveness of the Company's weatherization program beyond that identified immediately above in these restated tables.

Findings and Conclusions

The ultimate finding of CAPAI in this proceeding is that the Cadmus study provided by Rocky Mountain Power Company provides an inadequate basis upon which to conclude that the Rocky Mountain Power low-income weatherization program is not "cost-effective." In fact, had the model used by CADMUS been properly formatted and sufficient, legitimate and necessary input data been input to the model, CADMUS would have had no choice but to find the program amply cost-effective. The following findings are appropriate given the data and discussion provided above:

1. The Cadmus study failed to adjust for the disproportionate impact of price hikes and economic recession on non-participants. The price increases and economic recession facing Idaho residents in the study period have had a disproportionate impact on non-participant usage reduction.

2. The Cadmus study failed to account for the lower persistence rate of usage reduction actions taken by non-participants in response to price increases and economic recession. As a result,

the study failed to incorporate increases in the difference in savings between participants and non-participants over time.

3. The Cadmus study failed to distinguish between heating and non-heating participants and non-participants.

4. The Cadmus study failed to account for the fact that energy assistance in Idaho is delivered exclusively to the vendors of a household's primary heating fuel. Accordingly, the selection of non-participants based on their receipt of energy assistance would result in comparing a population of non-participant electric heating customers against a population of combined heating and non-heating customers.

5. The Cadmus study failed to account for the fact that non-participants had a higher rate of disconnections for nonpayment, as well as a higher proportion of customers experiencing any disconnections, which would not result in a reduction in the number of billing days or billing months. The reduction in sales/usage attributable to days on which service was disconnected would inappropriately appear as a "usage reduction" in the non-participant population.

6. The Cadmus study failed to account for the fact that a significant number of non-participant homes would have received federally-funded weatherization services prior to the study period. As a result, the savings for these homes would have been increased relative to previously unweatherized program participants, due to the increased ability of households to control their energy consumption.

7. The Cadmus study inappropriately found that arrearage reductions were a one-time, first year, impact rather than an annual impact. The impact of reduced arrearages should be considered over time, not merely in the first year.

8. The Cadmus study failed to assign any utility cost savings to reduced arrearages, reduced numbers of service disconnections for nonpayments, and an increased number and dollar value of participant payments. Cadmus failed to account for fundamental cost savings such as reduced working capital, decreased bad debt, reduced and redeployed credit and collection activities, and reduced lost sales.

9. The Cadmus study failed to account for the fact that an increased proportion of non-participant payments were directed toward bills other than for current usage. Non-participant payments were disproportionately devoted to customer service fees such as late payment charges, reconnect fees, field collection fees, and the like.

10. The Cadmus study failed to ensure that all "post-installation" data actually represented time subsequent to the installation of weatherization measures. Including pre-installation data on

usage and payments/arrears has the impact of reducing the calculated impact of the weatherization measures.

11. The Cadmus study inappropriately included monthly bill credits as a reduction to arrears. An account with a bill credit in any given month has a $0 arrears, not a negative arrears.

The direction of the impact that these corrections would have on the calculation of cost-effectiveness is identified in the Table below.

Finding	Needed Correction	Cadmus study:
1.	Account for disproportionate impact of price hikes and economic recession on non-participants.	Understates usage, arrears and payment benefits.
2.	Account for difference in persistence of savings between participants and non-participants.	Understates usage, arrears and payment benefits.
3.	Distinguish between heating and non-heating participants.	Understates usage, arrears and payment benefits.
4.	Identify non-heating non-participants.	Understates usage, arrears and payment benefits.
5.	Normalized consumption for disproportionate change in days off system due to disconnection for nonpayment.	Understates usage, arrears and payment benefits.
6.	Exclude previously-weatherized homes from non-participant population.	Understates usage, arrears and payment benefits.
7.	Calculate arrearage reductions over the life of the weatherization measures.	Understates arrears and payment benefits.
8.	Assign cost savings to improvements in payment amounts, increased number of payment numbers, and reduced number of disconnections.	Understates arrears and payment benefits.
9.	Account for differences in payments toward bills for other than current usage (e.g., late payment charges, reconnect fees, etc.).	Understates arrears and payment benefits.
10.	Included pre-installation months in "post-installation" data.	Understates usage, payment and arrearage benefits.
11.	Counts bill credits as a "negative arrears" rather than as a $0 arrears.	Understates billing and payment benefits.

Given these adjustments and corrections, and given further how close the low-income weatherization programs comes to a 1.0 benefit-cost ratio even under the flawed Cadmus analysis, and given finally how the low-income weatherization program reaches a benefit-cost ratio of 1.0 with savings within the confidence interval of the Cadmus study even as it stands, making these adjustments and corrections could reasonably be expected to have yielded a positive benefit-cost ratio for the Rocky Mountain Power weatherization program.

Part 2: The Necessary Components for a Cost-Effectiveness Analysis.

In this section of CAPAI's comments, CAPAI identifies the basic approach that should be used to determine the cost-effectiveness of low-income weatherization. Indeed, the basic approach used by Cadmus in the evaluation of the cost-effectiveness of the Rocky Mountain Power low-income weatherization program is, fundamentally, a sound approach. A benefit-cost analysis should consider pre- and post-installation changes in customer behavior for a participant and non-participant population. The differences between those two populations would represent the net change in customer behavior attributable to the weatherization program.

General Principles of Cost-Effectiveness to Consider

The recommendations below, of course, assume the methodological and data corrections to the Cadmus study identified in Part 1 above. These general recommendations are over and beyond the recommended corrections to the specific changes identified as being necessary to correct flaws and omissions in the Cadmus Rocky Mountain Power study.

The following changes in the Rocky Mountain Power approach, however, are merited:

1. Separate cost-effectiveness determinations should be made for heating and non-heating customers. It is inappropriate to mix heating and non-heating participants and non-participants into a single cost-effectiveness determination.

2. It certainly is inappropriate to compare a heating non-participant population to a non-heating participant population or to a population containing a mixture of heating and non-heating customers.

3. A cost-effectiveness determination should reflect the differences between weatherized and non-weatherized homes. Previously weatherized homes, whether or not weatherized with non-utility resources and whether or not weatherized during the study period, should not be included in the non-participant population.

4. The Utility Cost Test (UCT), Total Resource Cost test (TRC), and Ratepayer Impact test (RIM) should all include the cost savings attributable to changes in the arrearages, payment patterns, payment levels, and collection patterns of weatherized homes relative to non-participant homes. An avoided bad debt or working capital expense, in other words, is as much a utility cost savings as an avoided energy or capacity expenditure. Reductions in arrearages, as well as changes in payment patterns, payment levels and collection patterns are not merely "societal" benefits.

5. Payment cost savings attributable to usage reduction should be calculated as annual savings, not merely as a one-time first-year savings. Determining the stream of savings over the life of the weatherization measures, discounted to present value, is appropriate.

6. The societal non-energy benefits (NEBs) such as increased comfort, decreased homelessness, increased health and safety, and the like, are ***separate*** from and in addition to the payment-related benefits accruing to the benefit of the utility (and its ratepayers). While benefits such as reduced working capital and bad debt would apply to the Utility Cost Test, Ratepayer Impact Test, and Total Resource Cost test, benefits such as improved health and economic development would apply only to the Total Resource Cost Test.

7. A cost-effectiveness test should consist of three components: (1) the energy and demand avoided costs (i.e., traditional avoided costs); (2) the payment-related avoided costs (e.g., bad debt, working capital, etc.); and (3) the societal savings (e.g., environment, health, comfort, etc.).

A Special Note on Payment-Related Avoided Costs

Because much of the value-added presented by CAPAI in this section of its comments relates to the consideration of the payment-related ratepayer benefits generated by low-income weatherization, CAPAI offers these special observations about such benefits:

The Need to Quantify and Incorporate Payment-Related Benefits

The payment-related benefits of low-income weatherization programs have been recognized for many years. These benefits have been seen as delivering real dollars of cost reductions to utilities. One Oak Ridge National Laboratory (ORNL) study, for example, observed in 1994:

> Because of characteristics of household members and the nature of energy conservation measures in a low-income DSM program, a number of other cash-flow benefits accrue to electric and natural gas utilities as a direct result of implementing these programs. For example, to the extent that the energy bills of low-income households are reduced as a result of running DSM programs, the more likely that arrearages will be reduced. Arrearage reductions, in turn, lead to costs savings for utilities. These savings typically include reductions in bad debt write-offs, lower collection costs, lower termination and reconnection costs, and possibly financing costs for accounts receivable.[24]

Oak Ridge continued on to note:

> [A]n important by-product of running low-income DSM programs is the reduction in arrears experienced by utilities from low-income households. That reduction, of course, is a benefit to the utility – i.e., it favorable affects cash flow. . .[I]ncluding that amount as a benefit improves the benefit-cost ratios for both the incremental and inclusive versions of four of the tests.[25] The exception is the Participant Test.[26]

Oak Ridge then recommended:

> Arrearage reductions from running a low-income DSM program result in estimable, administrative savings for a utility. Although available evidence suggests a wide range of possibilities for the value of these administrative savings attributable to arrearage reductions across the country, individual utilities can estimate the amount through billing analysis. We recommend that such estimates be included as part of the benefits of running a low-income DSM program. They should be treated the same as avoided energy and capacity costs of running a program.[27]

CAPAI urges the Idaho Commission to adopt this ORNL recommendation and reasoning.

The Means to Quantify and Incorporate Payment-Related Benefits

Some analysts fail to incorporate payment-related benefits because they assert either that the data does not exist to accurately determine a quantifiable benefit or that the added value generated by these "non-energy benefits" is insufficient to justify the effort to pursue such a quantification. (see, CAPAI-1-49(d)). Unfortunately, these analysts do not distinguish between the "societal" non-energy benefits (such as reduced homelessness, increased health and safety) and the utility-related cost reductions associated with changes in payment amounts and payment patterns. The Oak Ridge National

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[24] Marilyn Brown and Lawrence Hill (May 1994). *Low-Income DSM Programs: Methodological Approach to Determining the Cost-Effectiveness of Coordinated Partnerships*, ORNL/CON-375, Oak Ridge National Laboratory: Oak Ridge (TN). (hereafter *Methodological Approach*).

[25] The reference to "four of the tests" includes the standard benefit-cost tests, including: (1) the Societal test, (2) the Ratepayer Impact test, (3) the Total Resource Cost test, and (4) the Utility Cost Test.

[26] Id., at 5.11.

[27] Id., at 6.2.

Laboratory (ORNL) study of non-energy benefits offered a point analysis (as well as a range-analysis)[28] of documented payment-related savings. In the absence of information to the contrary, it would be reasonable to incorporate these Oak Ridge point estimates (escalated to current year dollars) into a cost-benefit analysis.

In the alternative, just as environmental benefits are not quantified on a separate per-unit basis, but are instead incorporated through an environmental percentage "adder," the non-energy benefits unique to low-income programs can be incorporated through a percentage "adder" as well if the Commission believes that a calculation of per-unit savings is not practicable. The seminal study of the use of such adders concluded that "a cost-effectiveness adder of 50 percent of avoided costs for all low-income DSM programs" was justified by the existing empirical data.[29] The Howat analysis concluded that "analysts have thus reached their justification of 50 percent in different ways,[30] but are able to reach a consensus that 50 percent of avoided cost is a reasonable and appropriate adder for low-income DSM programs."

While CAPAI believes that incorporating the Oak Ridge dollarized benefits per program participant is a reasonable approach to incorporating payment-related non-energy benefits, using an "adder" in the same fashion as the environmental adder is used is a reasonable second-best alternative.

[28] For example, the "range of benefits" found for "reduced carrying costs on arrears" was between $4 and $110 per participating household in Net Present Value terms, with the "point estimate" being $57 per participating household. Oak Ridge, *supra*, at 6.

[29] John Howat et al. (April 1999). *Analysis of Low-Income Benefits in Determining Cost-Effectiveness of Energy Efficiency Programs*, National Consumer Law Center: Boston (MA).

[30] The Howat analysis presented a menu of avoidable costs with separate percentage "adders" assigned to each set of costs. The "variety of ways" referenced in the conclusion simply refers to the fact that different people could select different avoided cost components, but any such set of reasonable selections would ultimately generate support for an adder of 50% or more.