ATTORNEY GENERAL OF MISSOURI

JEFFERSON CITY
65102

JEREMIAH W. (JAY) NIXON
ATTORNEY GENERAL

P.O. Box 899
(573) 751-3321

February 27, 2004

FILED

FEB 2 7 2004

Missouri Public Service Commission

Public Service Commission
Governor Hotel
Jefferson City, MO 65102

RE: Aquila Networks Electric Rate Case, Case No. ER-2004-0034

Dear Sir/Madam:

Enclosed for filing please find an original and 9 copies of Missouri Department of Natural Resources' Affidavit of Anita Randolph in the above-styled matter. Please stamp "filed" on the extra copy of the first page for my files. Thank you.

Sincerely,

JEREMIAH W. (JAY) NIXON
Attorney General

Shelley A. Woods/Pah

SHELLEY A. WOODS
Assistant Attorney General

SAW:pah
Enclosure
c: Counsel of Record

STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

In the Matter of Aquila, Inc. d/b/a Aquila Networks L&P and Aquila Networks MPS, and Its Tariff Filing to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2004-0034

FILED

FEB 27 2004

Missouri Public Service Commission

AFFIDAVIT OF ANITA RANDOLPH

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

Anita Randolph, being duly sworn on her oath, hereby states that she has participated in the preparation of the foregoing Testimony in question and answer form; that the answers in the foregoing Testimony were given by her; that she has knowledge of the matters set forth in such answers; and that such matters were true and correct to the best of her knowledge, information and belief.

Anita C. Randolph

Anita Randolph

Kay A. Johannpeter

Notary Public

KAY A. JOHANNPETER NOTARY PUBLIC SEAL STATE OF MISSOURI

My commission expires:

KAY A. JOHANNPETER
Notary Public - Notary Seal
STATE OF MISSOURI
Moniteau County
My Commission Expires: Aug. 4, 2007

Subscribed and sworn before me this 27th day of February 2004.

Exhibit 1077

ATTORNEY GENERAL OF MISSOURI

JEFFERSON CITY
65102

JEREMIAH W. (JAY) NIXON
ATTORNEY GENERAL

P.O. Box 899
(573) 751-3321

December 11, 2003

FILED

DEC 12 2003

Missouri Public Service Commission

Public Service Commission
Governor Hotel
Jefferson City, MO 65102

RE: Aquila Networks Electric Rate Case, Case No. ER-2004-0034

Dear Sir/Madam:

Enclosed for filing please find an original and 9 copies of Missouri Department of Natural Resources' Motion to File Late Testimony in the above-styled matter. Please stamp "filed" on the extra copy of the first page for my files. Thank you.

Sincerely,

JEREMIAH W. (JAY) NIXON
Attorney General

Shelley A Woods

SHELLEY A. WOODS
Assistant Attorney General

SAW:pah
Enclosure
c: Counsel of Record

STATE OF MISSOURI
PUBLIC SERVICE COMMISSION

In the Matter of Aquila, Inc. d/b/a Aquila Networks L&P and Aquila Networks MPS, and Its Tariff Filing to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2004-0034

AFFIDAVIT OF ANITA RANDOLPH

STATE OF MISSOURI)
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Anita Randolph

Notary Public

KAY A. JOHANNPETER NOTARY PUBLIC SEAL STATE OF MISSOURI

My commission expires:

KAY A. JOHANNPETER
Notary Public - Notary Seal
STATE OF MISSOURI
Moniteau County
My Commission Expires: Aug. 4, 2007

Subscribed and sworn before me this 5th day of December 2003.

Exhibit No.:	
Issues:	Commitment to Provide Low or No Cost Weatherization Assistance to Aquila Electric Low-Income Customers, Energy Efficiency Services to Residential and Commercial Customers and Wind Energy Assessments.
Witness:	Anita C. Randolph
Sponsoring Party:	Missouri Department of Natural Resources' Outreach and Assistance Center, Missouri Energy Center
Type of Exhibit:	Testimony
Case No.:	ER-2004-0034

AQUILA NETWORKS ELECTRIC RATE CASE

DIRECT TESTIMONY

OF

ANITA C. RANDOLPH

MISSOURI DEPARTMENT OF NATURAL RESOURCES

ENERGY CENTER

December 9, 2003

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
TESTIMONY OF
ANITA C. RANDOLPH
DIRECTOR
MISSOURI DEPARTMENT OF NATURAL RESOURCES
ENERGY CENTER

CASE NO. ER-2004-0034

Q. Please state your name and address.

A. My name is Anita C. Randolph. My business address is Missouri Department of Natural Resources, Energy Center, 1659 East Elm Street, P.O. Box 176, Jefferson City, Missouri 65102-0176.

Q. By whom and in what capacity are you employed?

A. I am employed by the Missouri Department of Natural Resources as the director of the Missouri Energy Center, a division of state government with its executive office located in Jefferson City, Missouri.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of the Missouri Department of Natural Resources, an intervenor in these proceedings.

Q. Please describe your educational background and business experience.

A. I attended the University of Missouri and received a Bachelor of Journalism degree in 1974. In addition, I attended the University of Oklahoma and received a Master's in Public Health degree in 1988 with a specialty in environmental management. I have worked as a research analyst in the Missouri House of Representatives' House Research office. In this capacity, I developed legislative approaches for environmental, energy and natural resource issues for the Energy and Environment, State Parks, and Mining legislative committees. Prior to becoming the director of the Missouri Energy Center, I was employed by the Missouri Department of Transportation in its Office of Transportation Planning and Policy Development. In this position I worked directly with Missouri's Congressional Delegation, the Missouri Governor's Office and the Missouri General Assembly on legislative and appropriation issues affecting Missouri's transportation system. On July 13, 1998, I was

appointed director of the Energy Center, formerly the Division of Energy, by Mr. Stephen Mahfood, director of the Missouri Department of Natural Resources.

Q. What is the purpose of your direct testimony in these proceedings?

A. The purpose of my testimony is to focus on the proposed $65 million annual electric rate increase by Aquila, Inc., d/b/a Aquila Networks – MPS [redacted]; low-income residential customers served by Aquila Inc.; the need for the company to implement a low-income residential weatherization assistance program consistent with federal weatherization assistance guidelines; the need to promote utility-based energy efficiency services for residential and commercial customers; and the need to conduct assessments of Missouri's wind energy resources in the Aquila Networks – MPS service territory. The Energy Center is seeking commitment by Aquila Inc. to provide funding for weatherization assistance for its low-income residential customers, utility-based energy efficiency services and programs for residential and commercial customers and wind resource assessments.

Q. Please describe the relationship between Aquila Inc.'s current commitment to low-income weatherization assistance and energy efficiency services for residential and commercial customers and the proposed rate increase.

A. Aquila, Inc. is proposing an electric rate increase for [redacted] Aquila Networks – MPS; [redacted] Aquila Networks – MPS is seeking a $65 million annual revenue increase [redacted] the largest portion of the proposed rate increase is directed toward residential and small general use customers, including small commercial customers.

Of the $65 million annual revenue increase proposed for Aquila Networks – MPS, $34.6 million, or 53.2 percent is targeted toward residential customers and $9.6 million or 14.8 percent is targeted toward small general use customers, including small commercial customers. Combined, this represents $44.2 million or nearly 70 percent of the revenue increase.

[redacted]

Aquila, Inc. has filed new electric tariffs with the Missouri Public Service Commission that will increase annual revenues to the company by $[redacted] million which reflect "higher costs and investments made by Aquila to provide safe and reliable electricity to Missouri customers", as described by the company's filing. Recognizing, to some extent, the adverse financial impact a $[redacted] million annual rate increase will have on the poorest households within the company's service territories, Aquila, Inc. has offered [redacted] for low-income residential utility billing assistance – for [redacted] MPS [redacted] electric *and* gas customers. Aquila, Inc. currently offers a limited number of energy efficiency programs to their electric customers, including a low-income weatherization assistance program. However, these programs appear to have limitations including funding and participation. Aquila, Inc. does not offer any new or expanded energy efficiency service or product by the current rate filing that would assist low-income residential, residential or small commercial customers in

reducing their consumption of electricity or their monthly utility bill in light of potentially higher energy bills as a result of this general rate filing.

Q. Please describe the format and content of your direct testimony as it relates to this electric rate case.

A. My direct testimony will first address low-income energy issues and the difficulties low-income customers face in paying their utility bills, the need for weatherization assistance for the company's low-income residential customers and the benefits of weatherization to low-income households as well as other rate-payers and the utility company. Following the low-income issue, I will address residential and commercial energy efficiency and the opportunity to help customers in using energy more efficiently to help reduce the economic impact of rising energy costs ultimately passed on to all customers through higher energy rates. Next, I intend to address the need for the company to examine the potential development of alternative energy generation in Missouri and the subsequent benefits to the company and its customers. And lastly, I will summarize these issues and propose actions and funding amounts to support the proposals offered in my filed direct testimony.

Q. Please describe the relationship between home heating bills and low-income residential utility customers in Missouri.

A. Winter home heating bills in Missouri impose significant burdens on low-income households. In a report prepared by Fisher, Sheehan & Colton, Structuring a Public Purpose "Distribution Fee" For Missouri, July 1997, the authors noted that "According to the U.S. Department of Housing and Urban Development (HUD), a household that faces a shelter burden exceeding 30 percent of income is over-extended. Shelter burdens include rent or mortgage payments and all utility payments other than telephone. A household that is paying

20 to 25 percent of its income simply toward home heating (not taking into account non-heat electric burdens) will not be able to stay below this 30 percent limit." (Structuring a Public Purpose "Distribution Fee" For Missouri, July 1997, page 6)

Q. Please describe the significance of home heating burdens on low-income households.

A. The significance of home heating burdens was also identified by Structuring a Public Purpose "Distribution Fee" For Missouri. "The significance of home heating burdens imposed on low-income households is very apparent when one considers the full range of incomes at which low-income residents of Missouri live. The 1997 study reported that most households that qualify for the Low-Income Home Energy Assistance Program (LIHEAP) in Missouri by living at or below 150 percent of poverty lived below the ceiling rather than at the ceiling. (Current LIHEAP eligibility is 125 percent of federal poverty guidelines) The report sets forth the actual distribution of winter heating burdens for Missouri LIHEAP recipients by income category using an average winter heating (natural gas) bill of $210.94 (Table 4, Winter Gas Bill As Percentage of Income LIHEAP Recipients By Income Range, Source: R. Colton and M. Sheehan, On the Brink of Disaster: A State-by-State Analysis of Natural Gas Winter Home Heating Bills) A household with an annual income of $2,000 or less will have winter heating burdens of nearly 85 percent. Households living with annual incomes of $2,000 to $4,000 will have winter heating burdens of nearly 30 percent; and households living with annual incomes of $4,000 to $6,000 will have winter heating burdens of more than 16 percent." (Structuring a Public Purpose "Distribution Fee" For Missouri, July 1997, page 6 and 7).

"The number of households with these extremely low levels of annual incomes (and thus high heating burdens) is significant." (Source: Structuring a Public Purpose "Distribution Fee" for Missouri", July 1997, page 7)

Q. Is there additional evidence that identifies the need for weatherization assistance?

A. Yes. An April 2003 report titled "On the Brink: The Home Energy Affordability Gap in Missouri" (Fisher Sheehan & Colton, April 2003), it was found that home energy is a crippling financial burden for low-income Missouri households. As noted in the report, "Missouri households with incomes of below 50% of the Federal Poverty Level pay 38% or more of their annual income simply for their home energy bills." And home energy unaffordability was not an exclusive characteristic of the very poor. "Bills for households between 50% and 100% of Poverty take up 13% of income. Even Missouri households with incomes between 150% and 185% of the Federal Poverty Level often have energy bills above the percentage of income generally considered to be affordable."

Existing sources of energy assistance do not adequately address the energy affordability gap in Missouri. "Actual low-income energy bills exceeded affordable energy bills in Missouri by nearly $273 million at 2001/2002 winter heating fuel prices. In contrast, Missouri received a gross allotment of federal energy assistance funds of $38.7 million for Fiscal Year 2003. During the 2002/2003 winter heating season, the unaffordability gap increased to more than $321 million.

"The energy affordability gap in Missouri is not created exclusively, or even primarily, by home heating and cooling bills. At 2001/2002 winter heating prices, while home heating bills were $354 of a $1,273 (annual utility) bill (27.8%), electric bills (other than cooling)

were $543 (42.7%). Annual cooling bills represented $117 in expenditures (9.2% of the total bill), while domestic hot water represented $258 in expenditures (20.2%)."

In other words, the largest part of a residential electric bill is for general use throughout the household (baseload). Therefore, as electric utility rates increase in Missouri, the home energy affordability gap grows. As this gap increases, more low-income households are unable to pay either a portion or their entire energy bill.

Utility billing assistance funding has great merit, but does very little to address the need for long-term and sustainable benefits for low-income households. Weatherization improvements help low-income households to use energy more efficiently resulting in long-term benefits to both the customer and to the utility by reducing utility bills and arrearages.

Q. Do a large number of low-income homes in Missouri still need to be weatherized?

A. Yes. A significant number of low-income households in Missouri are in need of energy-efficiency improvements.

Information gathered from the state Weatherization Assistance Program (WAP) which is administered by the Missouri Department of Natural Resources' Energy Center, shows that from 1978 (beginning of the program in Missouri) through June 30, 2003, approximately 143,000 homes were weatherized in Missouri. The Energy Center estimates that approximately 450,000 eligible homes remain (as identified by the U.S. Census Bureau, Table P93. Ratio of Income in 1999 to Poverty Level by Household Type – Missouri). (In Missouri State Fiscal Year 2001, the eligibility was increased from 125% to 150% of the poverty level in response to the 2000 – 2001 heating crisis, resulting in approximately 100,000 additional homes meeting the eligibility criteria.) Clearly, on-going and additional sources of low-income energy-efficiency services are needed.

Q. What is the estimated number of Missourians currently on weatherization waiting lists?

A. Statewide, more than 3,000 families are currently on weatherization waiting lists.

Q. How many new clients are added to that list annually?

A. On average, more than 2,300 households are added to that waiting list annually.

Q. At the current rate, how long would it take the state's weatherization program to meet the needs of eligible clients in the Aquila, Inc. service territory?

A. According to the 2000 U.S. Census Bureau, 458,416 Missouri low-income households are eligible to receive weatherization assistance statewide. Approximately 27 percent or 124,622 households (150 percent of poverty as of 2000 census data, all fuel types including electric and/or natural gas heated homes, including both Aquila and non-Aquila utility customers) are located in counties within the Aquila electric service territory. At current resource levels, and assuming no additional homes are identified as eligible to receive weatherization assistance, it is estimated that it would take approximately 62 years to serve those low-income households located within the electric service territory of Aquila Networks [redacted]

Q. Please describe changes made to the Weatherization Assistance Program that focus on electricity.

A. In addition to electric related energy efficiency measures such as furnaces, water heaters, insulation and replacement windows and doors just to name a few, the U.S. Department of Energy has added electric base-load (or electric plug-load) measures to the federal program regulations effective January 1, 2001. This is an evolution in the federal and state guidelines, allowing the program to move toward whole-house weatherization. Typically, addressing just the heating and/or cooling cost of a dwelling unit accounts for only about half of the

unit's energy expenditures. The addition of cost-effective electric base load measures gives local weatherization agencies greater flexibility to help low-income households reduce their energy costs, and to partner with sources of leveraged funds, including electric utilities. These measures include replacement lighting, replacement electric water heaters and other electric appliances such as refrigerators. Missouri is currently evaluating these measures for inclusion in Missouri's federal Weatherization Assistance plan.

Q. What are some of the general benefits of low-income residential weatherization?

A. As noted earlier in my testimony, home heating is a high cost for individuals with low income. Overall, low-income households that qualify for weatherization spend more of their income on energy needs compared to non-low-income households. The decision and ability to pay one's utility bill often compete with other necessities. Many low-income individuals live in older homes equipped with older, less-efficient heating systems and generally lack energy-efficiency items such as insulation.

Weatherization reduces space heating fuel consumption by an average (including all heating fuels) of 18.2 percent. Specifically for homes using electricity for heat, annual space heating fuel consumption is reduced by 35.9 percent. For homes using natural gas for heat, weatherization reduces space heating fuel consumption by 33.5 percent. (Source: "Progress Report of the National Weatherization Assistance Program," Oak Ridge National Laboratory, September 1997.)

Weatherization is a cost-effective means to help low-income individuals or families pay their energy bills year after year for the life of the energy-efficiency product. Weatherization reduces the amount of state and federal assistance needed to pay higher utility bills, keeps money in the local economy, results in a positive impact on the household's promptness in

paying utility bills, reduces arrearages and helps to reduce environmental pollution through energy efficiency.

Q. Are there utility benefits from low-income energy efficiency services?

A. Yes. In addition to looking at energy-efficiency from a household perspective, it is beneficial to examine the benefits of a low-income energy-efficiency program from the perspective of energy service providers. Extensive research has found that low-income energy-efficiency programs result in substantial non-energy savings to utilities. These non-energy savings include reductions in working capital expense, uncollectible accounts, credit and collection expenses, and others.

The Pennsylvania Low-Income Usage Reduction Program (LIURP) for all Pennsylvania utilities is an example of benefits derived for low-income households to whom energy efficiency was delivered. A payment of less than 100 percent means the specified low-income household did not completely pay the current month's utility bill. In contrast, a payment exceeding 100 percent means the low-income household not only paid the current bill, but paid off its arrears as well. For every Pennsylvania utility but one, the installation of energy efficiency products substantially improved the payment patterns of the treated low-income households. Indeed, the delivery of energy efficiency generally caused a substantial increase in the payment coverage of the household energy bill. In most cases, the low-income household moved from falling further and further behind by failing to pay the current bill, to paying the entire current bill and beginning to retire the arrears. (Source: "Structuring a Public Purpose 'Distribution Fee' for Missouri", Fisher, Sheehan & Colton, Public Finance and General Economics consultants, July 1997.)

Q. Please describe utility billing arrearage for Aquila, Inc.

A. According to Aquila, Inc., customers receiving electric service from the company have had difficulty in meeting their monthly utility bill.

Aquila, Inc. reports that [redacted] 47,000 electric accounts were in arrears each month during calendar year 2002 [redacted] (Data Request, MDNR-55, Dawn Hall, Aquila, Inc., November 25, 2003).

Aquila – MPS experienced an average monthly arrearage balance of $4.05 million with over 47,000 customers unable to fully pay their electric utility bill. The number of accounts in arrearage grew dramatically from July 2002 with an average of approximately 42,000 accounts with an outstanding balance of $3.5 million to over 52,000 accounts with an outstanding balance nearing $6 million by October 2002.

[redacted]

Presuming that a low-income annual heating bill in Missouri is estimated at $354 (at 2001/2002 winter heating prices) or 42.7% of an annual total electric household utility bill as noted by the April 2003 report "On the Brink: The Home Energy Affordability Gap in Missouri", a savings of 35.9 percent due to weatherization improvements could help reduce space heating demand. The improved efficiency in electric space heating could result in annual savings of $127 per year ($354 x .359 = $127). Over the life of such improvements, typically 20 years, the accrued savings would be approximately $3,900 for the low-income household ($127 x 20 = $2,542 at 2001/2002 winter heating prices), assuming no further

increase in space heating cost . Such savings have been shown to help the low-income household meet its monthly utility bill and help reduce arrearage collections for the utility.

Q. Please describe the relationship between billing arrearage and utility service disconnects.

A. Nearly [redacted] 9,000 Aquila electric customers experienced service disconnects due to billing arrearage (Data Request, MDNR-32, Carl Turner, Aquila, Inc., December 1, 2003). During calendar year 2002, Aquila Networks – MPS disconnected nearly 9,000 residential customers due to utility billing arrearage with nearly 3,000 disconnects during the months of September and October – just prior to the 2002/2003 winter heating season. [redacted]

Q. Please describe Aquila, Inc.'s gross uncollectible revenues from their residential customers.

A. During the 12-month period ending December 31, 2002, Aquila, Inc. reported uncollectible revenue from their electric customers at nearly $3.5 million (Data Request, MDNR-57, Dawn Hall, Aquila, Inc., November 25, 2003). Low-income residential weatherization may have helped to reduce the amount of uncollectible revenues by reducing energy demand and lowering monthly utility bills.

Q. Please describe natural gas expense increases and the impact on both residential electric and natural gas customers.

A. The patterns of natural gas price volatility and its impact on all consumers started several years ago. The volatility of natural gas supply and price has impacted consumers that rely on gas to heat their homes and businesses and energy utilities that generate electricity through natural gas combustion units. This new demand for natural gas places additional pressure on natural gas supplies and prices. Missouri's electric utilities used about 7 billion cubic feet

(Bcf) of natural gas in 1997, 16 Bcf in 1998, 19 Bcf in 1999 and 30 Bcf in 2000 – an average increase of 23 percent per year. (Governor's Energy Policy Council, June 2003 report, pg. 6). Beginning with the summer of 2000, natural gas prices began rising across the country. As we entered the 2000-2001 winter heating period, natural gas spot market prices had increased from approximately $2.00 per Mcf (1,000 cubic feet) to over $10. According to the Missouri Public Service Commission, the effects of the coldest November and December (2000) in Missouri history were still being felt in July 2001 by Missourians struggling to pay high heating bills from the winter of 2000-2001. Information presented in Chairman Simmons' July 2001 letter to Missouri's Congressional delegation indicated many of the investor-owned energy utilities reported higher numbers of residential customers (79,000 natural gas heated households) unable to fully pay for their energy bills. Although Chairman Simmons' concerns were focusing on natural gas heated households, this situation also occurs in electric heated households. Weatherization can help customers to use energy more efficiently and reduce their winter heating bills.

Wholesale natural gas prices spiked 287 percent higher during the winter of 2002-2003 than during the winter of 2001-2002, moving from $2.36 to $9.13 per million Btu (MMBtu) (Missouri Energy Bulletin, March 26, 2003). The natural gas spot price has remained high in historical terms. Throughout most of 2003, the average spot price for natural gas was above $4.00 per MMBtu, reaching a peak of over $9.00 per MMBtu in late February 2003.

Q. Please describe the current weatherization program administered by Aquila, Inc.

A. The weatherization program offered by Aquila, Inc. is limited to eligible residential electric customers and was initiated on July 1, 1999. The program is not offered to residential natural gas customers served by [redacted] Aquila Networks – MPS.[redacted] The

program offers a limited number of energy conservation measures including compact fluorescent lamps (light bulbs), electric water heater tank wrap, electric water heater pipe wrap, low flow shower-head, kitchen aerator, floor insulation, attic insulation, wall insulation and duct repair. The program is funded through rates and was provided a budget of $23,840 during calendar year 2002. From July 1, 1999 through October 2002, Aquila, Inc. reports that 28 customers participated in this program with only 2 participating during the 12-month period ending December 31, 2002. Of the $23,840 budgeted, only $1,894 was expended. Clearly, the current "weatherization" program offered by Aquila, Inc. has not had the intended impact nor the potential participation rate given the current number of low-income residential customers served by the company (Data Requests, MDNR-33 through MDNR-38, MDNR-46, MDNR-47, MDNR-61, MDNR-62, MDNR-66, MDNR-74 and MDNR-75, Matthew Daunis, November 25, 2003, Aquila, Inc.).

Q. Please describe the funding level required to support a low-income weatherization assistance program by Aquila, Inc.

[redacted] currently provides service to approximately [redacted] residential electric customers in [redacted] Missouri counties (Data Request, No. MDNR-26, Carl Turner, Aquila, Inc., November 25, 2003). [redacted] According to the community action agencies currently providing weatherization services within Aquila, Inc.'s service territories, approximately 200 Aquila, Inc. low-income households are on waiting lists to receive weatherization services. In order to meet these customers' needs and additional Aquila, Inc. customers that may be added to the weatherization assistance waiting list in future months, we request annual funding of $[redacted],000 for low-income weatherization. This utility-based

weatherization assistance fund would supplement federal weatherization program funds and allow approximately [redacted] Aquila, Inc. low-income households to receive weatherization assistance. This is based on a leveraging amount of $1,350 per household from Aquila, Inc.'s weatherization fund (this represents approximately a 50/50 cost share between Aquila, Inc. and federal weatherization assistance funds that would be provided to an eligible low-income household receiving electric service from Aquila, Inc.). It is requested that funds should be used to exclusively weatherize Aquila, Inc.'s low-income electric heated homes.

Q. How should the program be designed?

A. This program should be designed to be consistent with federal guidelines for the federal Low-Income Weatherization Assistance Program.

Q. Please describe the need for residential energy efficiency.

Investments in residential energy efficiency help to improve the efficient use of energy by consumers. Energy efficiency recognizes the truism that Missouri households do not seek to consume energy. Instead, what they seek is to have light, hot water, refrigeration and heating and cooling. If these end uses can be delivered using less energy, the needs of Missouri consumers will have been satisfied.

U.S. Department of Housing and Urban Development (HUD) 1990 data showed that roughly one of every six Missouri units of housing that are affordable to households living above 80 percent of median income were constructed before 1940. Moreover, of the total of roughly 550,000 units affordable at that income level, nearly 90,000 have some type of "physical problem" under HUD's definitions. Finally, nearly 55,000 households living above 80 percent of median income pay more than 30 percent of their income for shelter costs, and roughly 5,000 pay more than 50 percent (Source: "Structuring a Public Purpose 'Distribution

Fee' for Missouri", Fisher, Sheehan & Colton, Public Finance and General Economics consultants, July 1997.)

In its August 29, 2001, final report, the Missouri Public Service Commission's Natural Gas Commodity Price Task Force recognized the need for energy efficiency programs by its recommendation that "the (Missouri Public Service) Commission should pursue incentive measures for encouraging energy efficiency." The report included this explanation of the need for efficiency programs: "Effective energy efficiency programs can address the barriers that inhibit customers from making investments in energy efficiency improvements – lack of money or competing demand for available funds, the perception that up-front costs are more important than long-term savings and lack of technical expertise."

Q. Briefly describe the benefits of residential and commercial utility-based energy-efficiency services.

A. The Missouri Energy Policy Task Force recommended in its October 16, 2001 final report, that "Missouri pursue incentives funded through various sources to encourage the increased development of energy efficiency and renewable energy to provide for a more secure energy future." The Task Force report cited the following benefits to customers, utilities, the economy and the environment: "Missourians would benefit greatly from investments in energy efficiency and renewable resource programs. Efficiency programs provide assistance to customers by helping to reduce their energy usage and utility bills, which is particularly important when energy prices are high and volatile. System reliability and resilience are improved by reducing vulnerability to disruptions in energy supplies through efficiency and a diversified fuel mix. Long-term costs can be lowered by reducing expenditures by gas and electric utilities to upgrade their infrastructure to meet increasing demand. Investments in

energy efficiency and the resulting lower energy costs coupled with the development of domestic renewable energy will improve the ability of businesses to compete, keep energy dollars closer to Missouri, increase customers' discretionary income, preserve natural resources and reduce pollution."

Well-designed energy-efficiency programs have been shown to produce substantial economic benefits for local and state economies. *The Missouri Statewide Energy Study (1992)* prepared by Missouri's Environmental Improvement and Energy Resources Authority concluded that energy efficiency would "sustain more employment opportunities than either the continued current level of energy use or the development of new energy supplies."

In addition to these benefits, state investment in energy-efficiency tends to protect households against "insurable events." In August 1996, Lawrence Berkeley Laboratory released findings showing that energy-efficiency investments in housing often lead to the correction of conditions that place buildings at risk. Such conditions include fire, carbon monoxide poisoning, and the like.

Energy-efficiency investments can also promote the affordability of homeownership in Missouri. A study by Fisher, Sheehan and Colton, Public Finance and General Economics, released in November 1996, documented how energy-efficiency investments affect the affordability of first-time home ownership. The study found that, in the Census Division of which Missouri is a part, a $3,000 energy- efficiency investment made at the time of home purchase, financed at 9 percent interest, would yield an effective reduction in the price of the home of 6 percent and an effective interest-rate discount of 0.48 percent. In other words, in order to generate the same dollar savings as the energy efficiency investment, the interest rate charge on the home mortgage would need to be reduced by 0.48 percent.

A study completed by Lawrence Berkeley Laboratories for the U.S. Department of Energy addressed the economic benefits of commercial efficiency programs. In a comprehensive review of evaluations for 40 large commercial programs that accounted for one-third of 1992 utility demand side management spending, the majority of the programs reviewed, which accounted for 88 percent of utility and consumer spending on programs included in the study, were cost-effective. For all the programs analyzed, the savings weighted average ratio of total resource benefits to total resource costs was 3.2 to 1 (Source: The Cost and Performance of the Largest Commercial Sector DSM Programs, Lawrence Berkeley National Laboratory, December 1995). Lawrence Berkeley Laboratories found that overall, utilities demonstrated a capability to undertake highly cost-effective energy-efficiency programs.

Q. Briefly describe utility-based energy-efficiency services available today.

A. Several utilities throughout the nation continue to offer energy efficiency services and programs to their customers. These energy efficiency measures include residential and commercial energy audits, consumer education, and rebates or low-interest loans for the purchase of new products such as efficient water heaters, lights, showerheads, air conditioners, and heat pumps. Energy savings of approximately 40% can be realized through energy efficiency improvements. (Source: U.S. Department of Energy.)

Missouri energy utilities including Springfield's City Utilities, City of Independence Power & Light Department, Columbia Water and Light, Kansas City Power & Light and Missouri Gas Energy offer energy efficiency services to their customers as described above (Source: Utility Energy Efficiency and Renewable Energy Programs Survey, Missouri Department of Natural Resources, Outreach and Assistance Center, Energy Center, August 2002). Similar programs are offered by other utilities in other states, Wisconsin Public Service Corporation,

Portland General Electric, and Northern State Power; and People's Natural Gas (Iowa), a division of Aquila Networks; Northern Minnesota Utilities and Peoples Natural Gas, divisions of Aquila Networks, to name just a few.

Q. What is the cost comparison of energy efficiency to new electric generation?

A. Energy efficiency is appropriately viewed as an energy resource like coal, oil or natural gas. In contrast to supply options for new generation such as drilling for more natural gas or mining coal, energy efficiency helps contain energy prices by curbing demand instead of increasing supply. This means that energy efficiency provides additional economic value by preserving natural resources and reducing emissions. (Source: "Utility Deregulation a Bust for Energy Efficiency Programs", Environmental Working Group, October 1998.) The primary efficiency programs having the most potential for energy savings include efficient residential heating, ventilating and air conditioning equipment (HVAC), tune-ups and repair; proper installation, maintenance and use of commercial HVAC and other building systems; and commercial and industrial sector lighting retrofits. In addition, energy efficient design and construction of new buildings have significant potential for energy savings in Missouri. To achieve these savings, training for building contractors, developers and architects is essential and could be included in a utility-based efficiency program.

It is difficult to accurately compare investments in energy efficiency measures, often referred to as demand-side management (DSM), to investments in building new generation plants or supply-side resources. Economic comparisons of efficiency and supply-side investments require that consideration of the life-cycle cost of the options are addressed on an integrated basis, such as the interaction of the change in usage patterns with the generation function of the utility must be considered over the expected life of the options. (Source: "Electric Utility

Demand Side Management 1998," U.S. Department of Energy, Energy Information Administration.)

While cost calculations will vary by region and individual utility, the U.S. Department of Energy (USDOE) has used the cost of energy in cents per kilowatt hour (kWh) saved as an index for making approximate comparisons between the cost of energy efficiency programs and new generation plants.

USDOE data collected from surveys of 63 percent of reporting utilities in 1994 indicated that the cost of energy efficiency programs was competitive with or below the cost of new generating capacity. The average costs of achieving conserved energy were reported at under 3 cents per kWh while the cost for new generation facilities ranged from 2 to 15 cents per kWh on a significant number of days per year. During capacity shortages, prices could increase to 50 cents per kWh or higher, reflecting the cost of building new generation to serve peak loads or the price signals that might be required to match demand to available supply if power must be purchased on the spot market.

In a more recent report issued by the Rocky Mountain Institute in 2001, it was found that the average cost of implementing energy efficiency has been 2 cents per kWh with the best-designed programs costing less. In contrast, each kWh generated by an existing power plant costs an average of 5 cents or more.

In April 2001, the Missouri Public Service Commission reported that the current long-term wholesale market price for electricity in the Midwest was 4 cents per kWh, or $40 per megawatt, not including transmission costs. Using these cost estimates, energy efficiency investments ranging from 2 to 3 cents per kWh are more cost-effective than building new

generation at 4 to 5 cents per kWh without factoring in the additional environmental and system benefits due to less stress on the transmission and distribution systems.

Q. What are some of the statistics related to energy efficiency investments and potential in Missouri?

The Alliance to Save Energy, a nationally recognized coalition of prominent business, government, environmental, and consumer leaders who promote the efficient and clean use of energy worldwide to benefit consumers, the environment, economy and national security, issued a report in 1998 addressing energy-efficiency improvements to homes. It was found that residential energy-efficiency improvements could reduce energy consumption in Missouri by an estimated 567 billion Btu's, or the equivalent of approximately 100,000 barrels of crude oil each year. The Alliance reported that, of the 34 states studied that had not adopted the 1993 Model Energy Code, Missouri ranked 5th highest in terms of potential total energy savings and 5th highest in potential energy savings per home.

In a report to the Missouri Legislature pursuant to House Concurrent Resolution 16 titled "Economic Opportunities Through Energy Efficiency and the Energy Policy Act of 1992", Missouri specific opportunities and benefits of commercial energy efficiency programs were addressed. The report found that if Missouri had met its mandatory obligation set forth in the Energy Policy Act of 1992 (to adopt a state-wide commercial building efficiency standard by 1995), the result would have been a reduction in the cumulative consumption of energy by new commercial buildings built between 1995 and 2000 by 4 trillion BTUs, the equivalent of nearly 700,000 barrels of oil per year. The cumulative operating cost savings for Missouri commercial building owners would have been nearly $68 million by the year 2000. The report goes on to say that this potential is "dwarfed by the energy consumption of the pre-

1995 standing commercial building stock." This existing commercial building stock would benefit from energy efficiency programs.

Q. What are some of the statistics related to energy efficiency investments and potential nationally?

A. In its March 1990 report "Efficient Electricity Use: Estimates of Maximum Energy Savings," the Electric Power Research Institute, funded by utility companies, estimates that 22 to 44 percent of total U.S. electricity consumption could be saved by using the most efficient technology available in 1990. Nationwide, spending on state energy efficiency programs fell from $1.65 billion in 1993 to nearly half -- $912.5 million in 1998 – at a cost of nearly 15,000 megawatts in power savings. The Environmental Working Group reported in 1998 that through the mid-1990's, programs gradually shrunk as utilities sought to cut cost in preparation for restructuring. As programs shrunk, so did savings, contributing to high demand growth and current reliability problems. As a result, Americans forfeited $1 billion in savings on electric bills as of 1997. These savings would have continued every year for the subsequent 10 years, a total of at least $10 billion in consumer savings lost due to cuts in energy efficiency programs by utilities, inspired largely by utility deregulation.

Utility commitment to energy efficiency programs varies largely by company and region. For example, the City of Eugene, Oregon, whose utility serves some 73,000 customers, invested more in energy efficiency than the combined outlay of Southern Company, Entergy, Commonwealth Edison, and American Electric Power, which serves more than 12 million customers.

Energy efficiency measures are proven to cut energy usage and pollution. For example, compact fluorescent bulbs use one-quarter the electricity for incandescent bulbs. Replacing

just one incandescent light bulb will save a consumer $50 and reduce carbon monoxide emissions by 1,000 pounds over the life of the bulb.

Q. Does Aquila, Inc. offer residential and commercial energy efficiency services or products to their residential or commercial natural gas customers?

A. Yes. According to Aquila, Inc., the company provides a limited number of energy efficiency services or products for their residential or commercial electric customers (Data Requests, MDNR-33, MDNR-34, MDNR-46, MDNR-47, MDNR-61, MDNR-62 and MDNR-74, Matthew Daunis, Aquila, Inc., November 25, 2003). Aquila offers the following energy efficiency programs: Residential Financing, Residential Mail In Energy Audits, Small Commercial and Industrial Energy Audits, Large Commercial and Industrial Energy Audits, Residential Lighting Program. Aquila also reports that they have joined a utility coalition to promote energy efficiency in the Greater Kansas City marketplace through energy education, resources and actions.

Q. Do you request any changes to these programs?

A. Yes. I commend Aquila for their involvement in offering energy efficiency services. I do have suggestions for ways to improve participation levels in these programs however, to make them more effective in achieving energy savings benefits for their customers.

I request that Aquila replace its Residential Mail-In Energy Audit Program with a web-based residential energy audit program. [redacted] Aquila began implementation of the mail-in energy audit program on April 1, 1999. From inception through May 2003, Aquila reports there have been 10,840 requests for audit services and only 4,447 audits, 41 percent, have been completed and returned to customers. Upon receipt of the audit form, MPS combines

the survey results with the customer's billing data to generate an audit report to send to the customer. The report provides an estimate of energy usage by appliance and end-use and a list and description of energy efficiency measures that are relevant to the customer's home. To be able to meet their residential customers' requests for energy audits [redacted]. I request that Aquila develop and implement a web-based residential energy audit that links to a customer's billing data to quickly and accurately provide energy-saving recommendations and information. This would reduce the staff time to manually complete the energy audits that are now done by Aquila for its MPS customers (Data Request, No. MDNR-33, Attachment: Demand Side Analysis Report dated November 26, 2002, Matthew E. Daunis, November 30, 2003). A similar program is under development by AmerenUE as part of the Residential and Commercial Energy Efficiency Collaborative established in the Stipulation and Agreement in Case No. EC-2002-1. Based on the projected cost to implement this online residential energy audit program, I request that $250,000 in one-time costs and $125,000 in annual costs be allocated to develop and implement this program. This online audit program can serve both MPS [redacted] *electric and gas* customers because energy efficiency measures identified in the audit will relate to both electric and gas measures. As a result, the cost to establish this program could be allocated among Aquila-MPS [redacted] *electric and gas* customers. The cost allocation could be based on the number of customers in each service territory. The Energy Center will include a similar proposal in the Aquila, Inc. natural gas rate case GR-2004-0072.

Q. Do you request other changes to Aquila's energy efficiency programs?

A. Yes. In addition to implementing an online residential energy audit program [redacted], I request that the Small Commercial and Industrial Energy Audit Program [redacted] should be structured to provide incentives for commercial customers to implement the energy efficiency measures identified in the energy audit. A similar program is being implemented by AmerenUE as part of the Residential and Commercial Energy Efficiency Collaborative established in the Stipulation and Agreement in Case No. EC-2002-1. We request $42500 annually [redacted] to include incentives to encourage implementation of energy efficiency measures identified in the energy audit.

Based on the number of customers served by Aquila, Inc., participation rates are low for many of these programs. I also request that the current programs be marketed more extensively to increase customer participation.

Recently, Aquila, Inc. became a utility partner with the ENERGY STAR program, a program sponsored by the U.S. Department of Energy and the U.S. Environmental Protection Agency helping businesses and individuals protect the environment through superior energy efficiency.

Last year alone, Americans, with the help of ENERGY STAR, saved enough energy to power 15 million homes and avoid greenhouse gas emissions equivalent to those from 14 million cars - all while saving $7 billion.

Energy efficient choices can save families about a third on their energy bill with similar savings of greenhouse gas emissions, without sacrificing features, style or comfort. ENERGY STAR helps consumers to make informed energy efficient choices. ENERGY STAR products include new high energy efficiency household products and appliances, energy-efficient ratings for new homes and tools and resources to help utility customers to plan and undertake projects to reduce energy bills and improve home comfort. For businesses, ENERGY STAR can provide a strategic approach to energy management that can produce twice the savings - for the bottom line and the environment. ENERGY STAR partnership offers a proven energy management strategy that helps in measuring current energy performance, setting goals, tracking savings, and rewarding improvements. ENERGY STAR provides an innovative energy performance rating system which businesses have already used for more than 10,000 buildings across the country. ENERGY STAR also recognizes top energy and environmental performing buildings.

I request that Aquila, Inc. provide annual funding in the amount of $[redacted],000 to promote the Change A Light, Change the World program in the company's service territory. The Change A Light, Change the World program is a national lighting campaign facilitated by the ENERGY STAR program and centered on light fixtures and light bulbs that have earned the ENERGY STAR label. The program would provide a unique opportunity for Aquila, Inc. to work with area retailers, manufacturers and regional partners to tailor a program to promote the use of high efficiency lighting systems, improve energy use and help promote environmental benefits.

The three primary goals of the program are to 1) stimulate demand for increased availability and variety of ENERGY STAR qualified lighting products in the marketplace; 2) influence

market share of ENERGY STAR qualified lighting products; and, 3) strengthen consistent ENERGY STAR identity in the marketplace.

By choosing ENERGY STAR products, individuals have the power to make a difference for the environment. Products that earn the ENERGY STAR label meet strict guidelines set by the Environmental Protection Agency and the Department of Energy.

Q. What are the benefits to consumers from renewable energy sources?

A. The Governor's Energy Policy Council cited economic and environmental benefits of renewable resources and recommended that Missouri aggressively pursue their production and use. The Council's June 1, 2003 report stated:

"Renewable energy sources in the Midwest are playing an increasing role in providing energy needs. Diversifying energy sources in Missouri will provide numerous benefits by:

- reducing our vulnerability to volatile oil markets,
- improving grid reliability through on-site generation,
- increasing the competitiveness and reliability of businesses and energy systems,
- offering economic benefits from the development of renewable energy industries and keeping more of our energy dollars in the local economy, and
- improving the environment from reduced emissions that harm public health.

Clean domestic energy choices for power generation, including solar, wind and biomass, can improve efficiencies and reduce expenditures on transmission and distribution equipment by siting these technologies close to the point of consumption, where possible.

Other Midwest states have begun to realize the economic benefits from the development of renewable energy industries. Many of these economic benefits accrue, in particular, to the rural economy. In Iowa for example, wind-farm developers pay 115 farmers about $2,000

per year for each wind turbine placed on the farmer's property, for a statewide total of approximately $640,000 per year. The Iowa wind projects also generate $2 million per year in tax revenue to counties and have created 40 new jobs. An economic study by the Regional Economics Applications Laboratory estimates that the state of Illinois can add 13,500 new jobs and $1.5 billion in annual economic output by 2020 by investing in renewable energy technologies. (Source: "Job Jolt: The Economic Impacts of Repowering the Midwest: The Clean Energy Development Plan for the Heartland, An Economic Study by the Regional Economics Applications Laboratory for the Environmental Law and Policy Center," November 2002)

The study includes estimates for nine other states in the Midwest.

The Union of Concerned Scientists (UCS) studied the impact of a national policy called a renewable portfolio standard (RPS) to increase the United States' use of renewable energy to 20 percent by 2020 (Source: "Renewing Where We Live," Union of Concerned Scientists, 2002). The UCS analysis found that under a 20 percent RPS, Missouri could produce the equivalent of 3 percent of its electricity use from renewable energy (not including hydropower) in 2010 and 23 percent in 2020 from bioenergy resources (88%), wind (7%) and landfill gas (5%). If a RPS were in place, the study estimates that between 2002 and 2020 renewable energy development could generate $1.6 billion in new capital investment in Missouri; $62 million in new property tax revenues for local communities; and $4 million in lease payments to farmers, ranchers and rural landowners from wind power (1999 dollars)."

Q. Does Missouri have renewable energy resources?

A. Yes. As an agriculturally productive state, Missouri has substantial land area available for energy crops and crop waste that can be used for bioenergy production. If one-half of the

energy content of these available biomass resources were used in technology that is as efficient as the average American electric generation plant, the Energy Center estimates that the net energy produced would be 15.2 million megawatt hours (MWh). This assumes that biomass fuel can be economically transported to plants capable of burning such fuel. This compares to 76.6 million MWh generated in Missouri in 2000, or 20% of our current generation. (Source: Governor's Energy Policy Council, June 2003 report).

Missouri also has an average daily summer solar radiation comparable to the vast majority of the United States including the state of Florida, making solar energy in Missouri an untapped opportunity. As the cost of traditional fossil fuels increases and the cost of solar energy declines, solar energy for electrical power generation and water heating continue to become more cost-effective as a means to help meet peak electrical demand (Source: Governor's Energy Policy Council, June 2003 report).

Q. Does Missouri have wind energy resources?

A. Yes. To help assess Missouri's wind energy potential, the Energy Center contracted with the firm TrueWind Solutions, Inc. for the development of new high-resolution wind energy maps of Missouri. At a resolution of 25 kilometers, the 1987 national wind maps provided only a gross indication of general areas with potentially productive wind sites. Advances in weather forecasting have resulted in substantial improvement in computerized models of the atmosphere. Not only has this affected weather forecasting, it has also resulted in new ways to predict wind energy patterns that result in a new generation of maps that are much more detailed.

The maps that are currently available are interim-final work products of TrueWind Solutions and are subject to independent validation by the National Renewable Energy Laboratory

(NREL) and consulting meteorologists. We expect this validation to be completed in the next few months. According to NREL staff, historically their validation has resulted in only minor changes.

The high-resolution maps offer new insights into Missouri's wind energy resources. Previous maps of wind energy patterns prepared in the 1980s indicated that Missouri's best wind energy resources were likely to be found on well-exposed ridges in southern Missouri. The new maps predict that the largest areas with the highest average wind speeds are to be found in northwest Missouri, some of which is in the service area of Aquila Networks – mps. While in general, similarly exposed locations to the south and east have progressively lower average wind speeds, the map indicates there are smaller areas with wind speeds similar to those found in northwest Missouri at various locations throughout the state. Missouri's wind power also substantially increases as the distance from the ground increases. For example, the wind power density measured at 100 meters is much better than at 50 meters.

While Missouri's wind resources are not as abundant as some of our neighboring states to the north and west, we do have the potential for development at some locations in the state, particularly in northwest Missouri and as wind generation technology continues to provide taller wind turbines. The interim-final wind maps can be viewed on the Department of Natural Resources' web page at http://www.dnr.mo.gov/energy/renewables/wind-energy.htm#maps.

Q. How are these maps used?

A. These new high-resolution wind maps can be used by Missouri utilities and property owners to guide site-specific assessments to determine the viability of installing wind turbines at these sites. For utility-scale wind development, assessments are conducted on tall towers at

heights of 70 to 100 meters. The Energy Center proposes to work with Aquila, Inc., to use the maps to identify potential sites in their service territory to conduct site-specific wind resource assessments.

The Energy Center requests that Aquila Inc. spend $100,000 in funding over the next three years to contract with a consulting wind energy meteorologist to conduct wind energy assessments at up to 4 sites in the MPS [redacted] service territory. Wind energy assessments should be consistent with the American Wind Energy Association's Standard Procedures for Meteorological Measurements at a Potential Wind Turbine Site (AWEA Standard 8.1 – 1986 or successor standards). Selection of the sites should be consistent with the best wind energy resources identified in the Department of Natural Resources' recently published wind map of the state of Missouri. To determine the feasibility of utility scale wind development, a minimum of one-half of the assessments should be conducted at a height of 100 meters with the remaining sites to be at heights of at least 70 meters. The cost for each site assessment is estimated to be approximately $25,000 [redacted]. Costs would include the wind measuring equipment, installation costs, lease payments for the use of existing tall towers (such as communication towers when located on or near sites predicted to have a strong wind resource) and consultant analysis of the data.

Q. Is wind energy economically viable?

A. Yes. Because of the improved efficiency of wind turbines and government policies encouraging wind energy investments, wind-driven electrical generation is the fastest growing source of new electrical generation capacity in the United States. Recent technological improvements have made it possible to generate energy from wind levels previously considered insufficient.

When installed on sites with a strong wind resource, the cost of wind energy is now in a competitive range with power technologies that use fossil fuels, ranging from 4.0 to 6.0 cents per kilowatt hour, not including the U.S. federal production tax credit (Source: U.S. Department of Energy National Renewable Energy Laboratory National Wind Technology Center). The federal production tax credit for renewable energy is 1.9 cents/kWh (1.5 cents/kWh adjusted for inflation). The federal energy bill under consideration at the time of this filed direct testimony, extends the production tax credit until January 1, 2007. Unlike some other electric generation technologies, wind energy contracts are often for 10 to 20 years, resulting in a known price for energy that can serve as a hedge against price volatility, utility companies are deciding to build wind-powered generation because it is economical to do so.

Q. Does Aquila invest in wind energy?

A. Yes. I commend Aquila for their leadership in diversifying their resource mix by including wind energy. Aquila has a 16 percent ownership share (0.12 MW) of the Jeffrey Energy Center wind turbines and purchases power on long term contract from the Gray County Wind Farm. Both sources are located in Kansas. Aquila provides the wind energy that Springfield City Utilities and Boone County Electric Cooperative make available to their customers.

Q. What funding level would be required to adequately support energy efficiency programs for Aquila, Inc.'s residential and commercial electric customers and the renewable energy program presented by your testimony?

A. As noted earlier in my testimony, Aquila, Inc. is targeting the largest proportion of this rate increase to its residential and small commercial electric customers. In order to help Aquila, Inc.'s residential and commercial electric customers face these rising energy costs, they

should be offered the opportunity to improve the way they use energy and help to reduce their energy expense.

Aquila, Inc. currently provides electric service to approximately 218,300 customers in Aquila Networks – MPS; approximately 189,000 are residential customers and 25,000 are general service customers that include small commercial. [redacted]

The Energy Center requests that Aquila, Inc. implement the proposed residential and commercial energy efficiency programs and renewable energy programs annually as follows:

Low-Income Residential Weatherization Assistance

Annually fund through rates, $218,000 for Aquila Networks – MPS [redacted] to implement low-income residential weatherization assistance consistent with federal weatherization guidelines through local community action agencies operating within Aquila, Inc.'s electric service territory.

Presuming an average savings to investment ration of 1:2.5, low-income households could realize a net benefit of $545,000 per year or $10.9 million dollars over the life of this investment ($218,000 x 2.50 x 20 years = $10,900,000).

Residential Energy Efficiency

Fund through rates $250,000 in one-time costs and $125,000 in annual costs for an online residential energy audit.

Change A Light, Change the World

Annually fund through rates $[redacted]27,000 to participate in the Change a Light, Change the World program within the Aquila, Inc. service territory.

Commercial Energy Efficiency

Fund through rates $[redacted]42,500 in annual costs for a commercial energy audit program with incentives for implementation of energy efficiency measures.

Renewable Energy

One-time funding in the amount of $100,000 divided over a three-year period to complete the wind energy assessment project.

Q. Please explain the estimated cost per customer to implement these energy efficiency and renewable energy programs.

A. First year costs related to the proposed energy efficiency and renewable energy programs total $[redacted]695,833:

• Weatherization Assistance	$[redacted]218,000 annual
• Residential Efficiency	$250,000 one-time
	$125,000 annual
• Change A Light	$[redacted]27,000 annual
• Commercial Efficiency	$[redacted]42,500 annual
• Renewable Assessment	$ 33,333 annual for three years
Total	$[redacted]695,833

If costs were allocated to all electric customers served by Aquila Networks – MPS [redacted] the estimated cost per customer would be approximately $[redacted]3.18 for the first year or approximately $0.[redacted]26 per month.

Over the next two years, the cost to all electric customer served by Aquila, Inc. is estimated at $[redacted] per year, with an estimated cost per customer at $[redacted] per year or $0.[redacted] per month:

- Weatherization Assistance $[redacted],000 annual
- Residential Efficiency $125,000 annual
- Change A Light $ [redacted],000 annual
- Commercial Efficiency $ [redacted] annual
- Renewable Assessment $ 33,333 annual

Total $[redacted]

In order to prevent any further contribution to increased electric rates for customers served by Aquila Inc., the Energy Center requests a reduction in Aquila, Inc.'s rate filing of no less than $[redacted] equal to the funding amounts to support the proposed energy efficiency and renewable energy programs for a period of no less than three years.

Following this 3-year period, the Energy Center requests annual funding in the amount of $[redacted] to support Weatherization Assistance ($[redacted],000), Residential Efficiency ($125,000), Change A Light ($[redacted]) and Commercial Efficiency ($[redacted]) until the company's next rate filing.

Q. Does this conclude your testimony?

A. Yes. Thank you.