

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

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<p>In the Matter of the Division's Annual Review and Evaluation of Electric Lifeline Programs</p> <p>In the Matter of HELP, Electric Lifeline Program Evaluation</p>	<p>Docket No. 03-035-01</p> <p>Docket No. 04-035-21</p>
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**Rebuttal Testimony of M. Sami Khawaja, Ph.D.
Quantec, LLC**

October 13, 2005

1 **Q. Please state your name, by whom you are employed, and your business address.**

2 A. My name is M. Sami Khawaja. I am employed by Quantec, LLC. My address is 720
3 SW Washington, Suite 400, Portland, Oregon 97205.

4 **Q. What position do you hold with Quantec, LLC?**

5 A. I hold the position of President.

6 **Q. Please describe your education and business experience.**

7 A. I received a Ph.D. in economics from Portland State University in 1991. Prior to my
8 present position with Quantec, I was employed as Project Director at Barakat and
9 Chamberlin. Earlier in my career, I was a Senior Analyst at PacifiCorp and President
10 of Business Research Group. I am currently an adjunct professor of economics at the
11 Graduate Applied Energy Economics Program at Portland State University. I have
12 conducted various kinds of energy efficiency program evaluations for international
13 and domestic clients. Throughout my 22 years of work in the energy industry, I have
14 performed and directed a wide variety of low-income program evaluations. These
15 included evaluations of energy efficiency/weatherization, rate discount, and energy
16 assistance programs. My clients have included utilities and state agencies. I have
17 carried out related work in Utah, Washington, California, Oregon, Idaho, Ohio,
18 Kentucky, New York, Pennsylvania, Maine, Connecticut, New Hampshire, and
19 Wisconsin.

20 **Q. What is the purpose of your testimony in this proceeding?**

21 A. My testimony addresses some of the issues raised by Light and Truth's witness, Paul
22 Mecham, regarding the Quantec HELP Impact Evaluation Report. Specifically:

23 1.) The methodology employed in the evaluation

1 2.) The Program impacts and attribution

2 3.) The Program's cost effectiveness

3 **Q. In order to give context to your responses to Mr. Mecham, please describe the**
4 **purpose of the evaluation study?**

5 A. The evaluation was prepared at the request of the Utah Division of Public Utilities to
6 estimate HELP's impact and how it influenced recipients' ability to pay electric bills.
7 It also assessed program benefit levels for the Company and other ratepayers.
8 Specifically, the evaluation measured the program's impact (the portion of the overall
9 change that is attributable to the program) on recipient arrears, disconnections, and
10 energy burden.

11 **Q. Mr. Mecham questions the methodology employed. Please describe the**
12 **methodology used in your study.**

13 A. The study had two components. The first was a process evaluation assessing overall
14 delivery that relied on a review of filed tariffs, program documents, and in-depth
15 stakeholder interviews. The second was an impact evaluation intended to assess
16 program quantitative impacts and cost effectiveness that relied on billing and payment
17 analysis using company-provided data. The attribution of the impacts associated with
18 the program was assessed using a comparison group of low-income customers. The
19 comparison group was chosen from participants in the program in the year subsequent
20 to the study year.

21 **Q. Is this a common approach to estimating impacts of this type of program?**

22 A. The approach that was followed is known in the evaluation literature as "quasi-
23 experimental design." It is widely used in estimating impacts of interventions

1 involving real human beings involved in real lives. The approach uses a group of
2 people that did not participate in the program as a proxy of what would have happened
3 absent the program. In other words, the behavior of this group (called comparison
4 group) illustrates what the program participants would have done had they not
5 participated. A quick Google search on “program evaluation with quasi experimental
6 design” yielded over 17,000 hits. I have used this approach in conducting evaluations
7 for the past 22 years and presented results to utilities, commissions, state agencies, and
8 the World Bank.

9 **Q. Was Quantec successful at estimating program impacts?**

10 A. Quantec was able to estimate program participant effects in the areas of bill payment
11 ability, arrears reduction, and utility and ratepayer program benefits.

12 **Q. Briefly summarize your findings relative to participant effects.**

13 Our evaluation supports the following conclusions:

14 1.) The combined assistance of HELP and HEAT has reduced arrears by
15 approximately \$100 per participant. The impact of HELP alone was estimated at
16 approximately \$77.

17 2.) From a ratepayer perspective, the combined HELP/HEAT approach is cost
18 effective, but HELP alone does not pass the traditional ratepayer’s cost
19 effectiveness test. However, the net ratepayer cost of HELP alone is less than two
20 cents per month per household. Because the monthly contribution is being reduced
21 by two cents, from \$0.12 to \$0.10, we can expect that the program will be cost
22 effective going forward.

23 **Q Mr. Mecham expresses concern that Quantec used only a sample of the available
24 data. Did Quantec use only a sample of the HELP participants in its analysis?**

25 A. No. Mr. Mecham is mistaken. Quantec conducted its analysis on the entire census of
26 the participants. Only participants that had missing data were excluded.

1 **Q Do you agree with Mr. Mecham's characterization of the change in arrearage?**

2 A No. Arrearages declined by 42.7% for program participants. Mr. Mecham indicates,
3 on page 24 of his testimony, that arrearages increased by 4.25% for the total
4 PacifiCorp data. He arrives at this figure by comparing the total arrearage value of the
5 HELP recipients at the end of September of 2003 and 2004. The total change in
6 arrearage is not relevant to the analysis. What is relevant is what the change would
7 have been in the absence of the program. To estimate this, the analysis compares the
8 change in arrearage for participants to that of non-participants. We examined the
9 change in the *accumulation* of arrears between the participants and the comparison
10 group. Our analysis compares the accumulation in arrears in the post period to that of
11 the pre period (approximately 12 months in length each). For example, if a client in
12 the participant group starts out with \$1,000 in arrears at the beginning of the pre
13 period and increases that amount to \$1,500 at the end of the pre period, accumulation
14 is \$500. Now, if at the end of the post period, the arrears increase to \$1,600, then *total*
15 arrears have indeed gone up by \$100. However, the single year accumulation has
16 decreased by \$400, which represents an 80% improvement for the client in the
17 participant group.

18
19 In contrast, assume a comparison group client that also started at \$1,000 in arrears and
20 also goes to \$1,500 during the pre year. This as above, is an accumulation of \$500.
21 However, if during the post period their arrears increase to \$2,100, then their single
22 year accumulation is \$600, which represents a *worsening* of 20%. The program's net
23 impact with these two examples would be an improvement of 100%. The participant
24 would have worsened his arrears by 20% had it not been for the program, and would
25 have had arrears of \$2,100 at the end of the post year. Instead, his arrears were \$500
26 less than that at \$1,600. Comparing the hypothetical \$500 improvement in the
27 participant's arrearages with the \$500 deterioration in the *non*-participant's arrearages
28 yields a 100% improvement due to program participation.

29 **Q Does Mr. Mecham make the same logical error with regards to his analysis of**
30 **shutoff notices?**

1 A Yes. Our calculation indicates that the program caused a 0.3% reduction in shutoffs. In
2 other words, in the absence of the program, shutoffs would have been higher by 0.3%
3 than they actually were.

4 **Q Mr. Mecham alleges that Quantec’s report failed to demonstrate attribution. Do**
5 **you agree?**

6 A I disagree. We have used a standard evaluation method. We compared changes in key
7 indicators experienced by participants to those experienced by the comparison group.
8 We show our result for each month in the analysis. In my opinion, program impacts
9 and attribution of these impacts are clear. The results we revealed in the data are in
10 line with those experienced by Quantec and other evaluators in other states.

11 **Q Mr. Mecham indicates that he could not find any data in the report on the size of**
12 **Quantec’s samples (Mecham Testimony, page 27, line 730). Can you indicate**
13 **where that information is located?**

14 A Table IV.2 and IV.3 in our report show the number of participants and comparison
15 groups used in the analysis. The participants reflect the entire population of program
16 participants, excluding only those participants for whom data were not available.

17 **Q Did Quantec apply the appropriate tests to assess program effectiveness?**

18 A Yes. We did state in the report that traditional Demand Side Management tests did not
19 apply directly to rate discount programs. Consequently, we applied a variation of the
20 ratepayers impact (RIM) and the Total Resource Cost (TRC) tests. As we indicated in
21 the report, the program did not pass the RIM, but did pass the TRC test. However, the
22 combination of HELP and HEAT did pass both tests.

23 **Q What does this mean?**

24 A The RIM test was applied to investigate the Commission’s stated goal of providing a
25 bill discount -- without being burdensome to non-recipient customers. As we stated in
26 the report, we are not certain what this goal means, since “burdensome” is not defined.
27 However, the strictest interpretation of this statement is that the Program has to
28 provide a benefit in decreased utility cost that is equal to or greater than the surcharge.
29 It does not. The net value of the HELP only program is -\$860,934 over the evaluation
30 period of three years (i.e., representing the total net cost to ratepayers over the three
31 year period). This translates to approximately \$287,000 annual net cost to ratepayers

1 (about 1.86 cents per ratepayer monthly). This is the estimate of the “non-recipient
2 burden.” The Commission will need to determine whether the 1.86 cents monthly net
3 cost per ratepayer should be considered burdensome or not.

4 **Q Should RIM be the sole threshold in order for a program to be approved by the**
5 **Commission?**

6 No. Even if one were to take the strictest possible definition of burdensome to non-
7 recipients and therefore declare HELP, as designed, to be non-cost effective, there are
8 several other considerations:

- 9 1.) HELP provides many other benefits to society, other ratepayers, and to society at
10 large. Some are not easily quantifiable (e.g., improving health). Lack of ability to
11 quantify does not imply zero value.
- 12 2.) To my knowledge very few commissions, if any, use the RIM test as the sole
13 measure of cost effectiveness.
- 14 3.) Cross subsidies are common in this industry. The ratemaking process is not
15 perfect. It is extremely difficult to accurately allocate costs to the constantly
16 shifting customer sectors. In practice, one class is frequently providing subsidy to
17 another.
- 18 4.) A cost-plus approach to rates, while appropriate overall, does not work well with
19 certain segments of the population. Charging people in need rates based on cost of
20 service including a rate of return does not make sense if they cannot afford to pay.
21 They do not have a choice of not buying the commodity, nor can they find a
22 substitute. So they end up consuming energy, but not always paying.
23 Consequently, a portion of their costs are born by other ratepayers. Incurring some
24 of this cost up-front in the form of a surcharge to fund a rate discount has several
25 advantages: a) it makes the cost explicit; b) it reduces the amount that goes unpaid
26 and is ultimately written off; and c) it provides some measure of human dignity
27 when it contributes to the participants’ ability to meet their energy costs without
28 the threat of shutoff notices and disconnections.
- 29 5.) Finally, the proposed stipulation is intended to increase cost effectiveness through
30 reduction of the surcharge and increasing the level of discount per participant. This
31 will improve the cost effectiveness.

1 **Q Mr. Mecham calls your inclusion of HEAT into the analysis a “shell game”**
2 **(Mecham Testimony, page 28, line 755) Would you like to comment?**

3 A HEAT and HELP are delivered in unison. It is not easy to separate out the impact of
4 one from the other. The vast majority of people who received HELP entered the
5 program through HEAT. Thus, one can make a strong argument that the two programs
6 should be looked at as one program and assessed as such. When combined, they pass
7 the RIM test, and the strictest definition of not being burdensome to Utah ratepayers is
8 met.

9 **Q Mr. Mecham suggests using a “common sense” test (Mecham Testimony, page**
10 **28, line 759). Do you understand this recommendation?**

11 A No. Mr. Mecham does not indicate his definition of “common sense.” Our analysis
12 clearly indicates that there are quantifiable benefits associated with the program. It is
13 not clear why Mr. Mecham would discount those benefits in favor of an undefined
14 “common sense.”

15 **Q Does Mr. Mecham agree with any of your analysis?**

16 A Yes. He agreed emphatically that the Program does not pass the RIM test (Mecham
17 Testimony, page 28). I infer from this agreement that he believes the RIM test is an
18 appropriate measure and that my methodology is accurate. The analysis indicates that
19 the current program fails the RIM test by a value of \$860,934 or 1.86 cents per
20 ratepayer per month. Since the stipulation before the Commission reduces the monthly
21 ratepayer surcharge by 2.00 cents per month, one can conclude that at the new level
22 ratepayers will see a net benefit of 0.14 cents per month (2.00 cents less 1.86 cents),
23 thus passing “burdensome” goal, the “benefits to ratepayers” goal and also the
24 “benefits exceed detriments” goal that Mr. Mecham references.

25 **Q Mr. Mecham claims that you did not “mention” qualitative benefits to the**
26 **Company or other ratepayers (Mecham Testimony pages 28-29). Is this true?**

27 A We intentionally did not investigate qualitative benefits to the Company or ratepayers,
28 focusing instead on quantifiable monetary benefits. As used in the report, the term
29 “qualitative” refers to benefits that either do not have a strict monetary value, or whose
30 value would be difficult to calculate. The examples included in the report accrue
31 mostly to the participants, i.e., improved health, reduced stress, etc. They are

1 mentioned in the report because some, such as improved health, have clear societal
2 monetary impacts even though it is difficult to calculate a specific value.

3 Consequently, the benefits of the program that we calculate are conservative.

4 **Q Please comment on Mr. Mecham’s objections to your analysis of moves.**

5 A Mr. Mecham objects to our use of \$30 as the cost savings to the Company for reduced
6 mobility. He asserts that the correct value is \$10. The difference is in the assumption
7 of which charge represents the cost incurred by the Company. The \$30 was obtained
8 from Utah Power (Schedule 300) for the “Reconnection Charges: Residential, Normal
9 Business Hours.” Had we used “All Other Times” the charge used would have been
10 \$75. The \$10 charge referred to by Mr. Mecham is the standard new connection rate
11 (Schedule 1). Since tariffed rates are generally cost based we assume that the
12 Company incurs a cost equal to these rates. In this case of involuntary moves, we
13 assume the Company incurs a cost of disconnection for which it has no
14 reimbursement. Consequently, this cost is born by all ratepayers. Valuing the cost at
15 \$10, as Mr. Mecham suggests, would reduce the program benefits by \$30,000, a small
16 fraction of the identified \$4 million in total benefits.

17 **Q Does Mr. Mecham correctly quantify the cost savings of the move?**

18 A. No. Mr. Mecham computes the impact of our “mistake” at \$2 million. [Mecham
19 Testimony, page 31] We estimated an avoidance of nearly 1,500 moves. Valued at
20 \$30, the benefit to the Company is \$45,000, not \$2 million. The \$2 million dollars
21 referred to by Mr. Mecham is benefit to *society* that we estimated at approximately
22 \$1,460 per move based on an 2002 Oakridge National Laboratory study on non-energy
23 benefits of energy assistance programs. Mr. Mecham stated that removing the \$2
24 million “would drastically reduce their test results and greatly increase their calculated
25 net costs to donor ratepayers.” Removing the \$2 million would have no impact on the
26 net costs to ratepayers, as this value is not used in the ratepayer tests. Changing the
27 \$30 per avoided move cost to the Company to some other value, would impact the net
28 cost to ratepayers, but only by a small, insignificant amount. For example, if we
29 completely (and incorrectly) remove the benefit of reduced mobility from the
30 ratepayers test, the *net* cost to ratepayers goes from 1.86 cents to 1.99 cents. This is
31 hardly the drastic impact suggested by Mr. Mecham.

1 **Q Mr. Mecham questioned your allegation that the program has economic benefits**
2 **from increased spending by recipients (Mecham Direct, page 34, line 948). Please**
3 **respond.**

4 A Quantec suggested that the “benefits included under the Societal/TRC perspective are
5 only a fraction of those likely to have resulted from the Program. For example, health
6 and safety, reduced stress, increased ability to afford other necessities, and *potentially*
7 *some economic benefits resulting from the increased spending* are not included.”
8 (Utah HELP Program Evaluation, page IV-10, emphasis added). We did not directly
9 address these issues as they were not within our scope of work. It is my opinion, as an
10 economist, that the \$1.8 million in the hands of people of little means is likely to get
11 spent in entirety, thus creating a significant spending multiplier. In contrast, the same
12 amount of money in the hands of more affluent families is likely to be partially saved
13 or invested rather than spent, and would thus have a smaller multiplier. In any case,
14 this was not included in our assessment of the societal benefits.

15 **Q. You have addressed issues raised by Mr. Mecham. Are there other issues that the**
16 **Commission should be aware of?**

17 A. Yes. I would like to offer the following observations:

18 *1. The current goal is vague and difficult to measure.* Based on reviewed
19 documents, the Program was designed to provide a bill discount without *being overly*
20 *burdensome* to non-recipient customers. I believe that a clear definition of
21 “burdensome” is needed.

22 *2. The flat discount offers the advantage of simplicity, but not effectiveness or*
23 *equity.* The Program offers a straight \$8 per month household bill discount. Another
24 option would be a percentage of bill discount. Some programs provide targeted rate
25 discounts, thus allowing higher levels of savings for lower income groups, or they
26 combine the discount with other mechanisms to encourage improved payment

1 behavior. The only advantage a flat discount offers is ease of delivery and clarity to
2 participants.

3 **Q. Do you have recommendations for the Commission?**

4 A. *1.) Continue to offer the program.* The program offers a critical service to a
5 significant number of Utah families in need (nearly 20,000 at any one time, and more
6 than 50,000 since its inception). The program has reduced the average participant's
7 energy burden by approximately 17%. Most of the credit recipients make less than
8 \$8,500 annually. I recommend that the program continue while the Commission
9 reviews its cost effectiveness criteria and determines whether the program requires
10 redesign.

11 *2.) Explicitly state the Program Goals.* I recommend clarification of Program
12 goals. If the Commission determines it is critical that the Program passes the rate
13 impact cost effectiveness test, then the program needs to be redesigned to better
14 achieve this goal. Available program design options include integrated services
15 coupled with better targeting.

16 **Q. Does this conclude your Testimony?**

17 A. Yes.