CURRENT OFFERINGS FROM THE WISCONSIN OFFICE OF ENERGY INNOVATION

Local Government Programs and Funding Opportunities

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Wisconsin Office of Energy Innovation

4/5/2017

Wisconsin Academy of Science Arts and Letters

THE NEED FOR TECHNICAL ASSISTANCE

MEETAP- funded through 2013 SEP Competitive Award $400,000

Enabling Legislation - State of WI statutes 66.0133 allow for energy and life safety improvements (as well as critical deferred maintenance).

WI Statute 121.91(4)(o) Revenue Limit Exemption for Energy Conservation Purposes

MEETAP IN A NUTSHELL

Planning Phase

Is ESPC is the right for you
"Up-Front" strategy

ESCO Selection Phase

Assist with creating RFP/ RFQ
Assist with proposal review
Identify Funding Methods

Audit Phase

Final ECM and R&R Matrix review
M&V, Training and Cx Plans review

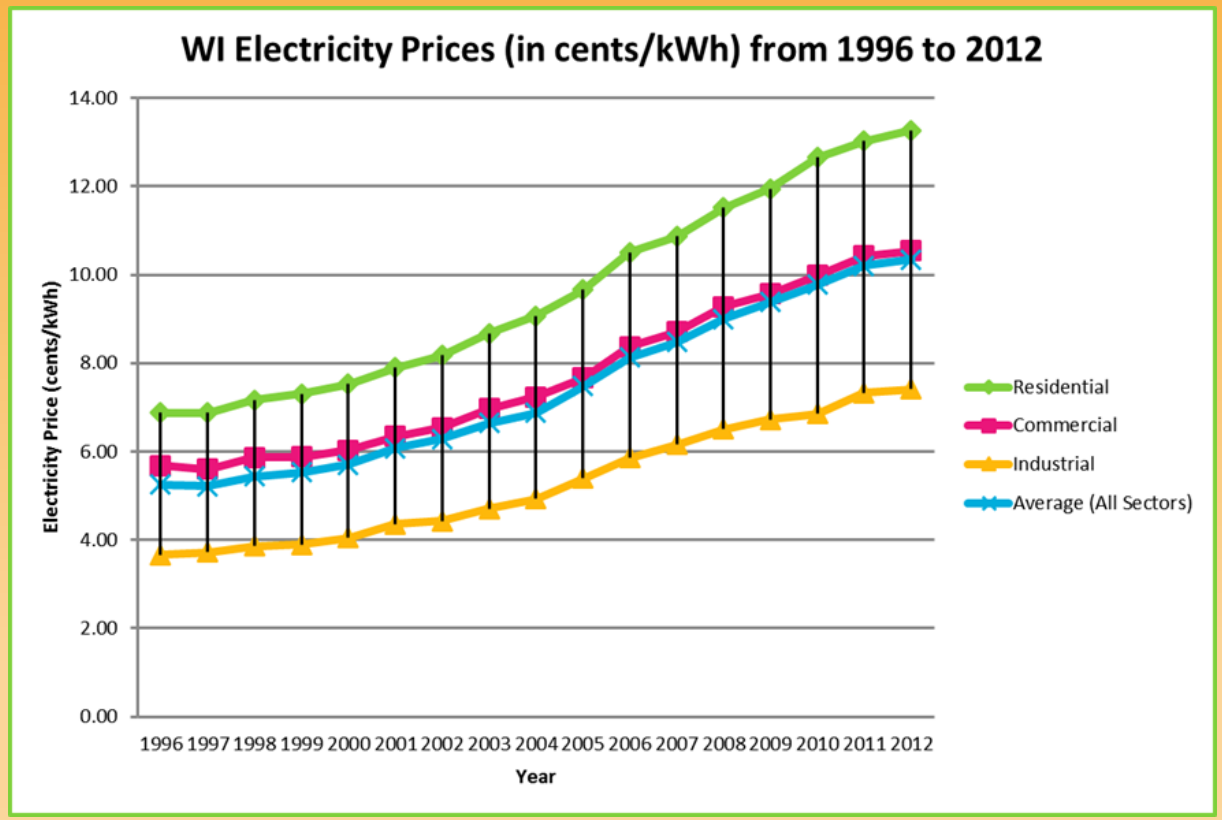
Implementation Phase

Review proposed change orders
Assist with engineering and/or technical disputes
Verify proper training and Cx

Post Acceptance Phase

Review the initial M&V Reports

WHY MEETAP?


WI Electricity Prices (in cents/kWh) from 1996 to 2012
Electricity Price (cents/kWh)
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Year
Residential
Commercial
Industrial
Average (All Sectors)

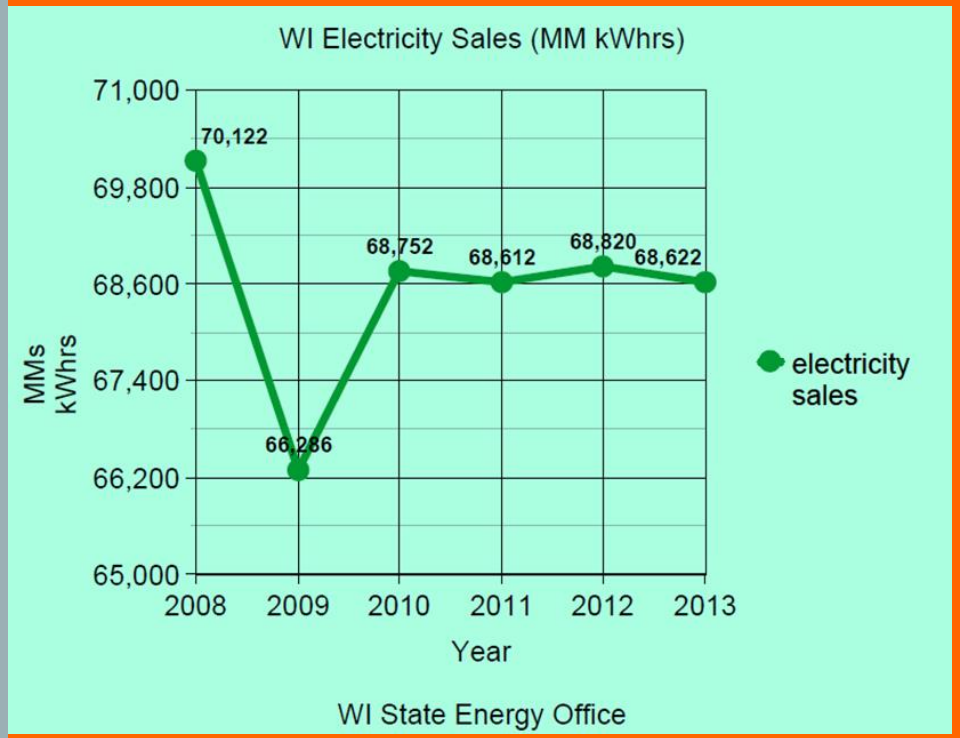
WHY MEETAP?

DEMAND IS FLAT

Technical assistance with complex projects is welcomed

Energy Costs are some of the few costs that schools and municipalities can control

Rate analysis and special focus on Demand charges



CHALLENGES FACED BY LOCAL UNITS OF GOVERNMENT

Budget Concerns

Building Consensus

Long Term Planning

Return on Investment

Faith in Technology??

SCHOOLS FACE PARTICULAR CHALLENGES

Budget Concerns

Building Consensus

Long Term Planning

Return on Investment

Faith in Technology??

Infrastructure Investment vs Investment in the Children?

Proprietary controls technologies

Legacy of Efficiency- A total of 60 districts have certified at least one facility since 2000, with a total of 335 unique school buildings receiving a total of 564 certifications.

ENERGY STAR

THE DELIVERY

Simple Utility baseline

TEMPLATES

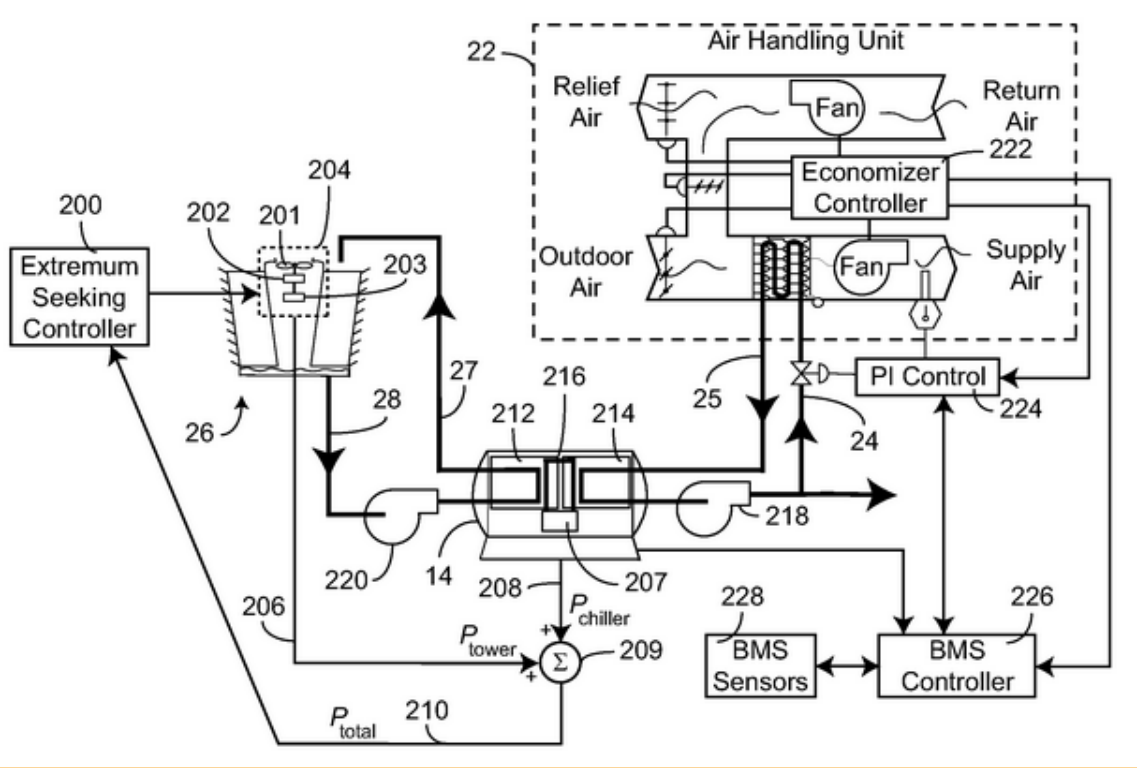
Look at ESPC as an alternative to traditional contracting and funding means to increase number of EE projects

Open to School districts, technical colleges and municipalities

Focus on small and medium-sized districts to realize the full benefits of working with an ESCO

Leverage state resources and experience to help guide locals through an often unfamiliar process

NAVIGATING COMPLEX SYSTEMS



Control of cooling towers for chilled fluid systems

US 20110276182 A1 Johnson Controls

CHALLENGES

Slow start

Grant awarded in February of 2014

Engineer hired in August of 2014

Engineer's position eliminated in the Governor's Budget (Act 55) effective July 2015

Act 55 did not receive the same protests as seen here.

THE MORE THINGS CHANGE. .

The more they stay the same

CLEAN ENERGY INVESTMENT IN WI COMMUNITIES THAT WORK

Converting 85 street lights from 150-watt metal halide fixtures to LEDs in

Prairie du Chien will save the city about 54,728 kilowatt hours per year, an annual savings of about $7,052.

The LEDs have a five-year warranty

Life expectancy of 50,000 hours of on-time use

Run time of 4,300 hours per year

Expected life of eleven and a half years

Cost savings over 11.5 years estimated at $78,000.

WHAT MEETAP CAN DO

Name	Class	Energy Use kwh/1000 Gals	Energy Expense $/1000 Gals	Energy Expense $/kwh	% Loss	Total Primary Pump HP	All On Primary Pump KW	Well Pump Capacity Factor	Power Purchased for Pumping	Estimated Pumping Savings	% Pump Energy Cost Savings	Pumping kwh/1000 Gal Analysis	Max Pump KW/1000 Gal	Min Pump KW/1000 Gal
Waupaca Water Utility	AB	1.02	$ 0.1957	$ 0.1927	22.70%	1,391	1,043.25	22.61%	$ 134,063	$ 67,032	50.0%	< Min Pump	4.95	1.40
Monona Water Utility	C	1.31	$ 0.2889	$ 0.2202	7.50%	120	90.00	16.71%	$ 98,941	$ 49,471	50.0%	> Max Pump	0.50	0.31
Cottage Grove Water Utility	C	1.83	$ 0.3264	$ 0.1784	2.74%	375	281.25	12.01%	$ 58,709	$ 29,355	50.0%	w/in Range	1.88	1.42
Kewaunee Municipal Water Utility	C	1.42	$ 0.3298	$ 0.2330	19.45%	125	93.75	10.46%	$ 41,258	$ 20,629	50.0%	w/in Range	1.63	0.37
Ashwaubenon Water And Sewer Utility	AB	0.13	$ 0.0265	$ 0.2078	7.73%	1,050	787.50	35.76%	$ 32,592	$ 16,296	50.0%	< Min Pump	2.60	1.50
Princeton Municipal Water And Electric Utilities	C	2.84	$ 0.6452	$ 0.2271	7.14%	85	63.75	5.73%	$ 24,303	$ 12,152	50.0%	> Max Pump	1.17	0.28
Marshall Water And Sewer	C	1.53	$ 0.2821	$ 0.1841	7.37%	140	105.00	11.88%	$ 23,342	$ 11,671	50.0%	w/in Range	1.54	1.00
Greendale Water Utility	AB	0.28	$ 0.0445	$ 0.1596	25.35%	235	176.25	13.40%	$ 22,486	$ 11,243	50.0%	w/in Range	0.57	0.27
Oostburg Municipal Water Utility	C	1.89	$ 0.3449	$ 0.1822	3.64%	115	86.25	9.00%	$ 20,071	$ 10,036	50.0%	> Max Pump	1.45	0.78
Village Of Howard Water Department	AB	0.12	$ 0.0294	$ 0.2373	15.54%	650	487.50	41.41%	$ 19,550	$ 9,775	50.0%	< Min Pump	2.82	2.50
Town Of Westport Water Utility District	D	2.43	$ 0.3885	$ 0.1596	-0.24%	175	131.25	4.51%	$ 15,641	$ 7,821	50.0%	> Max Pump	1.34	1.25
Village Of Brokaw Water Utility	C	2.77	$ 0.6877	$ 0.2484	21.42%	470	352.50	0.95%	$ 13,762	$ 6,881	50.0%	> Max Pump	1.92	0.50
Randolph Water Utility	D	2.56	$ 0.3138	$ 0.1223	13.41%	520	390.00	4.91%	$ 12,745	$ 6,373	50.0%	w/in Range	15.18	0.47
Shiocton Municipal Utility	D	2.33	$ 0.5383	$ 0.2312	16.07%	80	60.00	3.38%	$ 11,472	$ 5,736	50.0%	> Max Pump	0.83	0.83
Mindoro Sanitary District # 1	D	2.99	$ 0.7369	$ 0.2461	1.37%	50	37.50	6.85%	$ 11,147	$ 5,574	50.0%	> Max Pump	1.84	1.25
Frederic Water Utility	D	1.39	$ 0.2107	$ 0.1521	14.63%	150	112.50	5.93%	$ 10,174	$ 5,087	50.0%	w/in Range	1.67	0.94
Village Of Rib Lake; Water Utility	D	1.47	$ 0.3409	$ 0.2318	9.83%	35	26.25	18.67%	$ 10,037	$ 5,019	50.0%	w/in Range	2.08	0.83
Brooklyn Water Utility	D	2.59	$ 0.3198	$ 0.1237	11.02%	462	346.50	3.79%	$ 9,425	$ 4,713	50.0%	w/in Range	8.15	1.33
Florence Utility Commission	AB	1.39	$ 0.1711	$ 0.1228	19.44%	220	165.00	3.37%	$ 7,502	$ 3,751	50.0%	> Max Pump	1.25	0.74
Elmwood Municipal Water Utility	D	1.69	$ 0.3076	$ 0.1824	10.05%	120	90.00	3.07%	$ 7,110	$ 3,555	50.0%	w/in Range	2.17	0.83
Lone Rock Water Utility	D	0.72	$ 0.2031	$ 0.2819	8.38%	60	45.00	4.38%	$ 4,161	$ 2,081	50.0%	< Min Pump	0.94	0.77
Village Of Amherst Water Utility	D	1.67	$ 0.3484	$ 0.2082	14.50%	85	63.75	9.07%	$ 12,620	$ 6,308	50.0%	> Max Pump	1.49	1.36
Delavan Water & Sewage Commission	C	2.46	$ 0.4374	$ 0.1779	9.74%	315	236.25	12.26%	$ 111,866	$ 54,841	49.0%	> Max Pump	2.19	0.48
Alma Municipal Water Utility	D	1.84	$ 0.3687	$ 0.2001	31.94%	70	52.50	7.81%	$ 9,761	$ 4,663	47.8%	> Max Pump	1.50	1.27
Village Of Eagle Water Utility	D	2.23	$ 0.3387	$ 0.1518	7.33%	180	135.00	5.55%	$ 16,887	$ 7,996	47.4%	> Max Pump	1.97	1.04
Bagley Municipal Water Utility	D	1.73	$ 0.3437	$ 0.1985	20.06%	50	37.50	3.21%	$ 3,715	$ 1,758	47.3%	> Max Pump	1.25	0.74
Verona Water Utility	AB	1.02	$ 0.1579	$ 0.1541	24.15%	740	555.00	15.64%	$ 85,314	$ 39,344	46.1%	< Min Pump	1.88	1.14

Using PSCW and WDNR water utility regulatory filing databases to develop benchmarks for evaluating energy savings opportunities.

Energy cost savings were estimated for water utilities with multiple pumped wells, elevated storage, low well pump capacity factors and high pumping costs ($/kwh and $/1000 Gal).

MEETAP is reaching out to interested utilities with screening estimated savings greater than 20%.

MEASUREMENT &VERIFICATION

Involve as many stakeholders as possible

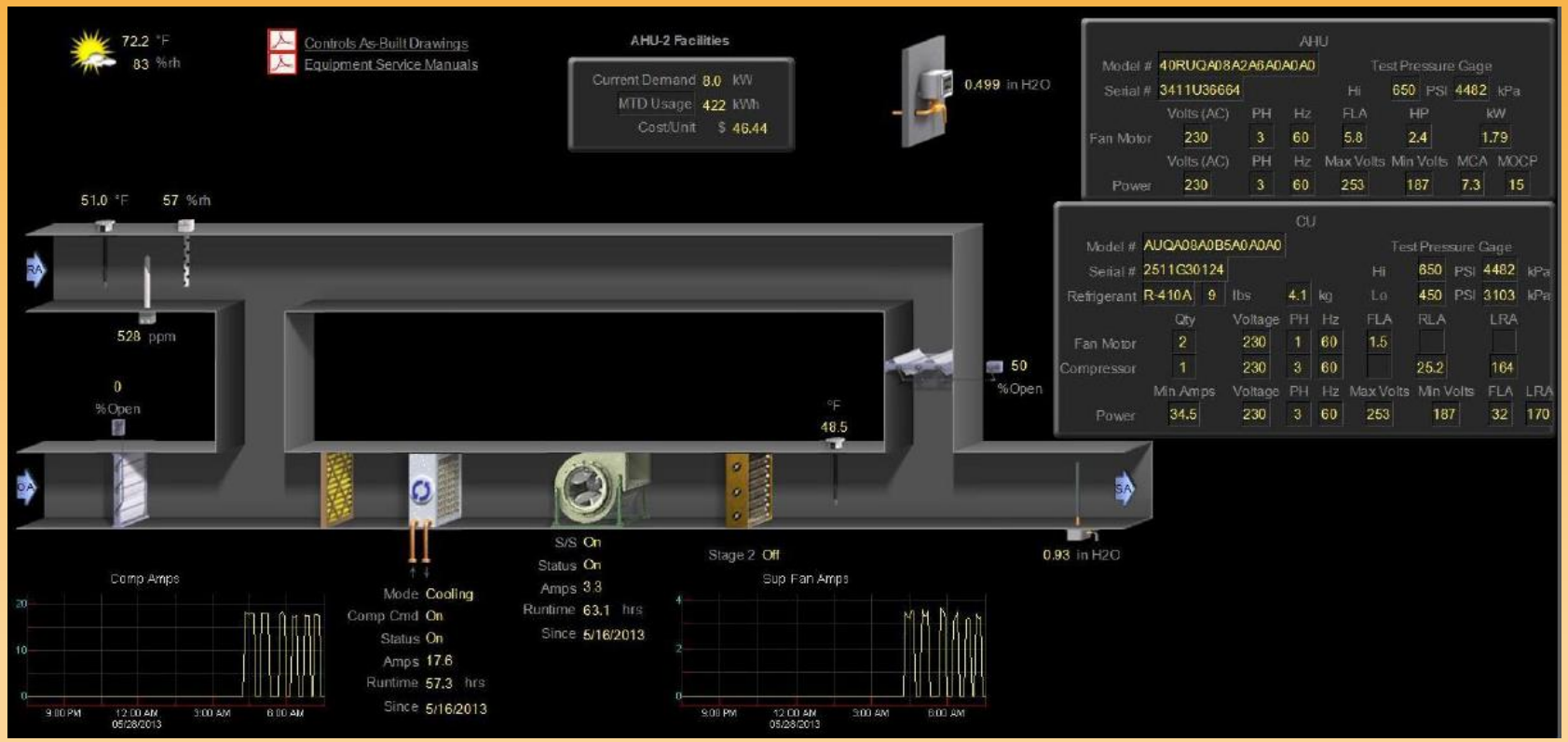
Tie in with K-12 Energy Education Project

Use EPA Portfolio Manager

Provide customized reports

Wireless Sub-meters

ENERGY MANAGEMENT SYSTEMS



Proof in the Pudding – Nate Boyd

bbs2013_boyd_proof_pudding_verifying_results.pdf

CURRENT STATUS

Contract with current Measurement and Verification specialist open to local partners

25 projects underway:

BTO grant with City of Milwaukee

Training Wastewater Operators to collect energy information across all 1000 WWTPs in the state

What's Next?

FART BACKPACKS IN SCHOOLS?

Questions?