

A REGULAR MEETING

Of The

TRAVERSE CITY LIGHT AND POWER BOARD

Will Be Held On

TUESDAY, November 24, 2015

At

5:15 p.m.

In The

TRAINING ROOM

(2nd floor, Governmental Center)
400 Boardman Avenue

Traverse City Light and Power will provide necessary reasonable auxiliary aids and services, such as signers for the hearing impaired and audio tapes of printed materials being considered at the meeting, to individuals with disabilities at the meeting/hearing upon notice to Traverse City Light and Power. Individuals with disabilities requiring auxiliary aids or services should contact the Light and Power Department by writing or calling the following.

Stephanie Tvardek
Administrative Assistant
1131 Hastings Street
Traverse City, MI 49686
(231) 922-4940 ext. 201

Traverse City Light and Power
1131 Hastings Street
Traverse City, MI 49686
(231) 922-4940

Posting Date: 11-19-15
4:00 p.m.

AGENDA

Pledge of Allegiance

1. Roll Call

2. Consent Calendar

The purpose of the consent calendar is to expedite business by grouping non-controversial items together to be dealt with by one Board motion without discussion. Any member of the Board, staff or the public may ask that any item on the consent calendar be removed therefrom and placed elsewhere on the agenda for full discussion. Such requests will be automatically respected. If an item is not removed from the consent calendar, the action noted in parentheses on the agenda is approved by a single Board action adopting the consent calendar.

- a. Consideration of approving minutes of the Regular Meeting of November 10, 2015. (Approval recommended) (p. 3)
- b. Receive and file minutes of the Customer Survey Ad Hoc Committee Meeting of November 10, 2015. (Approval recommended) (p. 5)

Items Removed from the Consent Calendar

a.

3. Unfinished Business

None.

4. New Business

None.

5. Appointments

None.

6. Reports and Communications

- a. From Legal Counsel.
- b. From Staff.
 1. Introduction of new MPPA General Manager, Pat Bowland, and MPPA overview. (Arends/Pat Bowland) (p. 6)
 2. East Hammond Project recap. (Myers-Beman) (p. 27)
 3. ACEEE study results presentation. (Wheaton) (p. 32)
 4. NextEra Huron Wind Project. (Arends) (p. 39)

c. From Board.

7. Public Comment

/st

**TRAVERSE CITY
LIGHT AND POWER BOARD**

Minutes of Regular Meeting
Held at 5:15 p.m., Commission Chambers, Governmental Center
Tuesday, November 10, 2015

Board Members -

Present: Pat McGuire, Jeff Palisin, Amy Shamroe, Tim Werner, Jan Geht

Absent: Bob Spence, John Taylor

Ex Officio Member -

Present: Marty Colburn, City Manager

Others: W. Peter Doren, Scott Menhart, Karla Myers-Beman, Kelli Schroeder,
Stephanie Tvardek, Mark Watson, Jessica Wheaton, Blake Wilson

The meeting was called to order at 5:16 p.m. by Vice Chairman Geht.

Vice Chairman Geht welcomed Commissioners Amy Shamroe and Tim Werner to the TCL&P board.

Item 2 on the Agenda being Consent Calendar

None.

Item 3 on the Agenda being Unfinished Business

None.

Item 4 on the Agenda being New Business

a. Consideration of approving minutes of the Regular Meeting of October 13, 2015.

Moved by McGuire, seconded by Palisin, that the minutes of the Regular Meeting of October 13, 2015 be approved.

CARRIED unanimously. (Spence, Taylor absent)

Item 5 on the Agenda being Appointments

a. Consideration of appointments to the HR Ad Hoc Committee.

Moved by McGuire, seconded by Werner, that the HR Ad Hoc Committee be reestablished and Board Member Spence, Vice Chairman Geht and Chairman Taylor be appointed to the committee with Board Member Palisin serving as the alternate.

CARRIED unanimously. (Spence, Taylor absent)

Item 6 on the Agenda being Reports and Communications

a. From Legal Counsel.

- 1. W. Peter Doren reported on the Carson Square Apartments development.

b. From Staff.

- 1. Mark Beauchamp, Utility Financial Solutions, presented information regarding distributed generation, net metering and line extension policy.

The following individuals addressed the Board:

Karla Myers-Beman, Controller
 Marty Colburn, City Manager
 W. Peter Doren, General Counsel

- 2. Karla Myers-Beman provided an update on downtown Christmas lights.

The following individuals addressed the Board:

W. Peter Doren, General Counsel

- 3. Karla Myers-Beman provided an update on the Consulting Agreement with Cherryland Electric and the search for a Manager of Operations and Engineering.

The following individuals addressed the Board:

Marty Colburn, City Manager

c. From Board.

- 1. Pat McGuire welcomed Amy Shamroe and Tim Werner to the board.

Item 7 on the Agenda being Public Comment

Dan Worth, Groundwork Center for Resilient Communities, Non-Ratepayer
 Mary Van Valin, Ratepayer

There being no objection, Vice Chairman Geht declared the meeting adjourned at 6:51 p.m.

/st

Tim Arends, Secretary
 LIGHT AND POWER BOARD

**TRAVERSE CITY
LIGHT AND POWER BOARD**

Minutes
Customer Survey Ad Hoc Committee
Held at 12:00 p.m., Light and Power Service Center
Tuesday, November 10, 2015

Committee Members -

Present: Jan Geht, Pat McGuire, John Taylor

Others: Karla Myers-Beman, Kelli Schroeder

The meeting was called to order at 12:00 p.m. by Chairman Taylor.

1. Discussion of creating a Customer Survey.

Committee members discussed the creation of a Customer Survey with Cathlyn Sommerfield of CS Research & Consulting, LLC.

2. Public Comment

No one from the public commented.

There being no objection, Chairman Taylor declared the meeting adjourned at 1:06 p.m.

/st

John Taylor, Chairman
LIGHT AND POWER BOARD



TRAVERSE CITY
LIGHT & POWER

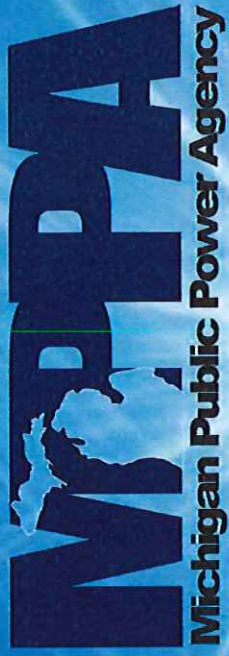
To: Light & Power Board
From: Tim Arends, Executive Director
Date: November 19, 2015
Subject: MPPA Presentation



At your meeting on Tuesday I will introduce the new Michigan Public Power Agency (MPPA) General Manager, Pat Bowland. Mr. Bowland comes to MPPA with a rich background in the electric industry with an emphasis in public power utilities.

In addition to Mr. Bowland's introduction, I felt it would be appropriate for meeting viewers and our new board members to learn more about TCL&P's affiliation with MPPA and all of the resources provided to the utility from this agency.

Attached is a brief presentation for your review.



Michigan Public Power Agency

Discussion Topics

- MPPA Overview
- Joint Action Principles
- Energy Services Project
- Systems Overview
- Market Tools
- Asset Management
- New Joint Action ideas
- MPPA Benefits

Michigan Public Power Agency

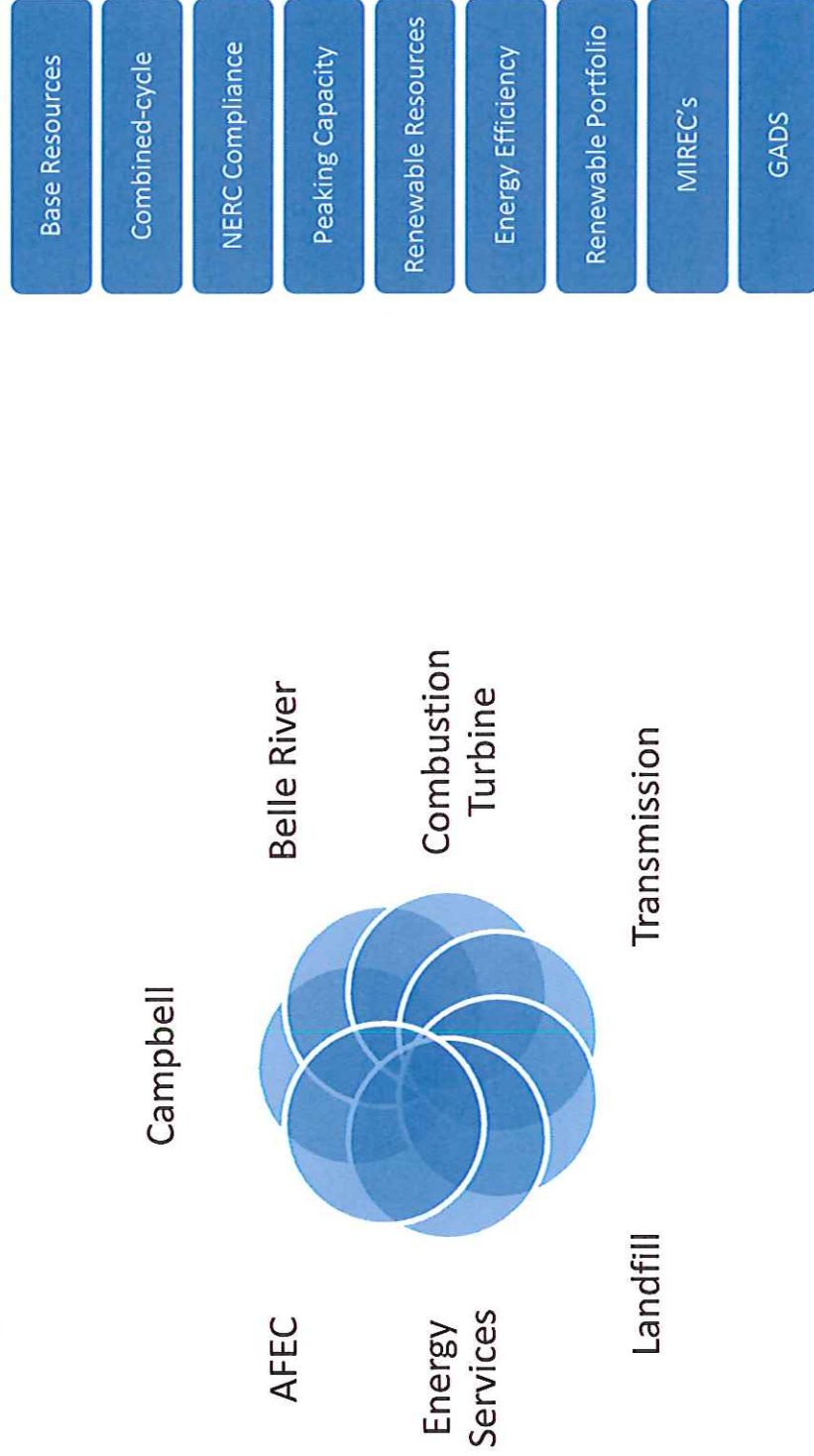


MPPA Project Based Agency

Project Based Agency means each Member chooses which Resources or Services it wants to participate in. Members get the benefits of independence while leveraging expertise, resource sharing and economies of scale.

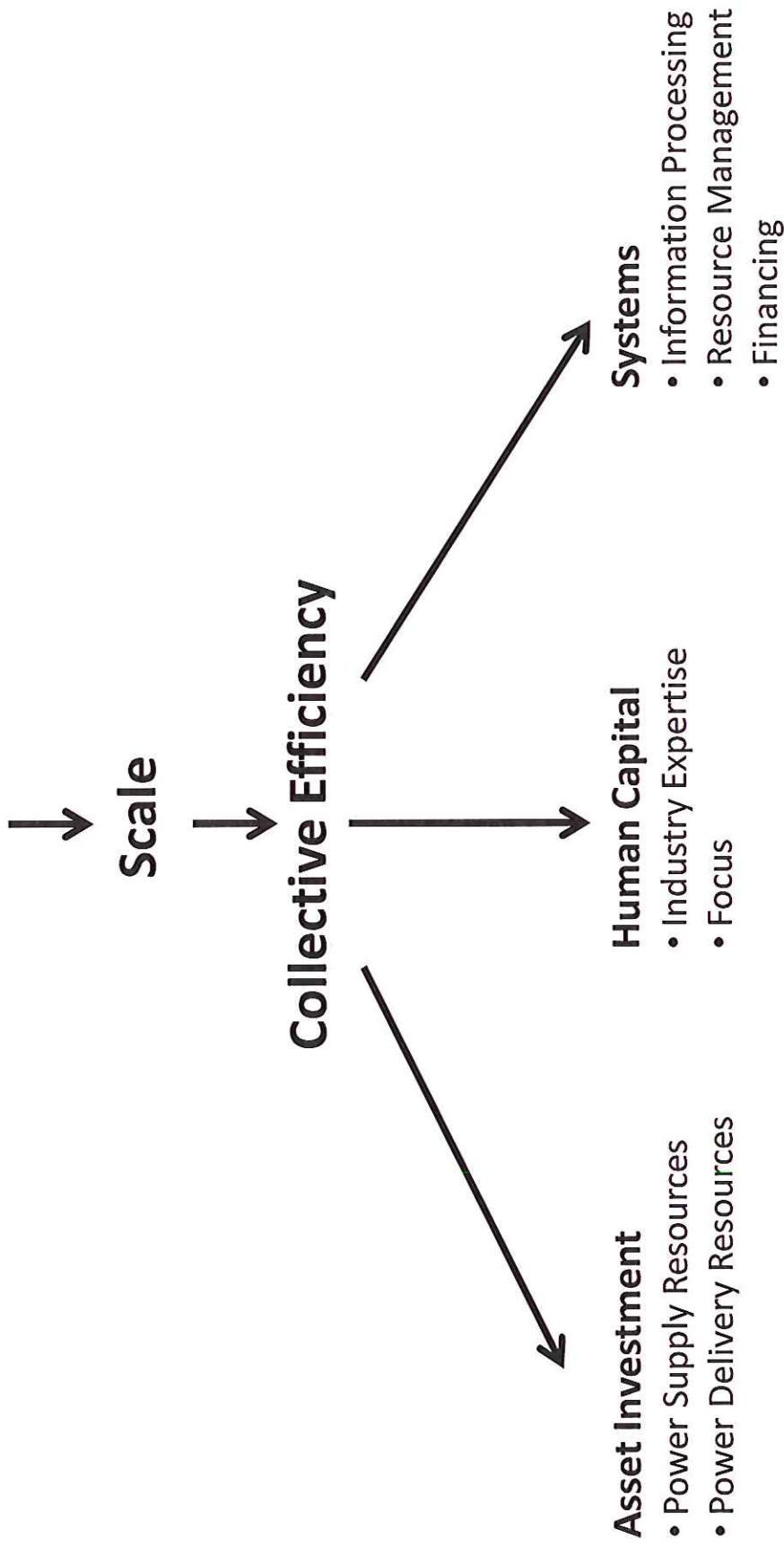
Project Committees

Service Committees

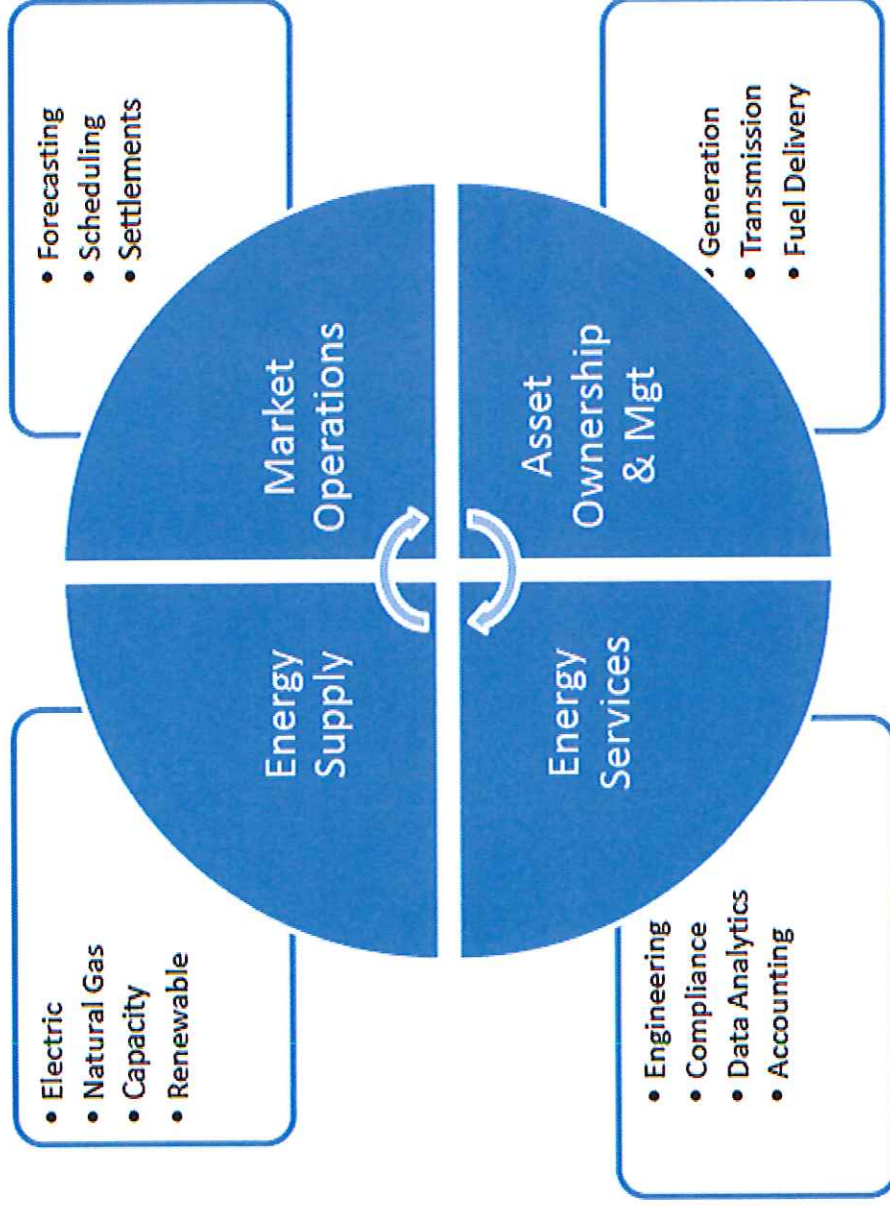


Joint Action Principles

Trust, Mutual Understanding and Shared Values

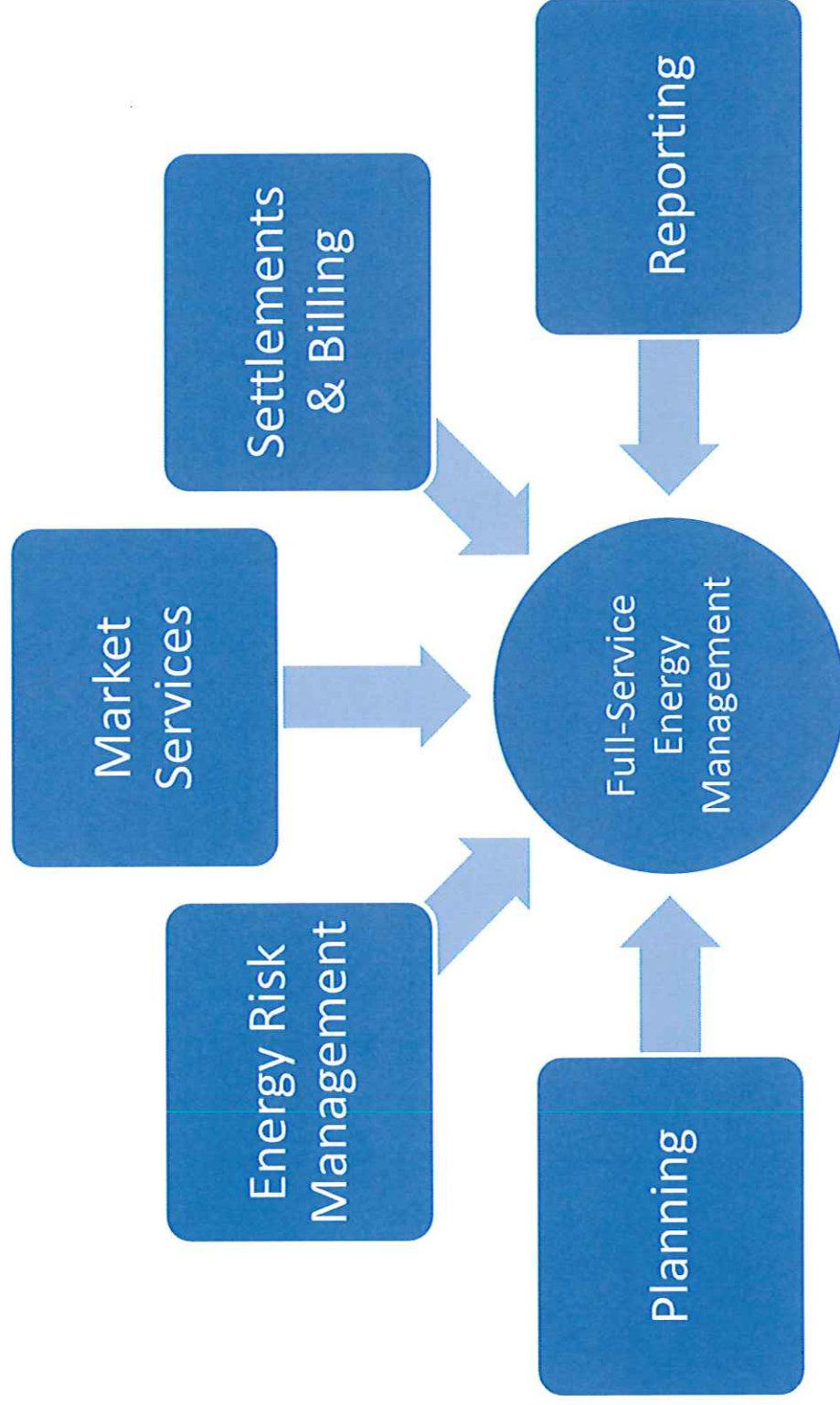


Organization Design



Great People & Systems

Energy Services Project (ESP)

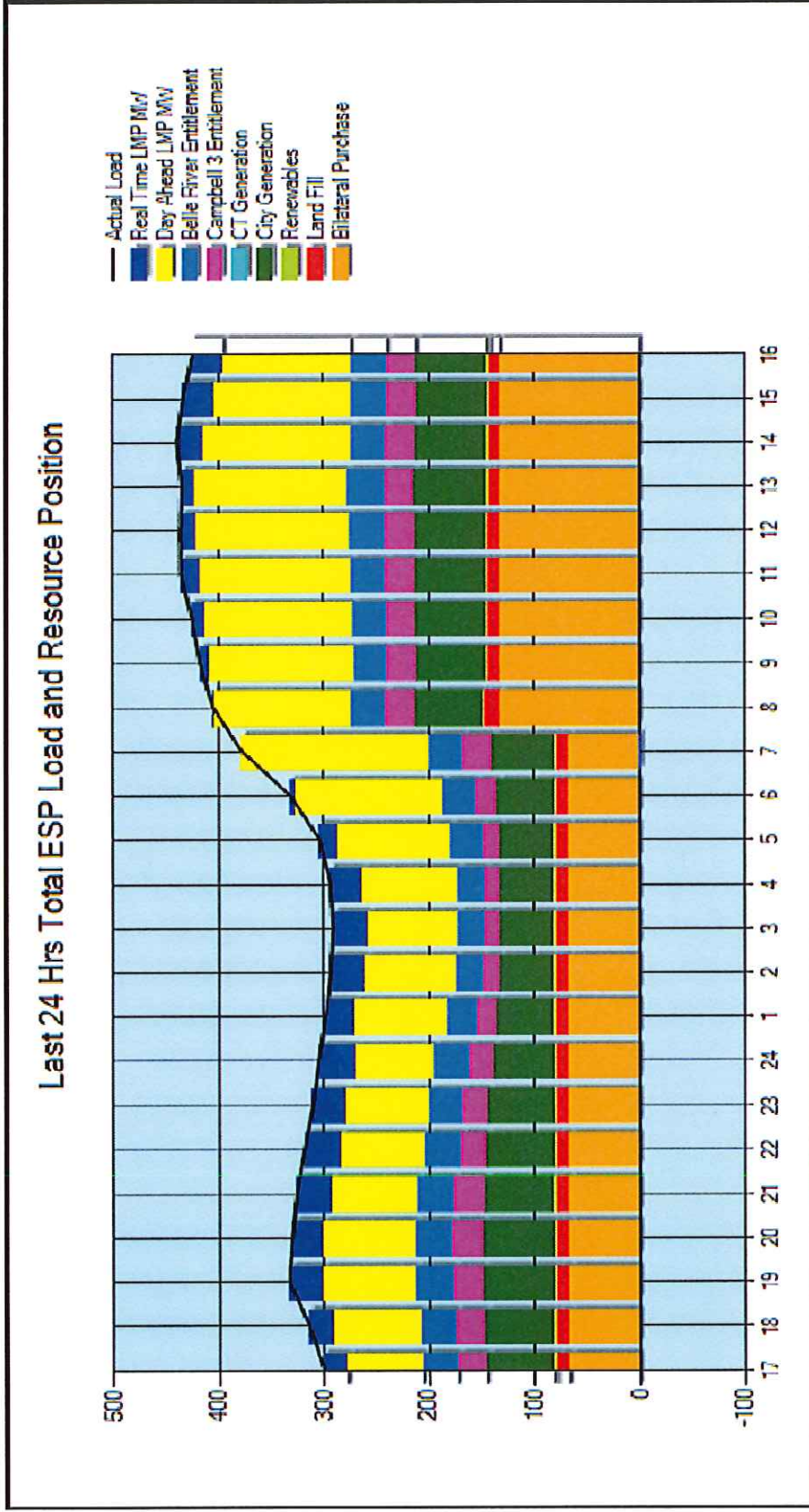


ESP - Planning

- Provide 15-year load forecast using approved methodologies
 - Provide review & recommendation of asset acquisition to meet long-term plans
- Provide multi-year and Annual Load Forecast for meeting Resource Adequacy Requirements
- Short-term forecasts for tightening of risk management plan to account for;
 - Weather or
 - Load Pattern changes

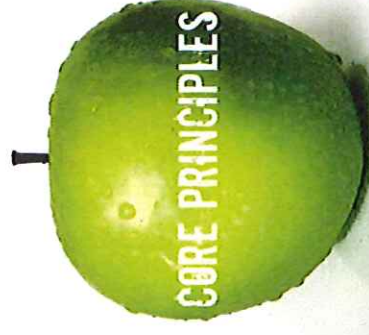


ESP – Resource Management



ESP - Energy Risk Management

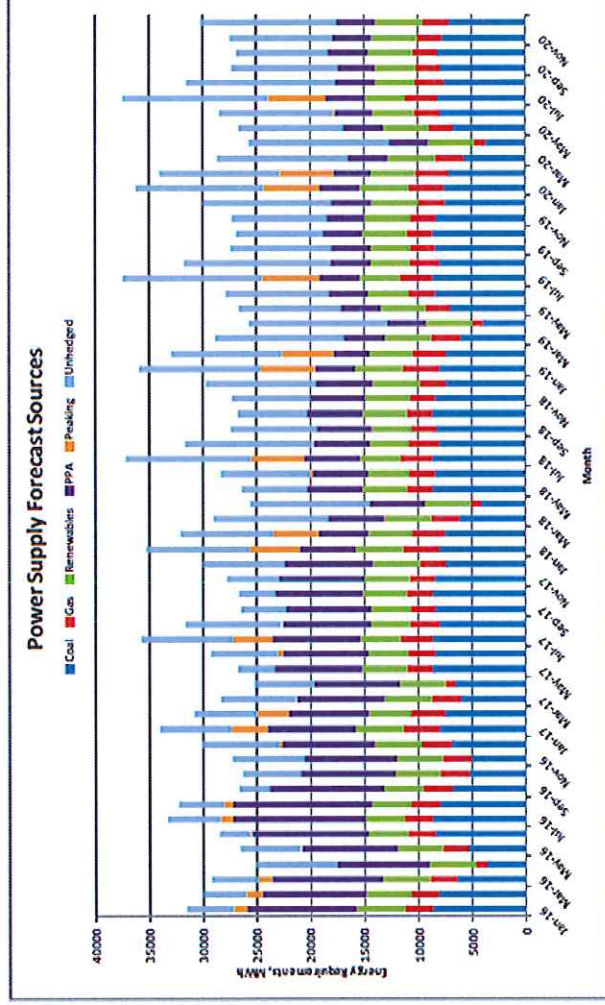
- Core economic principle pivots around a “**risk-based strategy**” that provides for a defined program to manage energy supply costs
 - Tailored to the individual Municipal Electric Utility
 - Implemented using the benefits of;
 - Aggregation
 - Diversity and
 - Market liquidity
 - Defensible – does not rely on a person or company’s view of the market
 - Layering –smooth price changes year to year



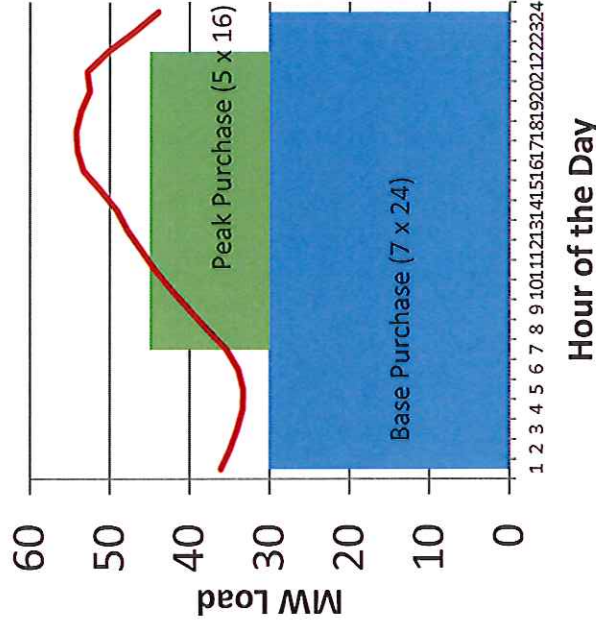
ESP - Energy Risk Management

- Provide detailed quarterly reports of supply and cost forecast with recommendations to limit market exposure
- Transactions executed are highly traded, standard block transactions.
- Execute transactions to meet supply targets that provide “cost-certainty”

Risk Policy & Hedge Plan Compliance



Load Profile for a typical day



ESP - Credit Risk Management

- MPPA has over a dozen active counterparties
- Actively manage and monitor credit exposure
- Contract Management
- Aggregate to scale



ESP – Market Operation Services

- All required reporting with MISO
- Day-Ahead planning
 - Load forecasting submittals
 - Scheduling power transactions
 - Scheduling transmission use
 - Aggregate energy needs of all members and schedule with MISO
- Transmission Optimization
 - PTP
 - GFA's
 - Network
- Real-Time execution
 - Generation dispatch
 - BTM
 - In front of the Meter

ESP - Settlements & Reporting

- Budget Variance Report
- Market Price Outlook
- Resource Specific Accounting
- Transmission Allocation
- RTO Market Settlements
- MPPA Member Invoicing

MISO Day Ahead / Real Time Market DART

[Previous](#) |
 [Today](#) |
 [Next Day](#)

Miso Day Ahead/Real Time Market

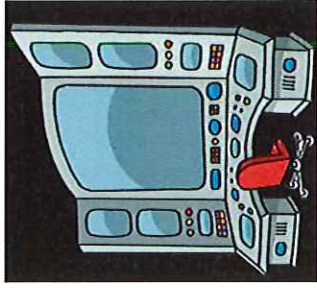
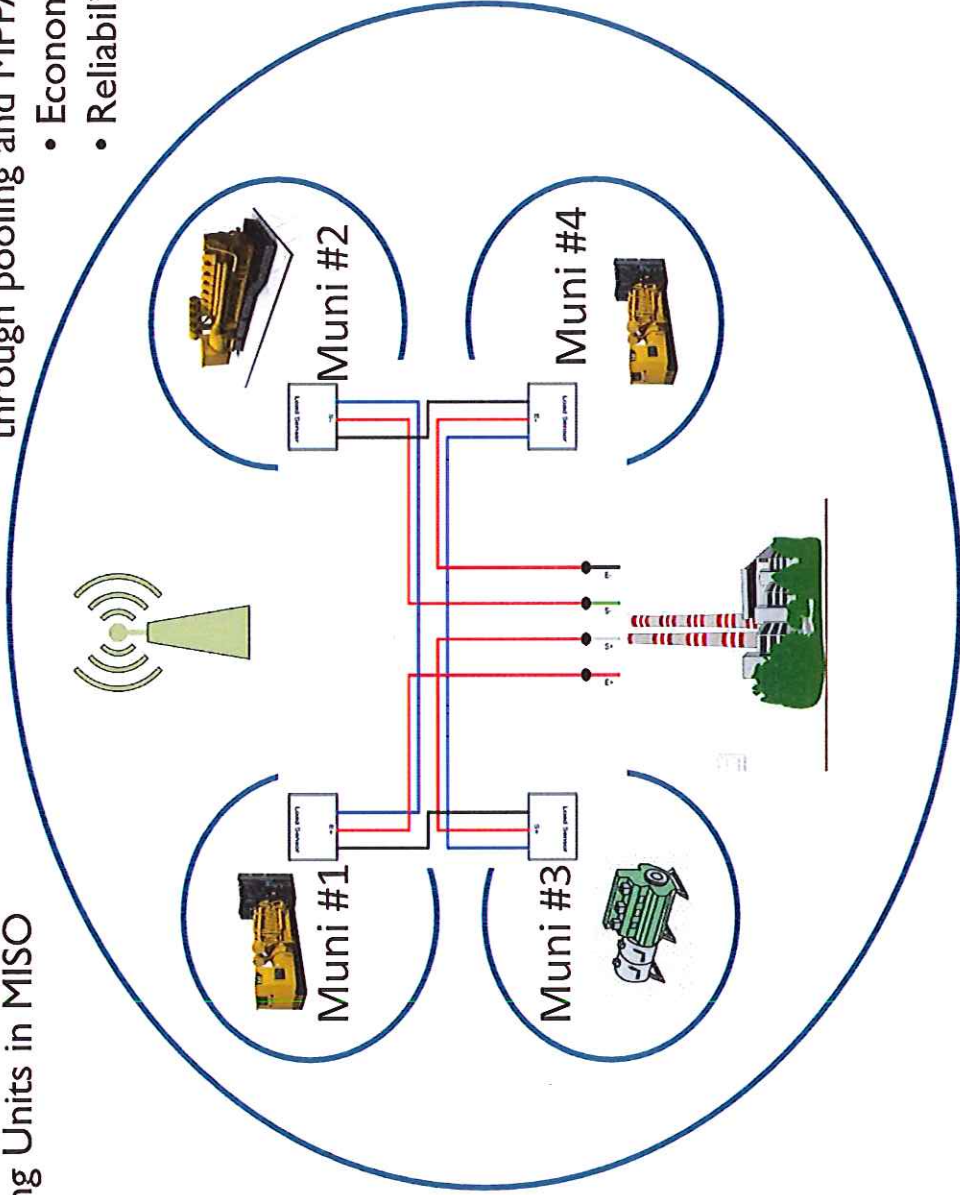
Date	Hour Ending	MPPA DA	MPPA RT	BLR1 DA	BLR1 RT	BLR#1 DA	BLR#1 RT	BLR2 DA	BLR2 RT	BLR#2 DA	BLR#2 RT	CAMP #3 DA	CAMP #3 RT	HOLL DA	HOLL RT	HOLL DA	HOLL RT	KALK DA	KALK RT	
11/19/2015	1	\$16.61	\$19.49	\$15.89	\$15.27	\$15.89	\$15.27	\$15.89	\$15.27	\$16.07	\$20.39	\$16.29	\$20.57	\$16.52	\$20.75					
11/19/2015	2	\$14.76	\$13.84	\$14.12	\$13.46	\$14.12	\$13.46	\$14.12	\$13.46	\$14.39	\$13.50	\$14.60	\$13.69	\$14.68	\$13.94					
11/19/2015	3	\$13.01	\$9.58	\$12.46	\$9.40	\$12.46	\$9.40	\$12.46	\$9.39	\$12.71	\$9.34	\$12.88	\$9.47	\$13.02	\$9.66					
11/19/2015	4	\$13.44	\$9.84	\$12.89	\$9.66	\$12.90	\$9.66	\$12.90	\$9.66	\$13.11	\$9.59	\$13.30	\$9.72	\$13.46	\$9.92					
11/19/2015	5	\$16.01	\$13.17	\$15.33	\$12.89	\$15.33	\$12.89	\$15.33	\$12.89	\$15.62	\$12.82	\$15.85	\$13.01	\$15.92	\$13.28					
11/19/2015	6	\$19.16	\$19.39	\$18.41	\$17.70	\$18.42	\$17.69	\$18.42	\$17.69	\$18.52	\$20.57	\$18.81	\$20.84	\$19.34	\$18.18					
11/19/2015	7	\$24.92	\$28.59	\$23.91	\$23.64	\$23.91	\$23.63	\$24.21	\$23.63	\$24.21	\$32.69	\$24.58	\$33.05	\$25.11	\$24.48					
11/19/2015	8	\$25.64	\$36.21	\$24.53	\$32.32	\$24.53	\$32.32	\$24.53	\$32.32	\$24.37	\$36.96	\$24.84	\$37.58	\$25.25	\$35.60					
11/19/2015	9	\$23.86		\$22.89		\$22.89		\$22.89		\$22.87		\$23.37		\$23.84						
11/19/2015	10	\$23.74		\$22.77		\$22.77		\$22.77		\$22.82		\$23.31		\$23.77						
11/19/2015	11	\$23.65		\$22.64		\$22.64		\$22.64		\$22.74		\$23.22		\$23.67						
11/19/2015	12	\$23.66		\$22.65		\$22.65		\$22.65		\$22.78		\$23.25		\$23.68						
11/19/2015	13	\$23.00		\$22.01		\$22.01		\$22.01		\$22.17		\$22.62		\$23.02						
11/19/2015	14	\$22.94		\$22.15		\$22.15		\$22.15		\$22.13		\$22.56		\$22.93						
11/19/2015	15	\$22.42		\$21.65		\$21.65		\$21.65		\$21.61		\$22.03		\$22.40						
11/19/2015	16	\$21.73		\$20.90		\$20.90		\$20.90		\$20.94		\$21.37		\$22.00						

Generator Asset Management Services

MPPA co-manages 50 Behind the Meter Generating Units in MISO

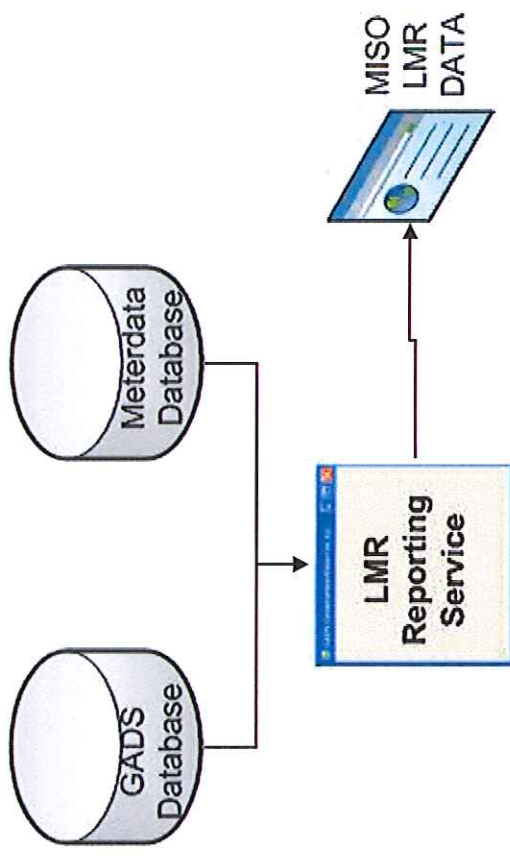
The management of these assets are optimized through pooling and MPPA market offer logic

- Economics
- Reliability



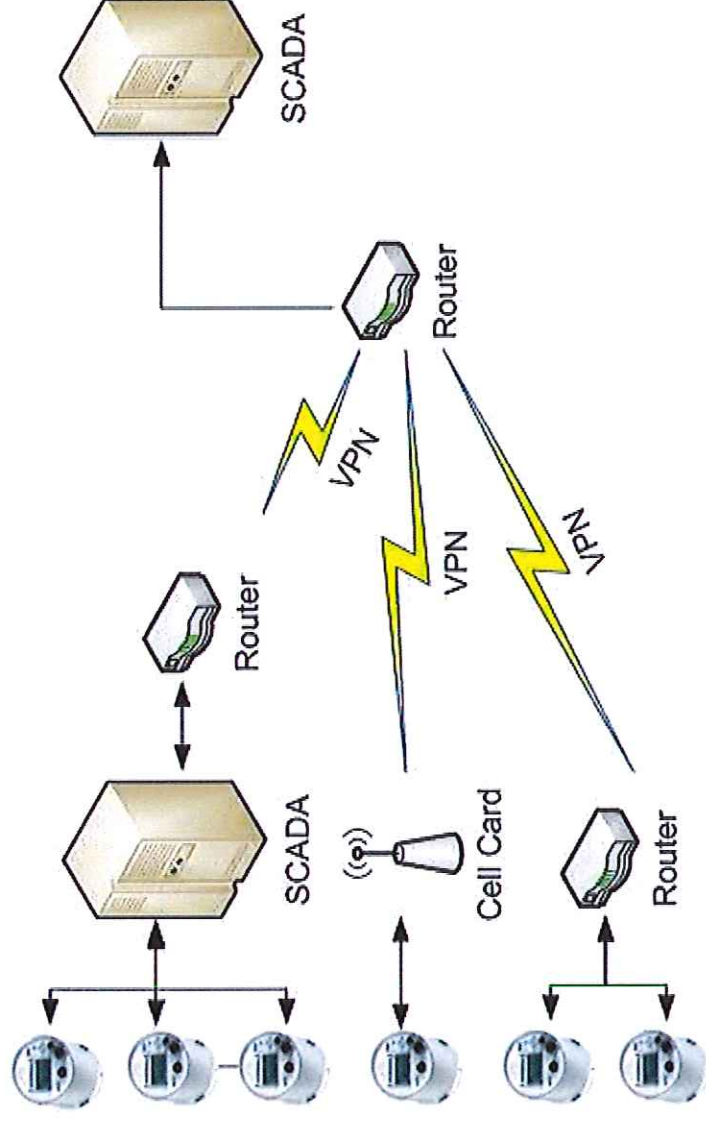
Generator Asset Management Services

- In addition to economics and operations MPPA performs;
 - GADS Reporting
 - Meter Data Processing
 - Resource Adequacy Compliance
 - Scheduling and Reporting
 - Settlements
 - Renewable Tracking / Compliance



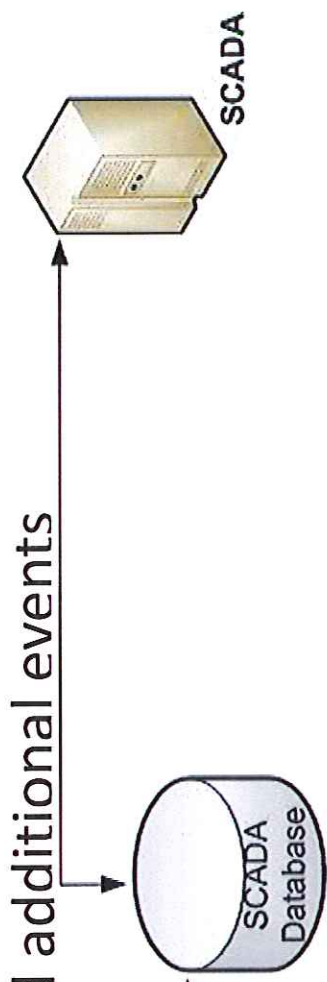
ESP – Systems Overview

- MPPA collects nearly all of our members meter data from their units with its SCADA system

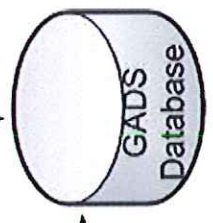


ESP – Systems Overview

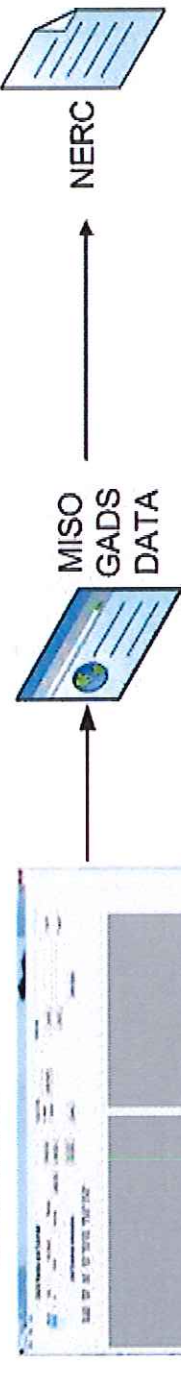
- Monitors generator activity and automatically updates internal GADS records
- Members correct or add additional events



- MPPA Staff reviews and verifies data, then submits to MISO
- MISO submits Data to NERC



GADS Review and Submission



Natural Gas Resource Service

“new ideas”

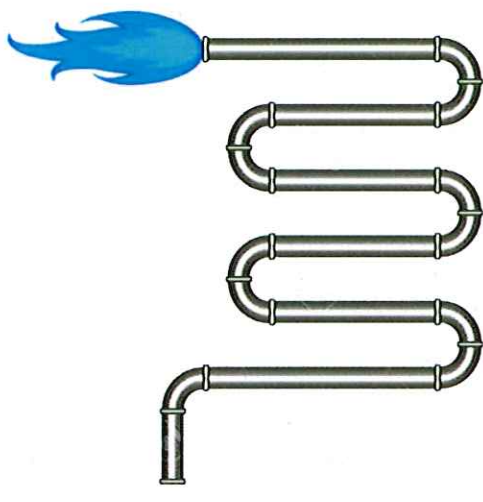
Perfect characteristics for “resource pooling” economics..Joint Action principles

Complement with bulk power services

Members duplicating services, paying consultants, etc.

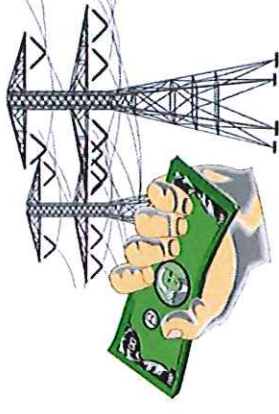
Growing importance to members

Market Area gas driving power pricing



MPPA Benefits

- **Energy Supply Price Risk Management and Procurement**
 - Defined & Defensible Strategy
 - Layered hedge plan to smooth out price drops or jumps
 - Eliminate single supplier business or financial risk
- **Efficient Investment Platform**
 - Aggregate & scale
 - Diversify
 - Finance
- **Expertise & Market Systems**
 - Manage Resources efficiently & effectively through pooling
 - Leverage sophisticated systems without direct ownership
 - Maintain cutting edge market knowledge to support utility decisions





TRAVERSE CITY
LIGHT & POWER

To: Light & Power Board
From: Karla Myers-Beman, TCLP Controller *KMB*
Date: November 18, 2015
Subject: East Hammond Project Recap

As requested by the Board, the following is a recap of the East Hammond Project, which includes construction of the East Hammond Substation, East Transmission Line (Parsons Substation to the substation's access drive approximately half mile south of Four Mile and Hammond Road) and the Parsons Transmission Line (along the Tart Trail from Parsons Substation to Airport Access Road).

Spreadsheets have also been included with this memorandum showing the budget authorized under the Project Authorization approved by the Board in March 2012 for the East Hammond Substation and East Hammond Transmission Line Project compared to actual, along with a budget to actual comparison of the GRP prepared budget for Parsons Transmission Line.

Staff has provided verbal updates on the East Hammond Substation at the November 27, 2012 board meeting and on the East Transmission line at the November 12, 2012 board meeting, respectively.

As shown on the following spreadsheets significant differences exist between budget and actual. The majority of the differences are because of the change in project scope brought to the Board for approval at the August 27, 2013 board meeting, which resulted in the approval of Amendment No. 2 Joint Use of Poles with Consumers Energy Company ("Consumers").

The project scope was originally approved with the transmission line connecting to an existing Consumers pole line down Four Mile Road to the railroad corridor, then constructing a new TCL&P owned pole line along the railroad corridor west into the Parsons Substation. The project scope was modified because it was discovered through the MDOT permitting process that the line had to be placed 45' from the railroad centerline; past experience has been that the line could be within 25' of the centerline. This change in requirements would have placed the line within the back lot of many homes and would have required extensive tree trimming/clearing. Considering the difficulty this would create for TCL&P in gaining easements, and the hardship of those property owners, TCL&P negotiated with Consumers to upgrade its existing transmission line through the area to accommodate TCL&P's needs, and TCL&P agreed to rebuild TCL&P's distribution line from Parsons Substation to Airport Access Road for increased reliability to Consumers customers. Additionally, with the Consumers contract, TCL&P engaged Kent Power, Inc in the amount of \$436K to hang conductor, perform

some distribution construction and construct the transmission line into the substation's access drive.

East Hammond Substation

Overall everything was near budget except for the construction contract and site work. These items went over budget \$556,586 and \$222,379, respectively. The cause of this construction contract overage is not clear because the engineering estimate was prepared by prior administration and overage on the site conditions was because of unforeseen soil conditions.

East Hammond Transmission Line

These costs changed from the original budget when the utility could not construct the line as intended because of the change in railroad right of way rules. The utility was significantly under budget in certain categories because of the change in scope when the utility changed from constructing its own line to collaborating with Consumers to utilize their existing transmission line down Four Mile Road. This collaboration and elimination of duplicate transmission lines within the community was documented through the Amendment No. 2 Joint Use of Poles with Consumers Energy. The utility did purchase their own conductor and required materials to hang the conductor and completed distribution work where needed.

Parsons Road Transmission Line

As part of the Amendment No. 2 Joint Use of Poles with Consumers, TCL&P agreed to construct the Parsons Transmission Line from Parsons Substation to Airport Access Road. This cost was fully reimbursed by Consumers except for the estimate reduction of only rehangng conductor versus installing new conductor, which was approximately \$14,500.

Traverse City Light and Power
 East Hammond Substation
 November 2015

	East Hammond Substation		
Category	Budget	Cash outlay	Over (Under) Budget
138kv Metering CT/PT	\$ 56,000.00	\$ 55,365.00	\$ (635.00)
Circuit Breakers	70,000.00	69,700.00	(300.00)
Circuit Switch	37,000.00	36,958.00	(42.00)
Construction Contract	200,000.00	756,586.46	556,586.46
Contingency	55,000.00	-	(55,000.00)
Engineering and Construction Management	228,000.00	259,626.21	31,626.21
Internal	-	38,090.59	38,090.59
Land	500,000.00	527,466.76	27,466.76
Legal	-	16,609.92	16,609.92
Materials	-	19,666.15	19,666.15
Miscellaneous	118,000.00	47,278.46	(70,721.54)
Relay/Control Panels	66,000.00	66,933.00	933.00
Site Work	250,000.00	472,379.16	222,379.16
SS Transformer	72,000.00	71,600.00	(400.00)
Survey, Environmental Borings	17,000.00	47,181.38	30,181.38
Transformers	1,525,000.00	1,524,566.00	(434.00)
Total	\$ 3,194,000.00	\$ 4,010,007.09	\$ 816,007.09

Traverse City Light and Power
 East Hammond Transmission Line
 November 2015

Category	East Hammond Transmission Line		
	Budget	Cash outlay	Over (Under) Budget
Construction Contract	\$ 843,000.00	\$ 436,091.19	\$ (406,908.81)
Contingency	188,000.00	-	(188,000.00)
Engineering and Construction Management	145,000.00	144,816.29	(183.71)
Internal	-	12,569.17	12,569.17
Land	-	2,861.00	2,861.00
Legal	-	4,007.35	4,007.35
Materials	970,000.00	335,597.46	(634,402.54)
Miscellaneous	-	4,377.38	4,377.38
Railroad Monitoring	65,000.00	-	(65,000.00)
Site Work	-	1,230.00	1,230.00
Survey, Environmental Borings	22,000.00	20,693.65	(1,306.35)
Consumers Energy Agreement	-	1,884,846.68	1,884,846.68
Property	-	600.00	600.00
Total	\$ 2,233,000.00	\$ 2,847,690.17	\$ 614,690.17

Traverse City Light and Power
 Parsons Road Transmission Line
 November 2015

Category	Parsons Road Transmission Line		
	Budget	Cash Outlay	Over (Under) Budget
Construction Contract	\$ 155,950.00	\$ 200,263.25	\$ 44,313.25
Contingency	48,000.00	-	(48,000.00)
Engineering and Construction Management	48,000.00	59,331.14	11,331.14
Materials	44,200.00	43,403.18	(796.82)
Poles	94,750.00	122,192.95	27,442.95
Wire	24,000.00	24,324.54	324.54
Total	\$ 414,900.00	\$ 449,515.06	\$ 34,615.06

Note

Note: \$435,202.31 was reimbursed by Consumers Energy through the Amended No. 2 Joint Poles Use Agreement.



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Jessica Wheaton, Manager of Energy Services & Key Accounts
Date: November 16, 2015
Subject: American Council for an Energy Efficient Economy Study

A handwritten signature in black ink, appearing to be "JW", is located to the right of the "From:" line.

In the fall of 2014 Traverse City Light & Power (TCL&P) was approached by the American Council for an Energy Efficient Economy (ACEEE), a non-profit organization that “acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors,” about participating in a national study which aimed to highlight strong energy efficiency programs implemented by municipal electric utilities. TCL&P decided to participate in the study, and contribute \$5,000 to the study’s research and development, as TCL&P saw the importance in benchmarking its efforts in energy efficiency against other leading utilities across the nation.

The purpose of the study, “Municipal Utility Energy Efficiency: Successful Examples Around the Nation,” was to document many examples of successful energy efficiency achievements from municipal utilities and to identify and discuss key motivating factors that cause a municipal utility to have a strong energy efficiency program.

Through industry suggestions, 23 municipal utilities were identified that had substantial energy efficiency achievements, with TCL&P being one of them. The selection was a convenience sample rather than anything statistically representative, but it was taken into account to include a wide range of municipal utility size and geographic location.

The group of 23 had an average annual energy efficiency spending of 2.44% of revenues and average annual electricity savings of 1% of sales. TCL&P’s 2014 spending on energy efficiency was 1.3% of revenues with electricity savings of 1% of sales.

During the initial survey and data gathering process, the municipal utilities shared feedback regarding what motivates the utility to offer strong energy efficiency programs. Utilities were asked to rate the importance of eight different factors regarding why each utility implements energy efficiency programs. The highest rated factor was that customers like energy efficiency program offerings and the lowest rated factors were CO2 reduction benefits and other environmental benefits achieved by energy efficiency programs. Municipal government policies were the second highest rated factor, followed closely by the economic cost savings to the utility and economic benefits to the community.

Those results were then supplemented with in-depth interviews with a subset of the sample group that explored the motivational factors further. The two key takeaways from the survey and in-depth interviews regarding what impacts successful implementation of energy efficiency programs are, 1) the municipal utility’s local governing board is critically important to affecting the level of effort,

both funding and staffing, that the utility devotes to energy efficiency, and 2) the extent of which the municipal utility truly regards energy efficiency as a real resource.

The most commonly mentioned hindering factor tended to be a concern over lost revenues when customers decrease their electricity use. According to the study, this concern seemed to be more philosophical than tangible.

The study's authors were satisfied with the results showcasing for the nation that there are strong energy efficiency programs being implemented by municipal utilities in the hopes of encouraging other public power utilities to increase their energy efficiency efforts.

The study's Executive Summary, Introduction, and Methodology are attached to this memo. To read the study in its entirety, see the ACEEE website at aceee.org.

Executive Summary

This report presents the results of a survey of municipal utilities with strong energy efficiency achievements. The intent of this project is to focus attention on a segment of the US utility industry that has been relatively underappreciated in the usual assessments of the recent utility energy efficiency advancements in the United States.

While the rapid growth in utility energy efficiency efforts and accomplishments over the past decade has been widely recognized and reported upon, most of that attention has been devoted to investor-owned utilities (IOUs). This is perhaps understandable given that IOUs account for such a large share of utility electricity sales, and the fact that they are state regulated may make it easier to access data for analysis and reporting purposes. Yet for the United States to achieve its economic and environmental objectives in the area of energy efficiency, public power utilities must be strong partners. Over a quarter of all customers and a quarter of all electric sales in the United States are from the public power sector.

The purpose of this project was twofold: (1) to document that there are many examples of municipal utilities with strong customer energy efficiency achievements; and (2) to identify and discuss the key factors that motivate and enable municipal utilities to have strong energy efficiency efforts and accomplishments.

Toward those ends, this project identified and surveyed a total of 23 municipal utilities with substantial energy efficiency achievements. Overall, this group had an average annual energy efficiency spending of 2.44% of revenues, and an average annual electricity savings of 1.0% of sales. While not intended to be a statistically representative sample (utilities were targeted based on the suggestions of industry experts for utilities with successful energy efficiency efforts), this group clearly demonstrates that substantial energy efficiency achievements are happening in this sector.

Moreover, nine of the highest-performing municipal utilities in our sample are individually profiled in Appendix A. For that group, the average annual spending on energy efficiency programs was 3.1% of revenues, and the average electricity savings was 1.4% of sales. That is competitive with many of the best-performing investor-owned utilities in the nation.

This study also gathered information on the major factors motivating municipal utilities to engage in substantial energy efficiency efforts. Aside from broad acknowledgement that their customers appreciate energy efficiency services, the highest-rated factors influencing utilities to provide strong energy efficiency programs tended to be the value of energy efficiency as a resource, the economic benefits to the local community, and whether their local governing board had a strong policy position on energy efficiency. The most inhibiting factor tended to be concern over revenue loss.

In summary, the intent of this report is to highlight the fact that there are many good examples of municipal utilities with strong energy efficiency accomplishments, and thereby enable and inspire additional public power utilities to increase their efforts in this area.

Introduction

Over the past decade, utility energy efficiency policies and programs in the United States have seen tremendous growth. During this time, much attention has been focused on investor-owned utilities, since they account for the majority of electricity sales in the nation and are regulated by state utility commissions. Investor-owned utilities have greatly expanded energy efficiency programs for their customers, and regulators and policymakers have worked to make the utility business model more favorable for the use of energy efficiency as a utility resource. Most states have adopted regulatory approaches to support investor-owned utilities' energy efficiency programs, such as full revenue decoupling and shareholder performance incentives.

However many of these approaches for investor-owned utilities are not necessarily suitable for public power utilities. Utilities in the public power sector have different economic structures, and in most states they are not regulated by the state in the same manner as investor-owned utilities. Yet for the United States to achieve its economic and environmental objectives in the area of energy efficiency, public power utilities must be strong partners. Over a quarter of all customers and a quarter of all electric sales in the United States are from the public power sector.¹ We believe that it is time to devote more attention to policies and programs tailored to the unique needs and structures of public power utilities. Toward that end, we focus this report on a key segment of the public power sector: municipal utilities.

With the above perspective in mind, in this report we

- Present the results of a survey of 23 leading municipal utilities from around the nation that have strong energy efficiency programs and accomplishments
- Identify and profile nine municipal utilities with exemplary energy efficiency efforts
- Discuss economic and other benefits from the use of energy efficiency as a resource to the customers and communities served by municipal utilities, including consideration of the proposed Clean Air Act section 111(d) requirements for carbon dioxide emissions reductions
- Discuss some of the unique economic and institutional challenges faced by municipal utilities with regard to providing energy efficiency programs, as well as successful strategies that have been adopted to overcome those challenges
- Identify key factors that may help facilitate strong energy efficiency efforts and accomplishments by municipal utilities

¹ This includes municipal, state, and federal public power utilities (approximately 15% of sales) and cooperatives (approximately 11% of sales) (EIA). According to the American Public Power Association (APPA), 73% of public power utilities offer energy efficiency and/or demand-side management programs to their customers (APPA).

Methodology

SAMPLE

The intent of this study is to examine public power utilities² with noteworthy energy efficiency activities and accomplishments. We began our research with 30 municipal utilities suggested to us by their peers and energy efficiency experts as leaders in customer energy efficiency programs. Three of the utilities stated that they were not interested in participating in the study. ACEEE eliminated an additional four utilities because they did not meet our electricity savings threshold for leadership in energy efficiency.³ As a result, our final sample was 23 municipal utilities, with the geographic distribution shown in figure 1.

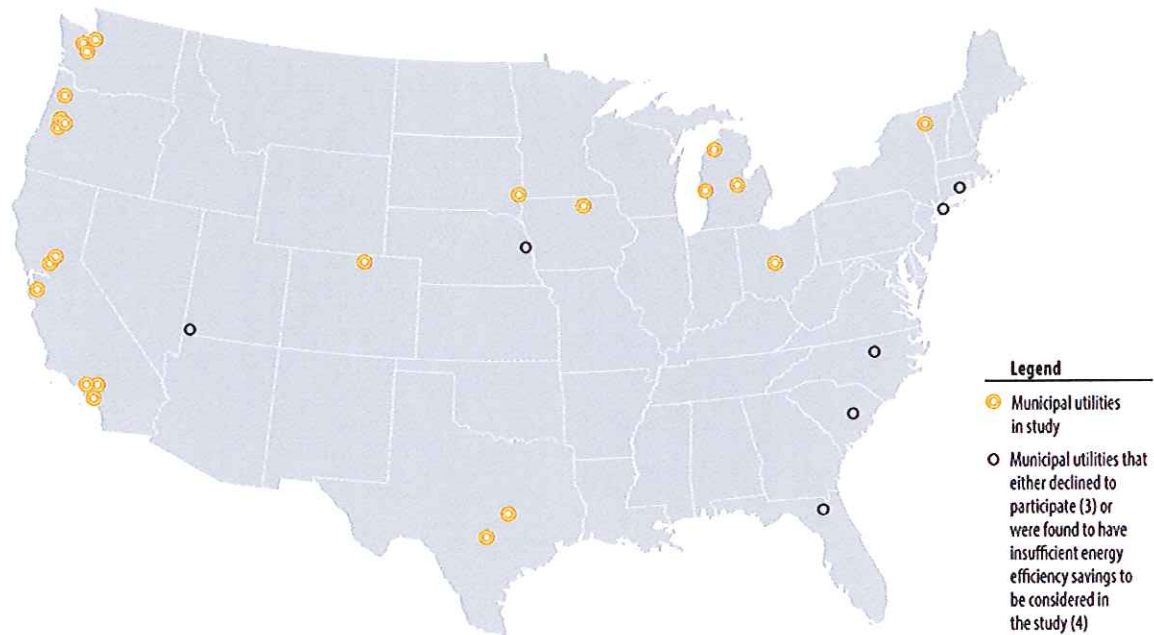


Figure 1. Geographic distribution of municipal utilities in the study

DATA COLLECTION

We used three methods to collect data for this study: (1) surveys, (2) utility reports, including energy efficiency annual reports and program evaluations, integrated resource plans, and utility annual reports, and (3) phone interviews.

² We studied municipal utilities and a public utility district. We did not attempt to focus on electric cooperatives. Snohomish Public Utility District wished to express that it is technically not a municipal utility but rather a public utility district that reports to an elected body and is separate from the county government. In addition, two of the entities, Missouri River Energy Services and American Municipal Power, represent groups of municipal utilities rather than being stand-alone utilities.

³ Utilities with annual energy efficiency program savings below 0.3% of sales were removed from the study.

A copy of the survey is presented in Appendix B. After a contact was identified at each utility, we emailed that contact a brief description of the study with the survey. We asked contacts to complete the survey and to return it within two weeks with copies of the latest examples of any of the following materials that were available: (1) the utility's annual energy efficiency report, (2) its energy efficiency program evaluation, (3) an integrated resource plan, and (4) the utility's annual report. Twenty-seven utilities completed the project survey (although four were eliminated due to insufficient energy efficiency savings to be included in the study).

SURVEY

The survey provided information regarding the municipal utilities including (1) state policies or regulatory requirements for energy efficiency programs, (2) municipal government and/or municipal utility governing board policy requirements for energy efficiency programs, (3) factors influencing municipal utilities to provide strong programs, (4) the longevity of the utility's energy efficiency program, (5) energy efficiency program spending as a percentage of total annual revenues, (6) energy efficiency annual kWh savings as a percentage of total annual kWh sales, and (7) whether the utility believed it would spend more, less, or about the same on 2015 energy efficiency programs as in 2014.

We used survey data to provide a general overview of the regulatory and governmental energy efficiency policies of the utilities, review factors the utilities feel have or have not contributed to their successful energy efficiency programs, and describe the utilities in terms of longevity of energy efficiency programs, annual energy efficiency spending, and annual energy efficiency savings. The data were described through simple frequency distributions and data averages.

UTILITY REPORTS

Along with the survey data, we used information from the utility reports to create profiles of nine leading examples from our group of municipal utilities with successful energy efficiency programs (see Appendix A).⁴ Examples of the type of information extracted from the utility reports include (1) descriptions of the utility (e.g., number of customers and generation and distribution assets), (2) a basic understanding of how energy efficiency contributes to the utility's fuel mix, (3) a description of the utility's energy efficiency program portfolio, (4) the utility's level of commitment to energy efficiency, and (5) the reasons for providing energy efficiency services to customers.

INTERVIEWS

In addition to the written surveys, we interviewed senior management at eight municipal utilities that were among the leaders in energy efficiency accomplishments in our sample. These utilities are profiled in Appendix A, along with a ninth utility with which we were unable to schedule an interview. The purpose of these interviews was to obtain a more in-

⁴ Criteria for selection for profiles included above average electricity savings performance, geographic diversity, and willingness to provide supplemental information.

depth view of the factors that influence municipal utilities in their decision making regarding energy efficiency efforts.



**TRAVERSE CITY
LIGHT & POWER**

To: Light & Power Board
From: Tim Arends, Executive Director
Date: November 13, 2015
Subject: NextEra Huron Wind Project



Background:

The Michigan Public Power Agency (MPPA) is negotiating with NextEra for the purchase of 50MW of output from a new wind project. The project would be a firm priced power purchase agreement (PPA) with a starting price of \$38.25/MWh with a fixed 2% per year escalation. The location of the project is in the “thumb” area of Michigan. It is anticipated the PPA with MPPA will be completed by the end of the year. MPPA has requested any interested members make a firm commitment before the end of the year.

MPPA staff has provided an analysis of the expected cost/benefits of the project. As requested by TCL&P, RTD Consulting, LLC has been retained to assist TCL&P in the evaluation. If the project moves forward and MPPA executes a PPA with NextEra, the next step would be for the joining municipalities to develop agreements with MPPA for the purchase of this energy.

Discussion:

A review of the model and other project information was conducted. A list of questions from this review was developed and discussed with MPPA staff. Based on this review and responses from the staff the following is the results of this independent review:

1. Need for Additional Renewable Energy Credits (REC): Given the current level of renewable energy under contract to TCL&P it is reasonable to look into securing additional renewable resources with attention being paid to the projected economics and potential for an increase in the REC’s requirements. Based on the current energy forecast and level of REC’s under contract and the current requirement level, TCL&P meets its requirements until the expiration of the Heritage contract (2030). See Table 1 below. However, should the requirement be increased to 15%, TCL&P will be substantially short in REC’s.
2. Economic Analysis: The economic evaluation provided by MPPA shows the cost of the project over the 20 year life of the PPA. This projection is less than the expected cost of energy from the Midwest Independent System Operator (MISO), provided REC’s and Capacity Credits are as forecasted. While the analysis is reasonable it may be somewhat optimistic. In discussions with MPPA staff, they acknowledge this issue but as there is not

available data that can be used to directly calculate the actual output from the proposed project, they used a proxy of the Beebe project. Also used is a “multiplier” that allows for a comparison of MISO rates and the cost of the project. This multiplier allows sensitivity analyses to gauge the financial risk of the project.

3. Capacity Cost and REC’s Value: Forecast for Capacity Credits and REC’s are reasonable based upon current market data. In the model used by MPPA they used a constant value for each parameter over the life of the project. In reality, these parameters will vary annually as the market changes. Over a 20 year period it is reasonable that the annual average will be consistent with the values used by MPPA.
4. Local Marginal Pricing (LMP) Forecast: The LMP is the cost wind energy system avoids. If its cost is lower than the wind energy system that raises TCL&P’s cost and vice versa. Given the cost of the wind project is fixed with a constant annual inflation factor there is a risk that the cost could grow faster than the LMP from MISO. While this is a risk, it is unlikely. Most experts do not believe that natural gas prices can go lower than what is currently being experienced. Likewise, with the federal government goal to reduce CO2 emissions, the use of coal is expected to be reduced significantly in MISO over the next 20 years. This will increase the use of natural gas. This increase will likely occur as gas demand nationally is expected to increase. Most current projection show the price of energy in MISO increasing as natural gas prices rise.

Recommendation:

This project should be pursued with MPPA at the level proposed by MPPA (3.32MW). This amount could be increase to 6MW if needed if the economic parameters remain as stated. The potential for an increase in REC’s is reasonable given the current level of discussion within the State of Michigan. The cost of this project appears to be at a level that will not raise the average cost of purchased power to TCL&P. It also adds another tier of REC’s with a different expiration date than existing REC’s. However, this alone will not be sufficient to meet a 15% REC’s requirement. Therefore, additional REC’s will need to be pursued. Table 1 shows the effects of this addition with the 10% and 15% REC’s requirements. The recommendation to proceed should be followed with caution until MPPA has a final contract and all of the operating and financial parameters are known.

FOR THE LIGHT & POWER BOARD MEETING OF NOVEMBER 24, 2015

Table 1

	Energy Requirements Note 1	MPPA Renewables Note 2	Heritage	NextEra Project	Total Renewables Mwh	REC Target @10%	% Over/Under Target	REC Target @15%	% Over/Under Target
2016	336,166	12616	26280		38896	33,617	15.7%	50,425	-22.9%
2017	336,908	12616	26280	8725	47621	33,691	41.3%	50,536	-5.8%
2018	337,951	12616	26280	8725	47621	33,795	40.9%	50,693	-6.1%
2019	339,218	12616	26280	8725	47621	33,922	40.4%	50,883	-6.4%
2020	340,646	12616	26280	8725	47621	34,065	39.8%	51,097	-6.8%
2021	342,189	12616	26280	8725	47621	34,219	39.2%	51,328	-7.2%
2022	343,822	12616	26280	8725	47621	34,382	38.5%	51,573	-7.7%
2023	345,529	12616	26280	8725	47621	34,553	37.8%	51,829	-8.1%
2024	347,305	12616	26280	8725	47621	34,731	37.1%	52,096	-8.6%
2025	349,138	12616	26280	8725	47621	34,914	36.4%	52,371	-9.1%
2026	351,028	12616	26280	8725	47621	35,103	35.7%	52,654	-9.6%
2027	352,964	12616	26280	8725	47621	35,296	34.9%	52,945	-10.1%
2028	354,942	12616	26280	8725	47621	35,494	34.2%	53,241	-10.6%
2029	356,964	12616	26280	8725	47621	35,696	33.4%	53,545	-11.1%
2030	359,014	12616	26280	8725	47621	35,901	32.6%	53,852	-11.6%
2031	360,757	12616		8725	21341	36,076	-40.8%	54,114	-60.6%
2032	362,509	12616		8725	21341	36,251	-41.1%	54,376	-60.8%
2033	364,268	12616		8725	21341	36,427	-41.4%	54,640	-60.9%
2034	366,037	12616		8725	21341	36,604	-41.7%	54,906	-61.1%
2035	367,814	12616		8725	21341	36,781	-42.0%	55,172	-61.3%
2036	369,600	12616		10167	22783	36,960	-38.4%	55,440	-58.9%
Notes:									
1)	Energy forecast is the MISO energy forecast prepared by MPPA in Oct 2015. The years 2031-2036 are extended using average growth over the 2015-2030 period.								
2)	This includes the addition of 1.2MW in 2016. (TCL&P's 8% of 1.2Mw @85% CF).								

Update:

1. Discussions with MPPA staff, as of November 9, 2015, indicate that NextEra has slowed the project down. They have indicated that the project commitment needs to be increased to a total 150MW before they will be able to proceed.
2. NextEra has also stated they will need to have federal legislation that preserves the Production Tax Credits in order to hold the price commitment that has been offered.
3. NextEra is looking for additional commitments before they finalize a contract with MPPA.
4. If they do not get additional commitments for additional output, or the Production Tax Credits are not extended, the project would have to be repriced to proceed.