

Exhibit No.:
Issues: Policy,
Demand Allocation,
Rate Structure
Witness: J. Matt Tracy
Sponsoring Party: Aquila Networks – L&P
Aquila Networks – MPS
Case No.: EO-2002-384

Before the Public Service Commission
Of the State of Missouri

Rebuttal Testimony

Of

J. Matt Tracy

TABLE OF CONTENTS

SECTION I – Introduction	1
SECTION II – COS Destination.....	3
SECTION III – Plan to Arrive	3
SECTION IV – Production and Transmission Demand Allocator.....	7
SECTION V – Change Rate Structure	13
SECTION VI – No Sale	14

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI
REBUTTAL TESTIMONY OF J. MATT TRACY
ON BEHALF OF
AQUILA NETWORKS
AQUILA, INC.
DOCKET NO. EO-2002-384

SECTION I – Introduction

2 Q. Please state your name and business address.

3 A. My name is J. Matt Tracy and my business address is 10700 East 350 Highway, Kansas
4 City, Missouri, 64138.

5 Q. Are you the same J. Matt Tracy who provided direct testimony in this case on behalf of
6 Aquila, Inc. (“Aquila” or “Company”)?

7 A. Yes.

8 Q. What is the purpose of your rebuttal testimony in this case before the Missouri Public
9 Service Commission ("Commission")?

10 A. My rebuttal testimony will respond to the direct testimony of Commission Staff
11 (“Staff”), Office of the Public Counsel (“OPC”), and the Federal Executive Agencies,
12 Ag Processing, Inc., and Sedalia Industrial Energy Users Association (collectively as
13 “SIEUA”). I will discuss the need for this case to point out a specific destination for
14 Aquila’s rates; respond to the various proposals to limit the maximum change in rates;
15 point out problems with the production and transmission demand allocator used by Staff
16 and OPC; reiterate the need to change rate structures; and remove from consideration
17 the need for changes due to the potential sale of Aquila Networks – L&P (“L&P”).

18 Q. Are there issues you wish to reserve the right to address in surrebuttal testimony?

1 A. Yes. In compliance with Ordered Item 4, on page 11, referring to Condition (C), on
2 page 9 of the Commission's August 23, 2005 Order Regarding Consolidation and
3 Procedural Schedule in Case No. EO-2002-384, Aquila provided data requests ILA-
4 Staff-001 and ILA-OPC-001 to all parties on October 4, 2005, expecting response
5 within seven calendar days. As of close of business on October 13, 2005 we have not
6 received responses to those requests from Staff or OPC. We reserve the right to address
7 in surrebuttal the information provided in the responses to the data requests, as they
8 were not timely answered.

9 Q. What are your recommendations?

10 A. Aquila recommends that the Commission:

- 11 • Provide a decision showing Aquila's Class Cost-of-Service ("COS") based
12 electric revenues by class, aside from any determination of when, or whether,
13 the Commission will order those changes to be implemented.
- 14 • Support the implementation of rate changes that move all the way to COS
15 levels, and explicitly reject plans that limit the changes, or take only a step,
16 without provisions for taking all the steps.
- 17 • Reject the Production and Transmission demand allocator used by Staff and
18 OPC.
- 19 • Reject Staff's contention that there is no need to change rate structures at
20 either L&P or Aquila Networks – MPS ("MPS").
- 21 • Disregard the caveats I introduced in my direct testimony regarding leeway in
22 the changes for L&P based on the potential sale of that division.

- 1 A. Yes. They have all placed limits on implementation that take the focus away from the
2 purpose of this case. OPC witness Meisenheimer states on page 13 of her direct
3 testimony that the Commission should not adopt a rate design in this case.¹ On pages
4 13 and 14 she sets limits on changes of only half of OPC's recommended COS shifts,
5 and adds that no one gets a net decrease if overall revenues are increasing, and vice
6 versa.² Staff witness Watkins states on page 6 of his direct testimony that residential
7 customers should get no more of an increase than Staff's COS shows the Large Power
8 Service Class requires to bring it up to an even return, and that the off-setting
9 decrease should be shared between the remaining classes.³ SIEUA witness Brubaker
10 on pages 32 and 33 of his direct testimony likewise limits the increase to residential
11 rates shown in his COS to 4% or 6%.⁴
- 12 Q. Do you believe there is a need to temper the class rate shifts determined by the COS?
- 13 A. Perhaps. It is dependent on the levels of the shifts of the combination of the COS and
14 any overall revenue change in the case implementing the rate changes. A combined
15 increase in excess of 15% to 20% may better be implemented in more than one step.
16 There is a need to consider rate shock. But there is also a need to avoid stonewalling,
17 and to move classes as quickly as reasonably possible so that they are paying the costs
18 that are incurred on their behalf.
- 19 Q. How might a rate change be implemented in more than one step?

¹ Direct testimony of Barbara Meisenheimer, pg. 13, lines 6-9.

² Ibid. at pg. 13, line 23 through pg. 14, line 13.

³ Direct testimony of James C. Watkins, pg. 6, lines 6-12.

⁴ Direct testimony of Maurice Brubaker, pg. 32, line 19, through pg. 33, line 10.

1 A. I see two immediate solutions. One is to phase in the changes with a single order.
2 The second is to take the steps in successive revenue cases.

3 Q. How do the two methods compare?

4 A. The phase-in approach has the advantage of not requiring additional effort by any
5 party to complete the process. The changes can be reflected in the tariffs by a variety
6 of methods and automatically occur at whatever interval the Commission chooses,
7 typically annually. A change of 30% to 40% could be complete in a year, with the
8 first half implemented at the close of a case, and the remainder a year later. It also
9 shows customers what their rates will be as we step through the phases, providing a
10 better price signal. The disadvantage is the added complexity in explaining and
11 administering the rates, particularly as the number of steps in a phase-in increase.
12 Any revenue cases submitted to the Commission by a party during the implementation
13 of a phase-in would also be more complicated.

14 The successive revenue case approach is administratively simpler, and certainly
15 clearer to explain. It would require relitigation to implement changes identified in a
16 previous docket, which some will see as a disadvantage, and others perhaps as an
17 advantage. It sends no signal to customers about their future prices. If the desire is to
18 arrive at COS levels, this approach requires some commitment on the part of the
19 Commission to support that effort in successive revenue cases.

20 Q. What is your recommendation on implementing the results of Aquila's COS?

1 A. The combined impact of the COS results and the revenue case is not yet available, but
2 my preference remains implementing the entire change in one step. I do not now have
3 a preference between the two alternatives I presented, above.

4 Q. Are there benefits to arriving at the COS destination immediately?

5 A. Yes. The sooner rates move to the results of COS, the sooner there will be an impact
6 on customers that have been paying more than their cost. Aquila's COS studies show
7 that those are the non-residential customers.

8 Q. What value does reducing commercial and industrial rates to their cost produce?

9 A. The obvious first value is to reduce the cost of doing business. But there are
10 additional values. Lowering the cost of electricity will tend to increase its use. More
11 use by customers with higher load factors will improve the system load factor, which
12 will tend to lower the overall average cost of producing electricity for all customers.
13 For the smallest customers, reducing utility costs will help them stay in business.
14 Small businesses are an important source of new jobs, and more jobs for Missouri
15 citizens is a valuable benefit. For the largest customers, reducing utility costs
16 encourages more production at Missouri facilities, which also impacts jobs.

17 Q. What are the problems with having other customers pay for some residential customer
18 costs?

19 A. Besides being unfair, the economic problems it causes should be avoided. If
20 residential customers are not paying their costs, they will over-use electricity. A
21 customer with subsidized rates is less likely to implement conservation measures,
22 because it is not as valuable to do so as if rates were higher.

1 Q. Is there value in sending correct price signals to customers?

2 A. Yes. Ultimately the individual pays for all of society's costs. In Aquila's case, that
3 means that residential customers ultimately pay for all electrical use. They do so
4 through the prices paid at businesses and in taxes that pay for government electrical
5 use. But that does not mean that residential customers should pay all costs, and others
6 pay nothing. Selling electricity to each customer class at Aquila's cost to serve that
7 class is the best method to allocate society's scarce resources in the regulated
8 environment. Allowing rates to vary widely from costs leads to over-use by
9 customers paying less than cost, and to under-use by customers paying more.

10 SECTION IV – Production and Transmission Demand Allocator

11 Q. Have you updated Schedule JMT-2 from your direct testimony?

12 A. Yes. Attached Rebuttal Schedule JMT-1 updates Schedule JMT-2. Rebuttal
13 Schedule JMT-1 shows the production and transmission demand allocators used by
14 the parties in their direct testimony, keeps the ENERGY and NCP allocators to show
15 the lower and upper bounds, and adds Staff's TOU Energy allocator. The values used
16 to create the graphs are shown in Tables 1 and 2, below.

Table 1, Aquila Networks – L&P Demand Allocators

	Energy- Staff	Energy	Staff	OPC	A&E- 3CP	SIEUA	NCP
RES	39.2%	39.3%	41.8%	42.0%	44.1%	46.4%	62.0%
SGS	6.9%	6.8%	6.8%	6.1%	7.8%	6.6%	7.5%
LGS	20.1%	20.2%	20.0%	20.6%	20.3%	19.9%	14.7%
LPS	33.8%	33.7%	31.5%	31.3%	27.8%	27.1%	15.8%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
RES-LPS	5.4%	5.6%	10.2%	10.8%	16.3%	19.3%	46.2%

Table 2, Aquila Networks – MPS Demand Allocators

Energy	Energy-	OPC	Staff	SIEUA	A&E-	NCP
--------	---------	-----	-------	-------	------	-----

		Staff				3CP	
RES	45.5%	46.1%	48.4%	49.6%	54.3%	54.5%	67.3%
SGS	15.3%	15.3%	15.8%	15.7%	16.4%	16.2%	13.4%
LGS	15.5%	15.4%	14.9%	14.5%	13.3%	12.6%	9.5%
LPS	22.9%	22.5%	20.0%	19.8%	16.0%	16.3%	9.3%
LIGHTS	0.8%	0.7%	0.9%	0.4%	0.0%	0.4%	0.4%
Sum	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
RES-LPS	22.5%	23.6%	28.4%	29.8%	38.3%	38.2%	58.0%

1 Q. Has the analysis provided in your direct testimony changed?

2 A. No. Staff's allocator is no longer my estimate, though the estimate was close to
3 Staff's actual values. OPC's allocator, which was not available prior to the filing of
4 their direct testimony, is very close to Staff's.

5 Q. What new information is presented?

6 A. The line at the bottom of Tables 1 and 2 shows the difference between RES and LPS,
7 the two classes with the most extreme load factors. The most prominent feature is
8 how much larger the difference is for MPS than for L&P. The other is the proximity
9 of Staff's and OPC's demand allocators to the Energy allocator. Aquila's and
10 SIEUA's are further from Energy, but still far from NCP.

11 Q. Why is the NCP demand allocator inappropriate for production and transmission?

12 A. The NCP allocator reflects the demand of a class as if no other classes exist. There is
13 value in serving diversified loads. Diverse loads can make use of the same facilities
14 at different times, thus spreading the cost of those facilities over more customers and
15 energy than if each were served independently. Using an allocator such as NCP that
16 takes no account of diversity ignores that value.

17 Q. Why is the Energy allocator inappropriate for production and transmission demand?

1 A. The Energy allocator provides no recognition of variations in load factor. A customer
2 using 8,760 kWh all in one hour, and none the rest of the year, is treated the same as
3 another customer using 1 kWh in all 8,760 hours. The cost to serve those customers
4 is very different. Charging the customer who needs only a 1 kW generator an equal
5 share of an 8,761 kW generator is unfair.

6 Q. How does one select a demand allocator somewhere between NCP and Energy?

7 A. A review of the load shapes for the system, and the predominant classes, provides
8 some perspective on demand requirements. Attached Rebuttal Schedule JMT-2
9 shows six class load shapes for MPS, plus the MPS system load.

10 Q. Please describe Rebuttal Schedule JMT-2.

11 A. Rebuttal Schedule JMT-2 is a series of three-dimensional graphs. Page 1 of 7 shows
12 the system load for MPS. This is the net power generated and imported to serve MPS
13 customers for the year ending 5/31/2003. The view is as if looking at a rectangular
14 aquarium from just above and to the right of the wide side. The vertical axis shows
15 the demand in megawatts (1,000's of kW). The wide axis along the front shows the
16 days of the year. The short axis along the lower right side shows the hours in a day.
17 Each point on the surface of the graph represents the demand for a given day and
18 hour. The sum of the hourly demands over any given period of time equals the
19 energy. Thus, the height of the graph shows the demand, and the area under the graph
20 shows the energy.

21 Q. What is the load factor?

1 A. The load factor of each graph is shown in its title. For the MPS system, it is 47%.
2 The load factor is calculated as the average demand divided by the maximum
3 demand. It can be visualized with the graph. If the graph were an aquarium filled
4 with ice from the bottom, with the top of the ice forming the shape shown, then the
5 load factor could be calculated by first marking the highest point of ice on the vertical
6 axis. That number is 1,322 MW. Allow the ice to melt so the water reaches its
7 average height, and mark that point on the vertical axis. That number is 622 MW.
8 The calculation is then $622 \div 1322 = 47\%$.

9 Q. Is 47% a high load system load factor for Missouri?

10 A. No. MPS has the lowest system load factor of the investor owned utilities in
11 Missouri. MPS serves predominantly residential customers. That was apparent in
12 Rebuttal Schedule JMT-1, and is confirmed in Rebuttal Schedule JMT-2. The MPS
13 service territory includes much of suburban Kansas City, with their bedroom
14 communities, and a large portion of rural territory.

15 Q. Please describe the remaining graphs in Rebuttal Schedule JMT-2.

16 A. The second graph is the residential non-space-heating class. These are the customers
17 not using electricity as the primary method of heating their homes. This is the clear
18 cause of the large bump in the summer for the system load. The use through the
19 summer is not steady from day to day, reflecting the significant impact of weather on
20 this class. The single bump is driven by temperature, with the peak typically
21 occurring around the hours ending at 17:00 or 18:00. The load factor is 32%.

1 The third graph is the residential space-heating class. The summer period is very
2 similar to the residential non-space-heating class. The winter period shows much
3 greater use, with the characteristic double bump; a sharper bump in the morning as
4 people get up and prepare for the day, and a broader bump in the evening as people
5 spend time at home. The load factor is 33%. That value is based on the highest peak,
6 which occurs in the winter for this class. If the highest summer peak is used as the
7 denominator, then the load factor is 52%. Both numbers provide information.
8 Because the MPS system is summer peaking, the 52% is more useful in describing the
9 value of this class to the system.

10 The fourth graph is the Small General Service ("SGS") class. It is very uniform in
11 when the work day starts (and ends, though that is not visible from the given view). It
12 is like the residential classes in being dominated by summer temperature response,
13 though it is much smaller than the residential classes. The load factor is 43%, which
14 is near the system load factor.

15 The fifth graph is the Large General Service ("LGS") class. It is less uniform day to
16 day than SGS, and less impacted by weather. The daily change from highs to lows is
17 not as great as SGS, as reflected in its load factor of 56%.

18 The sixth graph is the Large Power Service ("LPS") class. It is the smoothest of the
19 load shapes. The sharp "v" shapes visible at hour 1 occur every seven days, and
20 reflect a distinct reduction in load for these customers on weekend days. The LGS
21 and SGS classes also show lower use on weekends, but it is less pronounced. It is
22 also possible to see the even lower reductions in loads that occur around holidays.

1 Notice particularly the drops at New Year's, Memorial Day, Independence Day,
2 Thanksgiving, Christmas, and the week between Christmas and New Year's. There is
3 increased load during the summer, but it is statistically only weakly related to
4 weather. The load factor is 69%.

5 The seventh graph is the Lighting class. This shape is calculated, rather than
6 measured, because these customers are unmetered. This class's use is almost entirely
7 off-peak. Due to the longer daylight hours during the summer, and Daylight Savings
8 Time, lights are not on during the summer peaks. The load factor is 49%. The load
9 factor does not change if it is based on the highest summer value. If we further limit
10 the summer to the hours when peaks typically occur, then the load factor is infinite.

11 Q. Does this information help select a demand allocator?

12 A. Yes.

13 Q. How?

14 A. The key is seeing how the different demand allocators will impact the load shapes.
15 The Staff and OPC allocators increase the cost responsibility for customers with the
16 highest load factors, and decrease cost responsibility for customers with the lowest
17 load factors. That will increase use by customers with low load factors, and decrease
18 use for customers with high load factors. That will lower the system load factor,
19 which will increase the cost to all customers.

20 By selecting a demand allocator that is less like Energy, though still far from NCP,
21 customers with higher load factors will increase their use, improving the system load
22 factor, lowering the overall cost of providing electricity to all customers. This is

1 valuable for both L&P and MPS, but is particularly needful for MPS, given its low
2 system load factor.

3 Q. What factors led to Aquila's selection of the A&E-3CP demand allocator?

4 A. The first decision was to use a 3CP allocator. Aquila's system peaks in Missouri
5 occur during the months of June, July, August, and September. Typically three of
6 those months will be relatively close, with the fourth trailing behind. From year to
7 year the trailing month will vary between June and September. By selecting a 3CP,
8 the three most similar values are used to create a combined value that is less subject to
9 sampling errors, or the occasional eccentric behavior of a class, and a 1CP.
10 The second decision was to assign some level of demand to the Lighting class, which
11 has zero demand at the times of the 3CP. The A&E method provided that
12 assignment, without significantly changing the other allocation.
13 The A&E-3CP allocator follows the characteristics of Aquila's systems, and does not
14 give the Lighting rate a free ride.

15 SECTION V – Change Rate Structure

16 Q. Are the current rate structures for L&P and MPS properly designed to send price signals
17 to customers?

18 A. Yes, and no. Both structures send signals that reduce rates as load factor increases.
19 However, customers show a lack of understanding of the structures, particularly the
20 MPS base seasonal rate, so there is a question of how well customers can respond to a
21 signal they do not understand.

1 As an example, not long after completing my Masters Degree in economics, I was asked
2 to join a meeting where a consultant, an economist with a Ph.D., was holding forth on
3 some topic of interest to the gathered participants. The presentation was on point, but
4 the consultant's communication was not understood by those who needed to understand
5 it. I was familiar with the vocabulary, and was able to interpret the consultant's
6 presentation so that it was valuable to those wanting the information. Similarly, though
7 the price structures may be both sophisticated and elegant, and people who work with
8 rates for a living are comfortable and pleased with them, if the customers do not
9 understand them, then the structures need to change.

10 Q. Are the structures Aquila is proposing capable of sending appropriate price signals?

11 A. Yes. They are not as refined as the structures they replace, but they send the correct
12 signals, and they are more understandable.

13 Q. Is there another benefit to changing the rate structures?

14 A. Yes. Moving to Aquila's proposed rate structure will simplify the training requirements
15 for Aquila field and call center personnel. Where there are now dissimilar rate
16 structures in the two divisions, there would be a single, simpler structure. The value
17 flows to the customers through rates that are easier to understand, and Aquila personnel
18 who are better able to explain them.

19 SECTION VI – No Sale

20 Q. Does the Commission need provide in this case for the possibility of the sale of L&P?

- 1 A. No. Since direct testimony was filed in this case, Aquila announced that it is not
2 selling the L&P division. Therefore, the possible changes I noted in my direct
3 testimony regarding that possibility are moot.
- 4 Q. Does this conclude your rebuttal testimony?
- 5 A. Yes it does.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the matter of an Examination of Class Cost of Service)
And Rate Design in the Missouri Jurisdictional Electric)
Service Operations of Aquila, Inc., formerly known as)
UtiliCorp United Inc.)

Case No. EO-2002-384

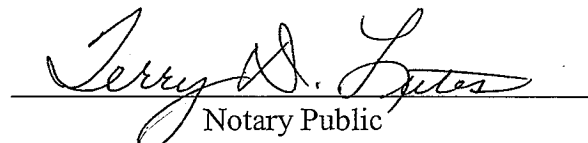
County of Jackson)
)
State of Missouri) ss

AFFIDAVIT OF J. MATT TRACY

J. Matt Tracy, being first duly sworn, deposes and says that he is the witness who sponsors the accompanying testimony entitled "Rebuttal Testimony of J. Matt Tracy;" that said testimony was prepared by him and under his direction and supervision; that if inquiries were made as to the facts in said testimony and schedules, he would respond as therein set forth; and that the aforesaid testimony and schedules are true and correct to the best of his knowledge, information, and belief.


J. Matt Tracy

Subscribed and sworn to before me this 12th day of October, 2005.


Notary Public
Terry D. Lutes

My Commission expires:

8-20-2008



TERRY D. LUTES
Jackson County
My Commission Expires
August 20, 2008