



Michael V. O'Brien
City Manager

CITY OF WORCESTER

cc2012apr11152536

Attachment for Item #

9.32 A

July 17, 2012

TO THE WORCESTER CITY COUNCIL

COUNCILORS:

The attached communication, in response to a request by City Council relative to municipal electricity aggregation, as received from Thomas F. Zidelis, Chief Financial Officer, is forwarded for the information of your Honorable Body.

The City asked World Energy to prepare a summary memo to explain the affect of current market conditions on a potential municipal aggregation. They conclude that the decrease in electricity supply costs over the last two and one half years has greatly diminished any potential savings, with the potential average annual net savings being reduced down to \$.08 to \$2.30 per participant annually. This reduction coupled with the continued responsibilities and risks, such as mistaken billings, complaints, and general contract issues. It is for these reasons and those included within the attached report, that we believe it best to hold off on pursuit of this endeavor and continue to evaluate market conditions and industry changes to determine if and when it might be appropriate to reevaluate this proposal.

Respectfully submitted,

Michael V. O'Brien
City Manager





CITY OF WORCESTER, MASSACHUSETTS

Department of Administration and Finance
Budget Office Division

Thomas F. Zidelis
Chief Financial Officer

To: Michael V. O'Brien, City Manager

From: Thomas F. Zidelis, Chief Financial Officer

Date: May 10, 2012

Re: Motion Rushton @ #9.4A CM - Request City Manager provide City Council with an update relative to municipal aggregation efforts.

In November 2009, at the request of City Council, the City conducted an initial assessment of municipal aggregation through a White Paper prepared by World Energy for the City of Worcester (see attached). In summary, the white paper concluded that while the collective benefits for aggregation were substantial, the potential average annual net savings per customer were very minimal - \$3.64 to \$9.43 per participant depending on recurring costs and market conditions. In addition, the City would bear the responsibility of potentially significant additional risks: "By aggregating and acting as contract manager the City assumes a very large responsibility. If any issues arise regarding electricity, whether they are issues of mistaken billing or more general contract issues, the City would be obligated to play a part in the issue's resolution." Given the risks and modest savings per person, the City decided not to pursue municipal aggregation.

Given the nearly 40% decrease in electricity supply costs since 2009, the City has again reviewed the option of municipal aggregation. The City asked World Energy to prepare a summary memo to explain the affect of current market conditions on a potential municipal aggregation (also attached). They conclude that the decrease in electricity supply costs over the last two and one half years has greatly diminished any potential savings, with the potential average annual net savings being reduced down to \$.08 to \$2.30 per participant. This reduction coupled with the continued responsibilities and risks, such as mistaken billings, complaints, and general contract issues, has led us once again to conclude not to pursue municipal aggregation.

World's summary that "low basic service rates have gutted the potential savings of an aggregation, but at the same time have delivered significant utility cost savings to the City's residents." Given these circumstances, it is not recommended that we pursue municipal aggregation. However, if market conditions change such that municipal aggregation becomes significantly more cost effective, the City will reassess this recommendation and act accordingly.



Municipal Electric Aggregation White Paper

Prepared by World Energy for:
City of Worcester, MA

November 5, 2009

I. Objective

To provide the City of Worcester (“the City”) with an assessment of a City-wide municipal electric aggregation through a balanced, objective review of the opportunities and costs associated with energy aggregation for residential and small business customers presented in a concise white paper that addresses:

- The costs and benefits of instituting a municipal electric aggregation including:
 - The administrative and management capacity necessary to implement and manage this type of energy procurement arrangement
 - The financial risks involved and the potential monetary benefit such as access to funds for demand side management and renewable energy.
- The pros and cons of instituting a municipal electric aggregation

II. Overview of Municipal Electric Aggregations

Municipal Electric Aggregation is a method by which the City can buy electric power on behalf of the consumers within City borders.

Key Elements/Features of a Municipal Electric Aggregation include:

- “The formation of a group of consumers into a single buying pool for the direct purchase of electricity supply.”¹ This formation is referred to as “Load Aggregation” and is permitted in the Restructuring Act of 1997².
- A local government needs an affirmative vote³ to start the aggregation process.
- Development of an Aggregation Plan in consultation with the Division of Energy Resources (“DOER”). Elements of the plan include:
 - A detailed explanation of the process and consequences of aggregation
 - Universal access, reliability, and equitable treatment of all customer classes
 - Organizational structure
 - Program operations
 - Rate setting and other costs
 - Methods for entering and terminating agreements

¹ Commonwealth of Massachusetts, Office of Consumer Affairs and Business Regulation, Division of Energy Resources, Guide to Municipal Electric Aggregation in Massachusetts, January 2003, http://www.mass.gov/Eoeea/docs/doer/electric_deregulation/agg-guid.pdf.

² The Restructuring Act of 1997 as contained in Chapter 164 of the Acts of 1997 is “an act relative to restructuring the electric utility industry in the Commonwealth, regulating the provision of electricity and other services, and promoting enhanced consumer protections...” (<http://www.mass.gov/legis/laws/seslaw97/sl970164.htm>)

³ A town may initiate a process to aggregate electrical load upon authorization by a majority vote of town meeting or town council. A city may initiate a process to authorize aggregation by a majority vote of the city council, with the approval of the mayor, or the city manager in a Plan D or Plan E city.

- Rights and responsibilities of participants
 - Termination
 - Constituent notification and enrollment
- It is an “opt-out” aggregation, which means that all classes of participating consumers, as defined in the Aggregation Plan participate automatically, unless they specifically request not to be or if they have an electricity supply contract currently in place with an electricity supplier.
 - Citizens get to review the completed Aggregation Plan.⁴ It is then submitted to the Massachusetts Department of Public Utilities (“DPU”) for certification.
 - Prior to its decision of whether or not to approve the Aggregation Plan, the DPU will conduct a public hearing.
 - The Aggregation Plan must address “Rate Setting and Other Costs.” This includes the method used to establish the price for energy and/or energy-related services. If the prices charged to participating consumers vary according to load or service characteristics, justification for those price differences must be included. This is a critical part of the Plan since it establishes the price benchmark which allows the Municipal Aggregation to award a contract for electricity supply.
 - The electricity price cannot exceed Standard Offer Service unless excess is due to the purchase of renewable energy.⁵
 - The Aggregation Plan can include custom services, such as “cleaner-than-average” electricity (i.e., renewable energy).
 - Furthermore, a Municipal Aggregation may have access to energy efficiency funds⁶ if the Aggregation develops, submits, and has the DPU approval an Energy Plan (more on this in Section II).
 - To date, there have been two DPU approved Municipal Electric Aggregations in Massachusetts: Cape Light Compact (21 cities and towns) and the City of Marlborough. Both are successful in that both achieved pricing under the standard offer service. The Town of Marlborough has achieved reductions off the standard offer of approximately 2% for residential accounts and 1% for small commercial accounts. The Cape Light Compact does not release savings numbers.

⁴ The Town of Marlborough accomplished this through a series of town meetings. The legislation is not specific on how this is to be accomplished but is clear that there must be an opportunity for citizens to review the Aggregation Plan.

⁵ If funds for the purchase of renewable energy come from the Department of Energy Resource’s Green Communities Program, the type of renewable energy purchased must comply with the program’s definition. If the cost is to be borne by just the City, then it appears that the City has complete flexibility to define the type and location of the renewable energy in the Aggregation Plan. This will enable the City to come up with definition that can minimize this cost to the constituents in the aggregation.

⁶ Please refer to Step 4 in Section III The Process for additional information on available funds.

III. The Process

Step 1: Vote

In order to commence a Municipal Electric Aggregation, the City must receive authorization by a majority vote of city council, with the approval of the mayor, or the city manager in a Plan D or Plan E city.

Step 2: Develop an Aggregation Plan

After confirmation of an affirmative vote, a municipality must develop an Aggregation Plan in consultation with the DOER. This plan must be provided to the citizens for review.⁷

It is important to note that State law makes it clear that ongoing communications with citizens is essential. Communications must change as the aggregation progresses. Initial communication informs constituents about deregulation, purchasing opportunities, and basic terminology. Subsequent consumer education materials focus on keeping constituents apprised of project status and decisions. Finally, they may provide formal notification to constituents as required by the Act. The Act states, "It shall be the duty of the aggregated entity to fully inform participating ratepayers in advance of automatic enrollment that they are to be automatically enrolled and that they have the right to opt-out of the aggregated entity without penalty."

Even though a Municipal Electric Aggregation is "opt-out" it is important to assess if the majority of constituents are willing to participate in an aggregation on an ongoing basis. In other words, will the services provided through a municipal aggregation be competitive with other options available to participants over the duration⁸ of the plan?

Step 3: Submit the Aggregation Plan for Approval

Once citizens⁹ have reviewed the Plan, it is submitted to the DPU for certification. Public approval is not required, but some form of a public comment period is necessary. The City of Marlborough held a few town meetings. Prior to its decision regarding whether to approve the Aggregation Plan, the DPU conducts a public hearing.

Step 4 (Optional): Apply for Energy Efficiency Funds

The City, if it decides to establish a Municipal Electric Aggregation, may adopt an Energy Plan that defines the manner in which it will implement demand side management programs and/or renewable energy programs. The Energy Plan must be consistent with state energy conservation goals developed pursuant to chapter 25A or chapter 164.

The Energy Plan is adopted in the same manner as the Aggregation Plan. The adopted Energy Plan is submitted to the DPU for approval. As with the Aggregation Plan, the DPU conducts a

⁷ M.G.L. Chapter 164: Section 134 (a)

⁸ The duration of the Aggregation Plans and Energy Plans are for many years. However, the energy supply contracts negotiated with suppliers can be as short as six months and as long as two years.

⁹ The definition of citizens is not provided in the documentation however it is safe to assume that it refers to any members of the rate classes that are included in the Aggregation Plan.

public hearing prior to deciding whether to approve the Plan. Once approved by the DPU, the City will have access to monies from the System Benefit Charge.¹⁰ Specifically, the City may:

- a) Apply to the Massachusetts Technology Collaborative¹¹ ("MTC") for monies from the Massachusetts Renewable Energy Trust Fund, pursuant to chapter 40J, and
- b) Receive money from the demand side management system benefit charges or line charges in an amount not to exceed that contributed by retail customers within said municipality.

Within two years of approval of its Energy Plan, the aggregation shall provide written notice to the DPU that it has implemented the plan. Otherwise, the DTE may revoke certification of its energy plan.

Step 5: Implement the Plan

There are many steps contained within this one step. Some examples are listed below.

- Collect and analyze load data for all potential participants (i.e. all residents and small businesses within the City that are not already under a supply contract)
 - Determine which accounts, if any, are already under a supply contract
- Create and host a call center where constituents can call to opt out of the program
- Implement a customer education plan
- Develop an RFP
- Review responses to RFP
- Development and negotiate contract terms
- Provide ongoing management and monitoring of supply contract

IV. Costs

There are many costs associated with developing a Municipal Electric Aggregation. The following section details the various tasks necessary for implementing an aggregation as well as a corresponding estimate of the time and money needed to complete each step. We have assumed that the average fully burdened cost per hour per person is \$100/hour.¹² It is possible that the Municipal Aggregator may staff the tasks with different labor categories and hourly costs; however, assuming an optimal staffing plan in developing the cost estimate will likely lead to an underestimation of costs. Therefore, the analysis only includes one standard labor rate but provides a range of billable days and therefore achieves the same objective of providing a range of possible costs.

¹⁰ System Benefit Charge: A line item charge (stated in fractions of a cent per kWh) to all customer classes on their utility bills that is used for a public benefit. The Massachusetts Technology Collaborative, the State's economic development agency for renewable energy, manages these funds.

¹¹ Massachusetts Technology Collaborative is an initiative of the Massachusetts Technology Park Corporation (MTPC), an independent instrumentality of the Commonwealth created in 1982 to advance the growth of the technology sector of the Massachusetts economy through collaborative activities among industry, universities and state government. MTC is the successor to the Massachusetts Microelectronics Center, MTPC's first public private partnership that addressed the training needs of the state's computer and defense electronics industries.

¹² Fully burdened includes salary, benefits and overhead – material costs not included.

Task 1: Writing Aggregation Plan –

Team of four, 15-30 billable days each, estimated cost of \$48-96,000 (*Startup Cost*).

This Plan, to be filed with the DPU, must include: detailing the process, goals, and consequences of an aggregation¹³; describing method of ensuring universal access, reliability, and equitable treatment of all customer classes; specifying the organizational structure of the aggregation; outlining the methods for entering and terminating agreements; addressing method of rate setting; explaining the rights and responsibilities of participants; describing method of constituent education and enrollment. In order to write such a comprehensive plan a lot of research will have to be completed up front. The time estimate supplied here includes a team of four researching guidelines and other relevant information in the first two weeks, and writing the Plan in the third and fourth week. The process of researching and writing the Aggregation Plan will likely be an iterative process – as once the writing process begins, frequently questions of research arise. This could increase the time and costs associated with this task.

Task 2: Creation of a Citizens Committee –

Team of five, 5-10 billable days each, estimated cost of \$20-40,000 (*Startup Cost*).

This committee will be responsible for reviewing the Municipal Aggregation Plan and identifying constituent preferences regarding pricing product options. The cost of the committee's time and efforts are not captured here. What is captured is the cost of identifying constituents to participate in the committee and developing the guidelines for their research and outreach. This task has the potential to grow in scope and cost.

Task 3: Educating Consumers –

Team of Two, 20-80 billable days each, estimated cost of \$32-128,000 (*Startup Cost*).

Before developing the content of the education materials, the City should assess consumer knowledge regarding electric utility restructuring and aggregation, as well as what services and/or features constituents are currently using as well as the services and/or features they want. The information gathered is used to create educational materials based on actual market awareness as well as the development of the Aggregation Plan. Assessing consumer knowledge can be collected via survey or public meetings, which is the technique utilized by the city of Marlborough.¹⁴ In addition to targeting consumers, the City should consider informing legislators, municipal employees, community leaders, and the media.

The educational materials must be designed so that the information reaches everyone in the municipality such as the visually impaired, low income, elderly, people who speak English as a second language, etc. To be effective the information should be tailored to audience and community. This may involve creating a multi-lingual call center that constituents can call if

¹³ For participants, possible consequences include savings in electricity bills relative to the standard offer as well as any other benefits expected through the aggregation, such as a greater range of pricing options and higher levels of renewable energy. For the municipality, these consequences include broader availability of energy savings, improvements in the local economy, greater control of energy efficiency funds and possible increase in administrative costs.

¹⁴ <http://www.colonialpowergroup.com/calendar.htm>

they have questions regarding the aggregation and if they choose to opt out of the aggregation.

For these reasons the cost estimate is fairly broad since assessing customer knowledge could require a multi-lingual survey and supporting materials or a considerable amount of outreach.

Task 4: Working with DOER and DTE to Formalize Plan –

Team of Two, 10-30 billable days each, estimated cost of \$16-48,000 (*Startup Cost*)

This will include attending hearing(s) hosted by DTE to review the aggregation plan. As well as working side-by-side with DOER when developing the plan. While, the lower budget estimate for this task is 10 billable days, the coordination required may lengthen the time needed to complete this task, the range provided accounts for this risk.

Task 5: Analyzing Load Data –

Team of five, 50-60 Billable days each, estimated cost of \$200-240,000 (*Recurring Cost*).

The task of obtaining and “scrubbing” electric use load data for an estimated 71,000 accounts will not be trivial. Unfortunately, the usage data supplied by utilities is often in an unusable format and sometimes must be manually re-entered, line by line, into a spreadsheet. Furthermore, more often than not, the data supplied is imperfect. There may be months of usage data missing for a particular account for no apparent reason. Each data anomaly must be identified and researched, and with approximately 71,000 accounts and 12 months of data for each account, the potential for anomalies is great. The accounts represent all the rate classes included in the Aggregation Plan, provided they have not opted out, regardless of income level or credit risk.

This task will recur on a periodic basis. Depending on the pricing product utilized by the aggregation and the specific terms and conditions in the RFP, this may need to be completed semi-annually to once every 2-3 years depending on energy agreement. For example, if a fixed price product is utilized, this task would have to be completed more frequently since the standard offer is only guaranteed for six months and state law mandates that the aggregation must get a lower price than the standard offer. Therefore, the aggregation would need to solicit revised pricing much more frequently and would require an updated database. If an index price product is utilized, the discount could carry forward despite changes to the standard offer.

For this white paper, it is assumed that this cost recurs annually.

Task 6: Administering RFP Process –

Team of four, 40-50 billable days each, estimated cost of \$128-160,000 (*Recurring Cost*)

The content and design of the RFP will vary depending upon the specific services and service features solicited. In general, the RFP must include several components: account data, services and features of supply, qualification criteria, selection criteria, essential (i.e. nonnegotiable) terms and conditions of the contract, term of service. Qualifying and selecting suppliers from the RFP process will involve: pre-bid conference, review and answer of bidder questions, evaluating proposals, interviewing finalists, etc.

As discussed with the previous task, this cost could recur twice a year or every 2-3 years depending on energy agreement. We assume that this cost recurs annually.

Task 7: Negotiating Contract –

Team of four, 5-10 billable days each, estimated cost of \$16-32,000 (*Recurring Cost*)

After the RFP has been issued and proposals have been received, the final step will be to negotiate and finalize the terms of the supply contract with the winning supplier.

As discussed with the previous task, this cost could recur twice a year or every 2-3 years depending on energy agreement. We assume that this cost recurs annually.

Task 8: Contract Management–

One staff person, 65-260 billable days, estimated cost of \$52-208,000 (*Recurring Cost*)

Even after the contract has been awarded to a supplier, the City¹⁵ will still be involved in: ensuring the constituents receive the correct electricity price on their bills¹⁶, opt-out requests, answering constituent inquiries, handling any problems with the power supplier or local delivery company ("LDC")¹⁷, ensuring that constituents drop and add accounts in a timely and proper manner, staying apprised regulatory changes, and generally ensuring that the aggregation program meets the goals set out in the approved aggregation plan.

If the City also implements an Energy Plan, additional resources will be necessary. A quick perusal of the Cape Light Compact's website clearly demonstrates that ongoing costs can be significant. The Cape Light Compact appears to have a staff of around 10 engaged in a variety of activities including education, program management, and energy efficiency.¹⁸ In fact, it is clear that the initial education activities undertaken to put the Aggregation Plan together change in focus but continue on.

In summary, we estimate that the cost to implement a Municipal Electric Aggregation will range from \$512-952,000 in the first year and will cost approximately \$396-640,000 per year thereafter (recurring costs). The following table summarizes these costs:

¹⁵ The Town of Marlborough directs these calls to its consultant.

¹⁶ Bills continue to be generated by National Grid and submitted to ratepayers. The electricity cost on the bill will reflect the final price negotiated by the City with a supplier.

¹⁷ National Grid will continue to operate and maintain all local infrastructure and will handle all calls regarding this. The City will receive calls from ratepayers regarding the program, pricing, opt-out requests, and billing issues. In fact, it should be anticipated that the City will receive calls that should be directed to National Grid.

¹⁸ The Cape Light Compact consists of 21 cities and towns with about 200,000 aggregation participants. In addition, the Compact has both an approved Aggregation Plan and Energy Plan.

Task	Start Up	Recurring	FTEs	Low Est. Billable Days per FTE	High Est. Billable Days per FTE	Aggregation Plan Cost (Low Est.)	Aggregation Plan Cost (High Est.)
Task 1: Writing Aggregation Plan	Yes	No	4	15	30	\$48,000	\$96,000
Task 2: Creation of a Citizens Committee	Yes	No	5	5	10	\$20,000	\$40,000
Task 3: Educating Consumers	Yes	No	2	20	80	\$32,000	\$128,000
Task 4: Working with DOER & DPU	Yes	No	2	10	30	\$16,000	\$48,000
Sub-total Start Up Costs						\$116,000	\$312,000
Task 5: Analyzing Load Data	Yes	Yes	5	50	60	\$200,000	\$240,000
Task 6: Administering RFP Process	Yes	Yes	4	40	50	\$128,000	\$160,000
Task 7: Negotiating Contract	Yes	Yes	4	5	10	\$16,000	\$32,000
Task 8: Contract Management	Yes	Yes	1	65	260	\$52,000	\$208,000
Sub-total Recurring Costs						\$396,000	\$640,000
Total Costs						\$512,000	\$952,000

V. Benefits

The primary fundamental, quantifiable benefit of a Municipal Electric Aggregation is a lower cost to energy consumers. The savings an aggregation generates are largely a result of group efficiency – there is a lower transaction cost for the supplier. Rather than obtaining accounts one-by-one, an aggregation gives a supplier the opportunity to obtain thousands of accounts in a single procurement thus achieving economies of scale. We have estimated the following for the City of Worcester:

Aggregation Plan Rate Classes	Accounts	Est. Monthly Usage per Account (kWh)	Annual Load per Account	Annual kWh by Rate Class
Residential Accounts	70,000	650	7,800	546,000,000
Commercial Accounts - G1	760	3,500	42,000	31,920,000
Commercial Accounts - G2	46	14,000	168,000	7,728,000
Totals	70,806			585,648,000

The estimated usage per residential account is based on a comparison with the City of Boston rather than the Town of Marlborough since Marlborough consists of single family homes rather than a mixture of housing.

We estimate that the City could negotiate a discount off the Standard Offer of approximately 2.1% for Residential and 1.2% for small commercial accounts. Our estimate is based on the discount achieved for the Town of Marlborough adjusted downward to account for number of accounts in the City of Worcester as well as the difference in creditworthiness and payment delinquency. There is no direct cost to the city for delinquent accounts or poor credit; however, poor credit and higher delinquency rates do make the aggregation less attractive for a supplier and will result in lower savings as compared to the Town of Marlborough and the Cape Light Compact. Basically, these costs are socialized across the entire aggregation.

Aggregation Plan Rate Classes	Cost / KWH (Utility)	Negotiated Standard Offer Discount	Cost / KWH (Program)	Savings
Residential Accounts	\$0.109200	2.106%	\$0.106900	\$0.002300
Commercial Accounts - G1	\$0.106510	1.230%	\$0.105200	\$0.001310
Commercial Accounts - G2	\$0.106510	1.230%	\$0.105200	\$0.001310

Gross Savings: Across ~71,000 accounts, we estimate the potential gross savings to be \$653-1,308,000 for the first year. This equates to an average savings ranging from \$8.97-17.94 per year for approximately 70,000 residential accounts, between \$27.51-55.02 for approximately 760 G1 commercial customers, and between \$110.04-220.06 for approximately 46 G2 commercial accounts.

Aggregation Plan Rate Classes	Monthly Gross Savings per Account (Low Est.)	Monthly Gross Savings per Account (High Est.)	Annual Gross Savings per Account (Low Est.)	Annual Gross Savings per Account (High Est.)	Annual Gross Savings by Rate Class (Low Est.)	Annual Gross Savings by Rate Class (High Est.)
Residential Accounts	\$0.75	\$1.50	\$8.97	\$17.94	\$627,900	\$1,255,800
Commercial Accounts - G1	\$2.29	\$4.58	\$27.51	\$55.02	\$20,908	\$41,815
Commercial Accounts - G2	\$9.17	\$18.34	\$110.04	\$220.08	\$5,062	\$10,124
Total Benefits					\$653,869	\$1,307,739
Average Benefits	\$0.77	\$1.54	\$9.23	\$18.47		

Net savings for the entire program in the first year, after subtracting all the costs, is estimated to be \$141-356,000. However, if the benefits turn out to be on the low end and the cost turn out to be on the high end, net savings could be approximately *negative* \$298,000 in the first year. On the other hand, if the benefits turn out to be on the high end and the cost turn out to be on the low end, net savings could be as high as approximately \$796,000 in the first year. In subsequent years, net savings are estimated to range from \$257-668,000 since some of the start up costs do not recur, but could be as high as \$912,000 or as low as \$14,000 depending on the combination of costs and benefits (see tables below).

Therefore, net saving on average are estimated between \$2.00-5.02 per participant in the first year but could be as high as \$11.24 or as low as *negative* \$4.21 depending on the combination of costs and benefits (see tables below). In later years, the average annual net savings increases to \$3.64-9.43 per participant with a range of \$0.20 to \$12.88 per participant.

Year	Annual Net Savings (High Cost & Low Benefits)	Annual Net Savings (Low Cost & Low Benefits)	Annual Net Savings (High Cost & High Benefits)	Annual Net Savings (Low Cost & High Benefits)
Start Up Year	(\$298,131)	\$141,869	\$355,739	\$795,739
Remaining Years	\$13,869	\$257,869	\$667,739	\$911,739

Year	Avg Annual Net Savings (High Cost & Low Benefits)	Avg Annual Net Savings (Low Cost & Low Benefits)	Avg Annual Net Savings (High Cost & High Benefits)	Avg Annual Net Savings (Low Cost & High Benefits)
Start Up Year	(\$4.21)	\$2.00	\$5.02	\$11.24
Remaining Years	\$0.20	\$3.64	\$9.43	\$12.88

Aggregation Plan Rate Classes	Monthly Net Savings per Account (Low Est.)	Monthly Net Savings per Account (High Est.)	Annual Net Savings per Account (Low Est.)	Annual Net Savings per Account (High Est.)	Annual Net Savings by Rate Class (Low Est.)	Annual Net Savings by Rate Class (High Est.)
Residential Accounts	\$0.14	\$0.37	\$1.74	\$4.49	\$121,728	\$314,637
Commercial Accounts - G1	\$1.69	\$3.46	\$20.28	\$41.57	\$15,412	\$31,597
Commercial Accounts - G2	\$8.57	\$17.22	\$102.81	\$206.63	\$4,729	\$9,505
Totals	\$0.17	\$0.42	\$2.00	\$5.02	\$141,869	\$355,739

It is important to note that net savings depend upon who bears the costs and how the costs are borne as well as the size of the organization created to provide ongoing contract management. For instance, if the City chooses to bear all costs associated with contract management, net savings would increase by *at least* \$52-208,000 presuming that existing tax levy funds could be used to cover expenses without diminishing other City services. Therefore, our analysis assumes that a consultant is hired to provide this service.

There are also qualitative benefits of a Municipal Electric Aggregation:

- Strength in Numbers – because accounts are grouped together, the purchasing power of the aggregation grows exponentially. More pricing options, such as supply contracts that include renewable energy, are available to residents.¹⁹
- Potential Improvements to the Local Economy
- Broader Availability of Energy Savings
- Potential to take advantage of the Energy Efficiency Funds

VI. Other Considerations

Beyond the costs and benefits presented here, there are other matters to consider. For instance, although \$356,000 (the high end of the potential net savings) is a substantial sum in aggregate, it is approximately \$5.02 per customer account per year. Even though net savings increases after implementation to \$9.43 per year, savings may seem paltry to constituents.

It is important to note that there are multiple risks and responsibilities involved with municipal aggregation. For example, the Town of Marlborough suspended the program for six months when prices escalated rapidly and the supplier could not beat the standard offer. All the accounts were returned to the standard offer with National Grid for no less than six months. Once the supplier could beat the standard offer, the program was reinstated. In this case gross savings would be cut in half yet many of the recurring would be reduced, but not proportionately, which significantly impacts net program savings.

Furthermore, by aggregating and acting as contract manager, the City assumes a very large responsibility. If any issues arise regarding electricity, whether they are issues of mistaken billing or more general contract issues, the City would be obligated to play a part in the issue's resolution. In the absence of a Municipal Electric Aggregation, the City is not obligated. In

¹⁹ Given the estimated net savings, it is highly unlikely that the City will be able to obtain additional renewable energy without using a significant portion of the net savings. While the law allows the purchase of renewable energy through aggregation, the City would need to solicit support for purchasing renewable energy with any savings achieved prior to doing so. Regardless, customers may opt-out of the program if a significant portion of the savings is used to purchase renewable energy instead of being pass through to them. The Cape Light Compact allows participants to opt in to programs that provide additional renewable energy but does not include it as part of the base contract.

addition, the City is obligated to provide on going contract management to allow participants to opt-out as well as a certain level of ongoing education outreach.

VII. Summary

The costs associated with implementing a Municipal Electric Aggregation are significant. The City must weigh the value of resources to be allocated to this undertaking as well as the risk associated with assuming such a large responsibility against the potential savings for the public.

The probable ongoing aggregate net savings are considerable \$258-\$668,000, yet these savings translate to an annual average of \$3.64 - \$9.43 per participant depending the magnitude of recurring costs. Moreover, should the supplier not beat the standard offer rate with National Grid, the program could run a deficit since for a period of time there would be no savings realized to pay for recurring costs. This risk can be offset by utilizing a performance based contract so that the aggregation contractor assumes all the cost risk.

While the potential benefits of aggregation appear sufficient to offset the costs associated with allocating resources to this initiative, it is important to recognize these risks and responsibilities in addition to the probable net savings and opportunities when determining whether an aggregation would be in the City's best interest.

WorldEnergy

DATE: May 2, 2012
TO: John Odell, City of Worcester
FROM: Jon Harvey, World Energy Solutions, Inc.
SUBJECT: Revisiting the Municipal Electric Aggregation White Paper

In November 2009, the City of Worcester (the "City") asked World Energy to prepare a White Paper on establishing a Municipal Electric Aggregation for City residents. Recently, the City asked us to revisit the analysis and business justification. We examined key assumptions to determine if the justification for an aggregation is stronger or weaker than when the original analysis was conducted. This memo describes any changes to the assumptions and assesses whether the impact is positive or negative.

Cost Assumptions

The process to establish and manage a municipal aggregation has not changed since 2009. Therefore, we do not expect any of the hours and costs necessary to establish the aggregation to change. While it may be possible to manage the aggregation more cost effectively today, we do not believe there has been any significant technological changes that would enable us to reduce costs by any significant amount. In summary, we believe the cost estimates to establish and manage the aggregation are still sufficiently accurate.

Benefit Assumptions

There have been significant changes to key benefits assumptions. These changes are to the basic service rates. The following table shows the basic service rates for the three rate classes.

Assumption	Original 2009 Value (\$/kWh)	Revised 2012 Value (\$/kWh)
Residential Accounts – Basic Service (\$/kWh)	\$0.10920	\$0.06718
Commercial Accounts - G1 Fixed Basic Service (\$/kWh)	\$0.10651	\$0.06391*
Commercial Accounts - G2 Fixed Basic Service (\$/kWh)	\$0.10651	\$0.05301**

* This is the proposed rate for the period 5/1/12 – 10/31/12.

** This is the proposed rate for the period 5/1/12 – 7/31/12.

On average, there has been a 43% reduction in basic service rates over the time period. It is important to note that lower basic service rates will reduce potential aggregation savings since it takes a larger negotiated basic service discount to generate the same dollar savings as compared to when rates are higher.

Regarding the assumptions for the negotiated basic service discount (%), the original low and high estimates are presented in the following table. It is important to note that the ability of a supplier to offer a basic service discount is based solely on their ability to provide the administrative, billing, management, etc. functions more cost effectively than the local distribution company. Commodity costs (i.e., the electricity) are just a pass through. Therefore, the discount offered by a supplier is really just a discount to their retail adder. A supplier's ability to discount their retail adder is not dependent upon changes to commodity

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prices. However, lower commodity prices reduce a supplier's revenue and profit potential which may make them less likely to participate in an aggregation. We have no evidence to suggest that a competitive supplier will not be able to offer the same discounts in the current market. Therefore, these assumptions are still sufficiently accurate.

Assumption	Low Value	High Value
Residential Accounts – Basic Service (\$/kWh)	1.053%	2.106%
Commercial Accounts - G1 Fixed Basic Service (\$/kWh)	0.615%	1.230%
Commercial Accounts - G2 Fixed Basic Service (\$/kWh)	0.615%	1.230%

Leaving all assumptions constant except for the changes to the basic service rates, the net benefits from the municipal aggregation are reduced by nearly 40%. This reduction is to be expected based on the average reduction in basic service rates over the period.

In the original analysis we estimated that net saving on average would be between \$2.00-5.02 per participant in the first year but could be as high as \$11.24 or as low as (\$4.21) depending on the combination of costs and benefits. In later years, the average annual net savings increases to \$3.64-9.43 per participant with a range of \$0.20 to \$12.88 per participant.

The following table presents the revised net savings based on the lower basic service rates. The business justification for the aggregation has deteriorated significantly. In the revised analysis we estimate net savings to be (\$1.56)-(\$2.11) per participant in the first year but could be as high as \$4.11 or as low as (\$7.78) depending on the combination of costs and benefits. In later years, the average annual net savings increases to \$0.08-2.30 per participant with a range of (\$3.37) to \$5.74 per participant. Even in the best case scenario (low cost & high benefits¹) average annual net savings has fallen from \$12.88 to \$5.74 per participant.

Time Period	Annual Net Savings (High Cost & Low Benefits)	Annual Net Savings (Low Cost & Low Benefits)	Annual Net Savings (High Cost & High Benefits)	Annual Net Savings (Low Cost & High Benefits)
Start Up Year	(\$550,650)	(\$110,650)	(\$149,301)	\$290,699
Remaining Years	(\$238,650)	\$5,350	\$162,699	\$406,699

Time Period	Avg. Annual Net Savings (High Cost & Low Benefits)	Avg. Annual Net Savings (Low Cost & Low Benefits)	Avg. Annual Net Savings (High Cost & High Benefits)	Avg. Annual Net Savings (Low Cost & High Benefits)
Start Up Year	(\$7.78)	(\$1.56)	(\$2.11)	\$4.11
Remaining Years	(\$3.37)	\$0.08	\$2.30	\$5.74

Summary

One of the primary motivations behind a municipal aggregation is to reduce resident's utility costs. When basic service rates are high, potential savings are larger and may more than offset the costs to establish and manage the aggregation. Current, low basic services rates have gutted the potential savings of an aggregation but at the same time have delivered significant utility cost savings to the City's residents.

¹ High benefits signifies a large basic service rate discount.