

**CITY COUNCIL WORKSHOP MEETING
WEDNESDAY, JANUARY 15, 2014**

Call to Order

Mayor Merrifield called the workshop to order at 6:00 p.m. in the Council Chambers, Franklin City Hall.

In Attendance

Councilor Barton, Councilor Clarenbach, Councilor Starkweather, Councilor Feener, Councilor Desrochers, Councilor Giunta, Councilor Dzujna, Mayor Merrifield, City Manager Dragon, Finance Director Milner, Municipal Services Director Sullivan, Building and Grounds Supervisor Barry, Mr. Mike Davey and Mr. Tom Lopizzo with Energy Efficient Investments/ ENE Advisors. Merrimack, New Hampshire.

Mayor Merrifield turned the meeting over to Manager Dragon. She stated as you remember the request to schedule a public hearing for the February, 2014 Council Meeting was tabled at the January meeting. She stated she hopes to be able to go over the proposed energy project with the Council and answer questions with the hope of taking the motion off the table and move to a public hearing in February.

Mr. Mike Davey distributed copies of his power point presentation and it was decided the power point printed packet would be used by Mr. Davey for his presentation. This packet is attached to these minutes. Mr. Davey advised they are focused on doing energy performance contracts for New Hampshire municipalities and school districts. He stated they met with the Council last summer concerning the development of an energy project which could in part or fully pay for itself through the energy savings and a preliminary report was provided. He advised they have taken

the preliminary report a little bit further firmed up costs and energy savings and now want to request a public hearing and prior to the public hearing a final report but the costs and savings currently provided should be very close. Mr. Davey advised they currently have energy performance contracts with the Cities of Providence, RI, Everett, MA, Manchester and Portsmouth, NH He advised they performed an initial audit which identified \$17,554 in potential annual energy savings. This figure is based on low fuel prices; natural gas is at its all-time low. EEI will guarantee the minimum savings and any increases in the savings. Manager Dragon commented the assumed inflation rate that was used in the calculations is 3%. Mayor Merrifield inquired the annual savings of \$17,554 estimated each year and we are recognizing that natural gas prices are volatile and so that savings might not materialize. Mr. Davey responded the savings it is based on is what the City is currently paying which is \$1.11 per therm so if this project was done today based on the usage the City would save \$17,000. Natural gas prices have just increased 8%, the 8% increase has not been included, in fact if signing on the project today the savings would be 8% higher year 1 than was projected. Manager Dragon commented basically it is a very conservative estimate. Mr. Davey further stated this project comes with a guarantee from them so he stated they will always be conservative on the annual savings amount.

Councilor Giunta commented that it was stated that future predictions on gas prices would go up. Councilor Giunta stated the Energy Information Agency has predicted that diesel prices will stay the same through 2017 so what reference was used that shows that gas prices will go up in the future. Mr. Davey responded it is based on energy inflation that has been

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consistently used on these projects in the past and in general he stated they attended the annual energy conference by the Association of Energy Engineers which is put on by Northern Utilities who owns PSNH and the reason they are anticipating gas prices to rise in the future is there is a capacity issue into New England. He further stated right now most of the gas is coming from the Midwest and there is sufficient capacity to get that gas to the New York area. Once you come to New England there is a major capacity problem and in fact in this recent severe area the average price people were paying was \$8.00 to \$10.00 per deca therm for natural gas and when the spike hit and the capacity could not be kept up they were paying \$37.00 per deca therm to generate electric and natural gas. 3% is a very conservative escalation; however, that assumption is something we can talk about. To help offset the cost of the project; EEI has obtained at least \$64,000 in grants/rebates from PSNH and Liberty Utilities. The goal of the project is to replace antiquated equipment and controls and provide remote digital control access for all City buildings. Currently someone comes in City Hall and manually turns the boiler on or off which is not a good practice.

The Total project would \$364,114 that would save \$17,000 and yield \$67,000 in rebates for year 1 which would pay itself with no investment from the City over a 16 year period. It would allow new boilers in the Bessie Rowell Center, digital controls for all of the buildings (City Hall, Proulx, Rowell Center, DPW Garage, Police Station) and replacing antiquated boilers at the Proulx and addressing the many issues on the heating standpoint side here at City Hall.

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Mr. Davey advised there are two major issues they are addressing on Building Envelope. Currently in the Proulx Center there is only about 3 inches of insulation in the attic space above the gym area and as an example 3" it is usually about an R3 per inch so that is equal to an R9 of insulation and what is recommended for commercial buildings is an R30 and they proposing putting in an R50 value of insulation.

Councilor Desrochers asked if the boiler in City Hall is to be replaced. Mr. Davey responded their pass through it was not part of the project but on the second pass through it was included and that is open for discussion. It was included because of the tremendous amount of problems that have been taking place in City Hall with the boiler. It is 14 or 15 years old and if new controls are put on, the code requires if you replace the burner on a natural gas burning appliance you have to have a chimney liner and currently the current system does not meet code so there is a lot of work that would have to be done anyway so it is recommended that the boiler be replaced and it also makes available a rebate from Liberty Utilities in the amount of \$16,320. Manager Dragon commented that she is the one that pushed to have the City Hall boiler replaced. She stated she has been here 5 years and there have been several issues with the boiler and the fact we could get the potential rebate and the boiler is reaching the end of its life anyway on top of the maintenance issues and the code issues. Councilor Desrochers asked if the boilers would be cast iron or steel. Mr. Davey responded they are cast iron boilers. The reason the burner needs to be replaced is currently the burner is a high/low fire burner and it is to be replaced with a four degree step down burner so the system will only fire to meet the demand of the building.

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Currently it is controlled by pressure meaning there is a pressure center that is monitoring the steam line which changes the boiler to either high or low. What is proposed to put in is a timed boiler with digital sensors throughout the building so rather than controlling a system on pressure there will be digital thermostats with averaging temperatures and that will feed into the boiler loop and it will fire with a four to one turndown rather than just fire high, low, on, off.

Councilor Giunta asked Mr. Davey in his opinion is the boiler problem we have been having a maintenance issue, is it repairable with equipment, has it been neglected, what is your professional opinion on what is the problem with the boiler. Mr. Davey responded that the greatest issue is the fact that even though it is a relatively young boiler, you have failed steam traps throughout the building which means that you are constantly running steam 100% back through the boiler, the traps aren't starting it, the controls don't work, so just operating in that condition the boiler taken more of a beating. That being said, he stated it is possible that you could put in new controls, put in steam traps and get about 5 more years of useful life out of it. The benefit to doing it now is that replacing it now, getting the \$16,000 rebate, getting a new system which they would be completely responsible for. Councilor Giunta commented when you talk about getting 5 more years out of the system what we are talking about is a boiler failure (cracked boiler) in possibly 5 years not necessarily a burner.

Councilor Dzujna asked if all the steam traps will be replaced. Mr. Davey responded the steam traps that are functioning properly there is no reason to replace them, so we did a steam trap survey

of every single steam trap throughout the building. He stated in general 36% of the steam traps in City Hall and 43% of steam traps at the Proulx Center have completely failed. Those steam traps will be replaced.

Councilor Starkweather stated the boiler being proposed is 85% thermo efficiency, is there any thought given to a more efficient boiler or having two smaller boilers with the second one kicking on only when needed. Councilor Starkweather explained that the reason he is asking that is the boiler was replaced recently at the Fire Station and it cut the gas assumption in half and their efficiency is up in the 90% range. Mr. Davey responded this boiler is the absolute best boiler on the market, the high efficiency boilers you see advertised at 95%/96% in general they are hot water boilers. Councilor Starkweather questioned since the biggest problem is the steam traps and we are considering replacing the boiler, could the steam traps be eliminated and go to a hot water system and eliminate a lot of the problems? Mr. Davey responded they looked at that and the estimate for City Hall was in the area of \$175,000 and this would push the curve out and the efficiency pickup would never pay for that. A steam system, well maintained and well controlled is an adequate system. He advised Dartmouth College is 100% steam and the ships out at sea are steam powered, steam is not a bad thing, it just needs to be maintained and the traps have to work as well as the controls. Councilor Starkweather asked if the City signs a contract which figure will we go by. The early figure did not include the City Hall boiler and he stated the packet before you tonight is the correct costs.

Mr. Davey stated in the Proulx Center Gym the light fixtures are no longer manufactured and a LED conversion is proposed for those fixtures and would have a life span of approximately 22 years based on run time.

Councilor Clarenbach commented for him the bigger issue here is to try to decide as a Council where we need to most appropriately spend our capital funds. One our responsibilities is to be good stewards to our buildings which is not always possible in the current budget environment so we end up spending operating costs to compensate for our lack of planning. He stated his only problem with this project is that the capital outlay of \$100,000 that we just put there and to now spend it when the road conditions in the City are not unlike other cities but infrastructure is not only buildings, it includes roads, sidewalks etc. When we look at this, here is Rowell Center that the City took in as a building and has only been in our inventory for 2 years and we are going to invest \$100,000 into the Center and then Proulx Center and do lighting improvements to a gym that doesn't get much use except during basketball season. He stated he does not disagree with the proposal but where do we come up with the funding and then when a road goes or a culvert where do we find the funding to do that. He stated he is not saying he is against this project, he stated he just feels this Council has really had a good discussion as to where we are going to invest what little money we have.

Councilor Giunta stated it is very important in his mind since he learned from George Turcotte that we are in need of some serious repairs up on Central Street towards Hannafords. He stated it was presented to him that these were dire repairs that are needed immediately or "lose that whole road". Councilor

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Giunta stated this gives him great concern and we certainly cannot lose Central Street. Councilor Giunta asked is this road about to fall apart in one year, five years? He asked Director Sullivan what needs to be done. Director Sullivan stated we can prolong the life. When the word "lose" is used in a public works scenario could be 5 years. Director Sullivan stated there is definitely unravelling occurring. You have the Kendal Street intersection which was done when the State came in. Then CVS put in \$125,000 signal box which saved the City a lot of money and an intersection was overlaid there. In between Kendal and where CVS is and beyond CVS to Hannafords there are two sections that will be lost like other roads but it is maintenance; the longer they go without maintenance, crack sealing, filling pot holes. He stated they lost a section of Central Street recently coming down the hill so 120 tons of asphalt was poured there in order to hold the road. Director Sullivan stated concerning Central Street we could bring a grinder in and grind out some sections, do some crack sealing and get another 5 years out of it but like anything we need money to do that. Director Sullivan stated he supports this project.

Manager Dragon stated we can talk about roads, we can talk about buildings, we can talk about equipment, we can talk about a variety of things and we certainly have a lot of needs. She stayed during the time she has been here the only way that the City has made progress in capital items is by taking advantage of grants and other creative way of funding projects. It has pushed some things forward that might not otherwise happened. Sometimes there might be something we were considering two or three years from now but we can access this money now and roll it in and make it affordable, then it makes sense to do it. If we can access

grants, rebates and have an energy savings that helps us fund it over a number of years, it then makes sense.

Councilor Giunta stated what he heard regarding Central Street is we need to do some grinding and crack sealing this spring, and he asked do we have the money to do that. Director Sullivan stated that would be in the operating budget for fiscal year 2015. Director Sullivan also clarified when he says grind, it would be grinding out very small spots with a bobcat. Councilor Giunta asked what the price tag would be and Director Sullivan stated for maintenance approximately \$30,000.

Councilor Desrochers commented we have to spend the money, we really don't have much choice; we need to do this. He advised the loans for the Daniel Webster Bridge will be paid off soon which will release funds up to the City. Councilor Desrochers commented he feels the City spends too much money on Central Street and are not meeting the needs of all the other roads. He stated there are sidewalks on Central Street that are only 5 or 6 years old, and there are sidewalks elsewhere in the City that are as old if not older than he is. He stated as far as this energy project goes, we don't have a choice, we have a heating system that is defunct and two boilers that are defunct.

Councilor Clarenbach stated if we look at the old proposal did that actually reflect the savings of the energy to the term for the payback without the \$100,000. Mr. Davey stated first this project was \$298,000 and then \$66,000 was added and now the proposal before you is \$364,000 so the difference is primarily the boiler and a few other things. The project is \$364,000 in project costs plus a bond fee and a contingency with \$17,000 in conservative savings

amounts and that pays for itself without looking at energy inflation, without looking at interest. If you just had \$360,000 and you didn't think about what energy would do in the future that would pay for itself in about 16 years. The City Hall boiler was added in, it has a longer payback so that pushed that payback out and the loan that you had in front of you, there was a lease amount was a 12-year period which is a very attractive rate. To make that cash flow tax neutral with the new boiler at City Hall it required the \$100,000 down payment and the rest would be tax flow neutral. This project would pay for itself with longer financing over 20 years but the interest rates go up. You could do like Manchester did and take out a 20-year bond and not have to put any capital into the project and let the energy savings pay for it. Mr. Davey stated they put forth this option because leasing has really good rates.

Councilor Giunta asked Manager Dragon that Director Sullivan had stated he would need \$30,000 in the fiscal year budget 2015 and will that be made available to him. She stated this year there will be a no numbers budget workshop in March to get priorities from the City Council as well as meetings with the different committees to learn what priorities come from those meetings and all priorities are given consideration in the preparation of the Manager's budget that is presented to the Council.

Councilor Starkweather stated this is a lease/purchase so is there any guarantee the City will get a payback. Mr. Davey stated they are guaranteeing the \$17,500 payment in terms of energy savings at the current cost rate and if we decide to inflate it we would base the savings on that. So the savings is based on current rates, if electric quadruples tomorrow our savings are still based on year

one. Under key assumptions it is stated in the proposal that the electric rate is assume at .15 cents per KWH; gas rates at \$1.11 per therm of natural gas so all the savings are based on the City's historical average. In 2009 the City was paying \$1.34 per therm so if this project had been before you in 2009 those savings would have been even higher. Manager Dragon stated the City has an energy performance contract which would guarantee those savings which has been reviewed by the City Attorney and amended to meet his requirements. Councilor Starkweather stated if we go ahead with this project there is a guarantee that we will get the payback that we anticipate for the life of this program which is 12 years and material that has a life expectancy of 20 years and Mr. Davey responded that is correct concerning the guaranteed payback and the life expectancy of the materials/equipment would be anywhere from 15 years to 20 years. Mr. Davey also stated if the savings are better than projected the City keeps the savings. Councilor Starkweather asked will the ceiling in the Proulx Center support the proposed insulation. Mr. Davey stated yes we believe the ceiling will support it, however, the in accordance with a request for Building Inspector Bodien the ceiling will be inspected prior to the installation of insulation.

Councilor Feener stated he wants to clarify that 50% of the improvements are heat improvement, boilers, controls, steam traps and the useful life of these with average maintenance would be 15 to 20 years. Mr. Davey stated for boilers we say an average of 20 years, controls Mr. Davey stated they have controls that were install in the 70's and are still operating fine; he stated there is not a lot that breaks on controls. Councilor Feener asked about the lighting fixtures will they last 15 to 20 years? Mr. Davey

stated it does depend on run time hours but the LED Retros that are proposed for the Police Station, Rowell Center and Proulx have a 22 ½ year estimated life. Councilor Feener stated his concern is we go 12 years out on this lease/purchase and at year 13 we are back doing the same thing with a lot of major upgrades again. Councilor Feener stated this proposal is for 15 to 20 years for the most part so it makes sense to do this.

Councilor Dzujna asked if LEDs will be used in all the buildings. Mr. Davey advised that where it makes sense to do LEDs will be used, there is not a good LED replacement for every type of fixture yet and as an example stage lighting, there is just not a good fit. He stated they focused on the 2' x 4' fixtures that are in the Police Station. He advised your typical 2' x 4' fixture typically uses 3 to 4 lamps and they burn between 96 and 88 watts per fixture and the LED replacements that will provide equal or better light will have 37 watts so therein is more than a 50% reduction in wattage and additionally it is a better looking fixture. He also stated they would be happy to install some trials before going throughout. Councilor Dzujna asked if the switches have to be changed and Mr. Davey stated only if it is a dimming fixture. Councilor Dzujna asked why we would do anything with the lights in the Proulx gym if it is not going to be used. Manager Dragon responded that it will be used for basket 5 or 6 months out of the year and is used on a regular basis after normal operating hours. The regular part of the building is used for Planning/Zoning and Assessing 8 am to 5 pm and FBIDC is downstairs in the Proulx Center. Mr. Davey advised that the lights currently in the gym at the Proulx Center he has never seen before and are not available for purchase. The City still has a small supply of these lights but when they are gone that's it. He further stated some of the items

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in their proposal are simply to replace obsolete items. Brian Barry asked if any occupancy sensors would be part of this project and Mr. Davey stated yes such as in bathrooms or corridors.

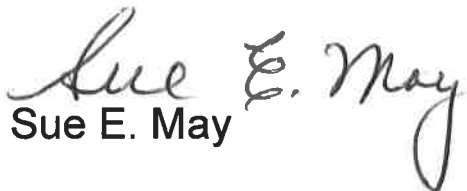
Motion made by Councilor Giunta that the Franklin City Council take from the table the motion to schedule a public hearing for February 3, 2014 at 6:06 p.m. regarding the adoption of Resolution #07-14 approving the Energy Performance Contract with Energy Efficient Investments, Inc. and authorizing the City of Franklin to enter into a lease purchase agreement with the Municipal Leasing Consultants. Motion seconded by Councilor Feener.

There was some mention of a 15 year agreement, Councilor Feener commented that the 12 year agreement is a good one and hopefully within 12 year the City will be in better financial shape. \

Councilor Feener call the question, seconded by Councilor Giunta. All in favor. All in favor of the motion to schedule the public hearing.

Motion to adjourn made by Councilor Clarenbach, seconded by Councilor Feener. All in favor, meeting adjourned at 7:50 p.m.

Respectfully submitted,


Sue E. May

Attachment: Presentation by EEI



Energy Efficient Investments ENE Energy Advisors

City of Franklin, NH Energy Retrofit

January 15, 2014



The EEI & ENE Energy Advisors



ENE System, Inc. is the largest independently owned Controls Contractor in New England (Since 1987)

EEI was founded by ENE to service New Hampshire clients (Since 2007)

Local ownership and management



Franklin Preliminary Energy Audit

EEI performed an initial energy audit which identified \$17,554 in potential energy savings. This is a conservative estimate based on the historically low fuel prices that are currently seen. EEI will guarantee the minimum savings and any increases in the savings will go to the City

The City of Franklin has the opportunity to utilize the \$17,554 (plus inflation to have the project be tax neutral over time). The City of Manchester recently passed a \$3 million dollar 20 year bond and are using energy savings to pay for the improvements in a tax neutral manner.

EEI has obtained at least \$64,000 in grants and rebates to help offset the cost.

The Project replaces antiquated equipment and controls and provides remote control access for all City Buildings in the project. It leverages stronger payback with long term capital needs.

ECM Matrix

Energy Cost Measure Number	ECM Description	Cost for Installed Measure	Estimated Annual Energy Savings	Potential Rebate
City Hall				
1a	Lighting Retro-fit	\$ 12,000	\$ 594	\$ 1,600
2	Vending Miset	\$ 500	\$ 45	\$
3	Insulation Improvements	\$ 7,500	\$ 250	\$ 2,625
4	Boiler Replacement	\$ 66,500	\$ 280	\$ 16,360
5	Boiler Controls	\$ 7,000	\$ 1,300	\$
6	Chimney liner	\$ 7,500	\$	\$
7	Stream Trap Re	\$ 17,854	\$ 2,240	\$ 1,505
	City Hall Subtotal	\$ 118,854	\$ 4,709	\$ 22,090
Proulx				
1	Lighting Improvements	\$ 13,000	\$ 867	\$ 2,160
2	Digital controls	\$ 5,320	\$ 500	\$ 3,000
3	New Steam Boiler & Insulation	\$ 62,510	\$ 280.00	\$ 13,000
4	Steam trap repairs & Controls	\$ 11,580	\$ 2,200.00	\$ 1,637
5	Insulation Improvements	\$ 15,000	\$ 1,500.00	\$ 6,750
	Proulx Subtotal	\$ 107,410	\$ 5,347	\$ 26,547
Rowell Center				
1	Lighting Improvements	\$ 21,000	\$ 1,497	\$ 4,600
2	Vending Misers	\$ 500	\$ 45	\$ 4,500
3	Boiler Replacement & VFD Controls	\$ 9,500	\$ 1,500	\$ 3,500
4	DDC Controls	\$ 63,840	\$ 1,000	\$ 2,000
	Rowell Subtotal	\$ 94,840	\$ 4,042	\$ 14,600
DPW Garage				
1	Lighting Improvements	\$ 4,000	\$ 310	\$ 450
	DPW Subtotal	\$ 4,000	\$ 310	\$ 450
Police Station				
1	Lighting Improvements	\$ 11,160	\$ 1,200	\$ 1,200
2	Exterior Lighting Improvements	\$ 14,050	\$ 1,400	\$ 2,200
3	Vending Miser	\$ 500	\$ 45	\$
4	DDC Controls	\$ 13,300	\$ 500	\$
	Police Subtotal	\$ 39,010	\$ 3,145	\$ 3,400
Summary				
	Project Total	\$ 364,114	\$ 17,553	\$ 67,087
	Bond Fee	\$ 4,551.43		
	Measurement & Verification	\$ 3,641.14		
	Contingency 5%	\$ 18,205.70		
	Project Total	\$ 390,512		

Building Issues Envelope

- Little insulation in the Proulx Building and no barrier between boiler room and upstairs at City Hall.





Current Controls Issues

- Little Control of City Hall Steam system.
- Failed Steam traps throughout building
- No digital control or remote access
- Proposed system digital with remote access.
Will allow timed morning warm up, scheduling of weekends, vacation, and holidays and remote diagnostics



Failed Steam Traps

- More than 30% Steam traps have failed at Proulx and City Hall which reduces controllability of system, decreases boiler life and reduces efficiency. Failed traps will be replaced and additional controls added



Energy Performance Contract Goals

- Improve Buildings in the City of Franklin
- Reduce Energy Costs
- Create a Project that is cost neutral in which energy savings pay for project cost
- Reduce Energy Consumption
- Guarantee Annual Energy Savings

Boilers

- Boilers at Proulx and Rowell are at our near end of life. City Hall Boiler has had significant problems in the past.



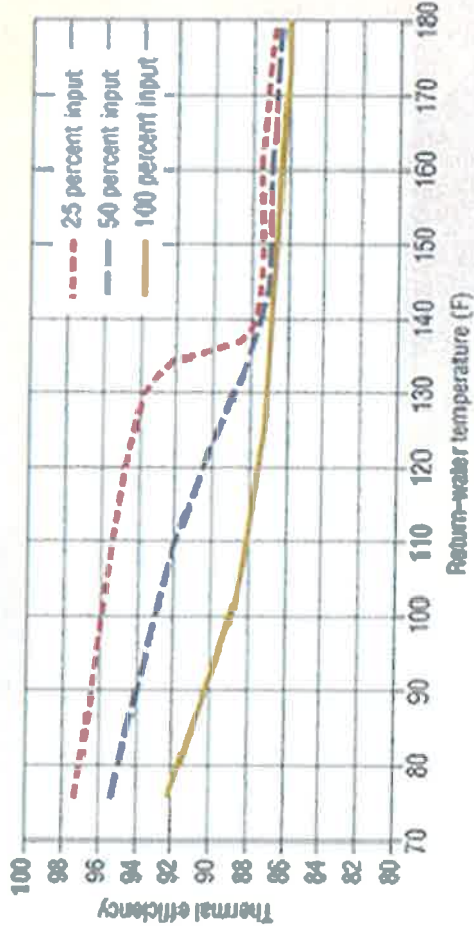


Age & Efficiency

- Proulx Boiler 30 years old and 74.5% efficient
- Rowell Center 20 years old and 82% Efficient
- City Hall 14 years old and 78% Efficient

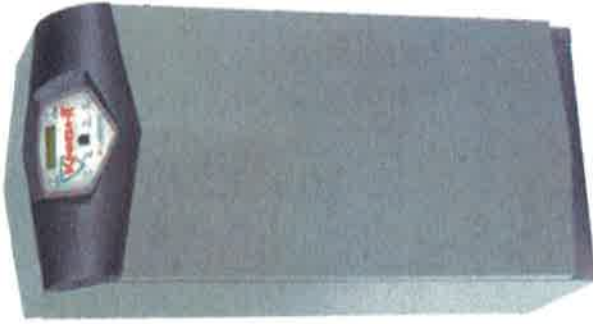
Rowell Boiler

- 20 standard efficiency year old boiler can be replaced with a high efficiency condensing boiler. These boilers operate at more than 95% efficiency



New Boilers

95% Efficient
Condensing boiler



88 series 2
West-McLain

Reliability... Redefined!

Model 88
-Est. 1983-

- 85.6% Thermal Efficiency
- Water or Steam
- Gas, Oil or Gas/Oil
- 100 - 2649 MBH Input
- 24-142 H.P.
- Complies to LEED
- Single or Multiple Boiler Systems
- With or without tankless burner
- Packaged or Field-Service
- 0% Oil, Low Night Oil
- Low NOx and 400 Modulation

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EET & ENE ENERGY ADVISOR



Key Assumptions

- Electric Rate \$.15 per KWH
- Gas Rate \$1.11 per Per Therm
- EEI to provide annual savings report normalized for heating degree days.
- Interest rate at 3.14%. 3% inflation in financing



Next Steps

- Approval project & financing mechanism
- EEI to finalize design for approval



Questions & Answers

Please email follow-up questions to Mike Davey at

MDavey@EEIServices.com

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