

**A REGULAR MEETING**

Of The

**TRAVERSE CITY LIGHT AND POWER BOARD**

Will Be Held On

**TUESDAY, April 22, 2014**

At

**5:15 p.m.**

In The

**COMMISSION CHAMBERS**  
(2<sup>nd</sup> 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) 932-4543

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

Posting Date: 4-17-14  
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.*

None.

#### **3. Unfinished Business**

None.

#### **4. New Business**

- a. Consideration of approving minutes of the Regular Meeting of April 8, 2014. (p. 4)
- b. Consideration of authorizing a purchase order to Power Line Supply in the amount of \$227,540.03 for conduit and electrical materials for South Substation Project. (Olney) (p.8)
- c. Consideration of authorizing a purchase order to Power Line Supply in the amount of \$571,779 for underground cable for South Substation Project. (Olney) (p. 10)
- d. Consideration of authorizing a purchase order to Harlo in the amount of \$96,930 for control panels for South Substation Project. (Olney) (p. 12)
- e. Consideration of awarding bid for conduit and equipment box pad installation for South Substation Project. (Arends/GRP Engineering) (p. 14)
- f. Consideration of awarding bid for electric cable and equipment installation for South Substation Project. (Arends/GRP Engineering) (p. 17)
- g. Consideration of awarding bid for a construction contract for South Substation Project. (Arends/GRP Engineering) (p. 20)

#### **5. Appointments**

None.

#### **6. Reports and Communications**

- a. From Legal Counsel.

1. Coal Dock Deed restrictions discussion. (Doren) (verbal)
- b. From Staff.
1. Energy Supply Presentation #5. (RTD Consulting) (p. 23)
  2. TCL&P Annual Seedling Giveaway. (Wheaton) (verbal)
- c. From Board.
1. Executive Director Review Process. (Taylor/H.R. Committee) (verbal)

**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, April 8, 2014

**Board Members -**

Present: Barbara Budros, Jim Carruthers, Jeff Palisin, Bob Spence, John Taylor,  
Patrick McGuire

Absent: Jan Geht

**Ex Officio Member -**

Present: Jered Ottenwess, City Manager

**Others:** Tim Arends, W. Peter Doren, Scott Menhart, Tom Olney, Stephanie  
Tvardek, Jessica Wheaton, Blake Wilson

The meeting was called to order at 5:15 p.m. by Secretary Tim Arends.

Secretary Tim Arends opened the floor to nominations for Chairperson of the Light and Power Board:

McGuire nominated John Taylor, Budros seconded.

Tim Arends closed the floor to nominations.

CARRIED unanimously. (Geht absent)

Tim Arends turned the meeting over to Chairman Taylor.

Chairman Taylor recognized Pat McGuire for his service as Chairman of the Light and Power Board.

Chairman Taylor opened the floor to nominations for Vice Chairperson of the Light and Power Board:

McGuire nominated Jan Geht, Budros seconded.

Chairman Taylor closed the floor to nominations.

CARRIED unanimously. (Geht absent)

Chairman Taylor recommended Tim Arends be appointed the Secretary for the Light and Power Board. Budros moved and Palisin seconded the appointment of Tim Arends as Secretary of the Board.

CARRIED unanimously. (Geht absent)

Chairman Taylor recommended the current members of the Human Resources Ad Hoc Committee Commissioner Budros, Bob Spence and Chairman Taylor, be reappointed.

Carruthers moved and Budros seconded the reappointment of the Human Resources Ad Hoc Committee.

CARRIED unanimously. (Geht absent)

**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**

4(a). Consideration of approving minutes of the Regular Meeting of March 25, 2014.

Moved by Carruthers, seconded by McGuire, that the Board approves the minutes of the Regular Meeting of March 25, 2014.

CARRIED unanimously. (Geht absent)

4(b). Consideration of authorizing a Joint WiFi Services Agreement.

The following individuals addressed the Board:

Tim Arends, Executive Director  
W. Peter Doren, General Counsel

Moved by McGuire, seconded by Budros, that the Board authorizes the Chairman and Secretary to enter into a Joint Wi-Fi Services Agreement with the DDA, subject to approval as to substance by the Executive Director and as to form by General Counsel; and further contingent upon the city commission's approval of the 2014-15 Capital Plan.

CARRIED unanimously. (Geht absent)

4(c). Consideration of adopting a Resolution Declaring the Coal Dock Property Surplus and Conveying to the City of Traverse City.

The following individuals addressed the Board:

Tim Arends, Executive Director  
W. Peter Doren, General Counsel  
Jered Ottenwess, City Manager

Moved by McGuire, seconded by Budros, to adopt the Traverse City Light and Power Department Resolution Certifying Coal Dock to be surplus for operation of the Traverse City Light and Power Department and to further authorize the Executive Director to sign all necessary documents.

The following individuals from the public addressed the Board:

Mike Wills, 110 Fairway Hills Drive, Ratepayer

Jay Ruzak, 1994 Carroll Road, President, Maritime Heritage Alliance  
Mayor Michael Estes, Ratepayer  
Jack Kelly, 10090 East Lincoln Road, Non-Ratepayer, Elmwood Township Supervisor  
George Pruitt, 8336 South Lake View Road, Non-Ratepayer  
Cindy Ruzak, 1994 Carroll Road  
John Noonan, 908 South Union Street, Ratepayer  
Martha Belfour 635 North Stoney Point Road, Non-Ratepayer  
Rob Lovell, 536 North Elmwood, Ratepayer

Voice Vote:

Yes – Budros, Carruthers, McGuire, Palisin, Taylor

No – Spence

CARRIED. (Geht Absent)

**4(d). Consideration of Pole Inspection/Foreign Attachment Audit.**

The following individuals addressed the Board:

Tim Arends, Executive Director

Blake Wilson, System Engineer

Moved by Palisin, seconded by Spence, that the Board authorize a Service Order for pole inspection services with American Energy Services, Inc.

CARRIED unanimously. (Geht absent)

**Item 5 on the Agenda being Appointments**

None.

**Item 6 on the Agenda being Reports and Communications**

A. From Legal Counsel,

None.

B. From Staff.

1. Tom Olney presented TCL&P's Storm Restoration Manual.

The following individuals addressed the Board:

Tim Arends, Executive Director

C. From Board.

None.

**Item 7 on the Agenda being Public Comment**

No one from the public commented.

There being no objection, Chairman Taylor declared the meeting adjourned at 7:05 p.m.

/st

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Tim Arends, Secretary  
LIGHT AND POWER BOARD



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**To:** Light & Power Board  
**From:** Tim Arends, Executive Director  
**Date:** April 16, 2014  
**Subject:** South Substation – Materials

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Bids have been obtained for the purchase of materials for the South Substation project. Bids were as follows:

<u>Manufacturer</u>	<u>Total Price</u>
Power Line Supply	\$227,540.03
RESCO	\$170,137.19 ( <i>not all items bid</i> )

GRP Engineering, Inc. will be available at the meeting to discuss the bidding process and how the lowest bid compared to the original project budget estimate. Staff recommends accepting the bid from Power Line Supply in the amount of \$227,540.03 as the low bidder did not include all items quoted.

If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

**MOVED BY \_\_\_\_\_, SECONDED BY \_\_\_\_\_,**

**THAT THE BOARD AUTHORIZE THE EXECUTIVE DIRECTOR TO ISSUE A PURCHASE ORDER IN THE AMOUNT OF \$227,540.03 TO POWER LINE SUPPLY FOR MATERIALS FOR THE SOUTH SUBSTATION PROJECT.**



April 2, 2014  
12-0463.01

Mr. Tom Olney  
Traverse City Light & Power  
1131 Hastings Street  
Traverse City, MI 49686

**RE: South Substation Distribution Circuits  
Material Bid Evaluation & Recommendation**

Dear Tom:

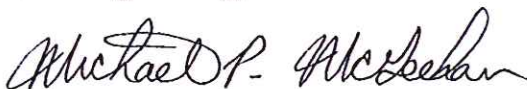
GRP Engineering, Inc. has completed our evaluation of the material quotes for the South Substation Distribution Circuits project. Material lists were separated into conduit and electrical material to align with the labor construction contracts. Of the three material vendors invited to bid, two responded with quotations. Power Line Supply (PLS) supplied two complete quotations covering all 258 items and RESCO only bid certain items.

<u>Vendor</u>	<u>Conduit</u>	<u>Electrical</u>
Power Line Supply	\$60,098.38	\$167,441.65
RESCO	\$21,507.30	\$148,629.89 <i>(Not all items quoted.)</i>

A comparison of the items quoted by both vendors shows PLS quote was 2% lower for the conduit material and 8% lower on the electrical material. Power Line Supply's individual prices were lower on the majority of material.

GRP Engineering, Inc. recommends that TCL&P accept both quotations from Power Line Supply. Please contact me should you have any additional questions regarding this evaluation and recommendation.

Sincerely,  
**GRP Engineering, Inc.**




Michael P. McGeehan, P.E.  
Project Manager

cc: Traverse City Light & Power  
Mr. Tim Arends



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**To:** Light & Power Board  
**From:** Tim Arends, Executive Director   
**Date:** April 16, 2014  
**Subject:** South Substation – Underground Cable

---

Bids have been obtained for the purchase of underground cable for the South Substation project. Bids were as follows:

<u>Manufacturer</u>	<u>Total Price</u>
HD Supply	\$573,885.00
Power Line Supply	\$571,779.00
RESCO	\$702,000.00

GRP Engineering, Inc. will be available at the meeting to discuss the bidding process and how the lowest bid compared to the original project budget estimate. Because the cable is a commodity, the actual price may be more or less than the bid amount. Staff recommends accepting the low bid from Power Line Supply in the amount of \$571,779.00, more or less.

If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

**MOVED BY \_\_\_\_\_, SECONDED BY \_\_\_\_\_,**

**THAT THE BOARD AUTHORIZE THE EXECUTIVE DIRECTOR TO ISSUE A PURCHASE ORDER IN THE AMOUNT OF \$571,779, MORE OR LESS, TO POWERLINE SUPPLY FOR UNDERGROUND CABLE FOR THE SOUTH SUBSTATION PROJECT.**

March 19, 2014  
12-0463.01

Mr. Tom Olney  
Traverse City Light & Power  
1131 Hastings Street  
Traverse City, MI 49686

**RE: South Substation Distribution Circuits  
Underground Cable Bid Evaluation & Recommendation**

Dear Tom:

GRP Engineering, Inc. has completed our evaluation of the medium voltage underground cable quotes for the South Substation Distribution Circuits project. Three material vendors provided quotes for the 35,100' of cable required for this project. Power Line Supply (PLS) & HD Supply quoted Okonite cable. RESCO quoted Kerite cable. Quotations were requested to be submitted with a CU metals base price of \$3.35 per pound to insure evaluation of quotes on the same base.

<u>Vendor</u>	<u>Cost / ft</u>	<u>Total Cost</u>
HD Supply	\$16.35	\$573,885.00
Power Line Supply	\$16.29	\$571,779.00
RESCO	\$20.00	\$702,000.00

All cost estimates for this project were based on \$15.50 per foot cable price, 5% lower than the quoted price. Reminder that the actual cable cost will be adjusted higher or lower based on the price of CU on the day of shipment. For reference, the cost of copper at the time of the writing of this recommendation is \$2.998 per pound which is 12% lower than the amount the evaluation was complete on.

GRP Engineering, Inc. recommends that TCL&P accept the quote from Power Line Supply. Please contact me should you have any additional questions regarding this evaluation and recommendation.

Sincerely,  
GRP Engineering, Inc.




Michael P. McGechan, P.E.  
Project Manager

cc: Traverse City Light & Power  
Mr. Tim Arends



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**To:** Light & Power Board  
**From:** Tim Arends, Executive Director   
**Date:** April 16, 2014  
**Subject:** South Substation – Control Panel

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Bids have been obtained for the purchase of a control panel for the South Substation project. Bids were as follows:

<u>Manufacturer</u>	<u>Total Price</u>
EP <sup>2</sup>	\$105,421.00
Harlo	\$ 96,930.00

GRP Engineering, Inc. will be available at the meeting to discuss the bidding process and how the lowest bid compared to the original project budget estimate. Staff recommends accepting the low bid from Harlo in the amount of \$96,930.

If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

**MOVED BY \_\_\_\_\_, SECONDED BY \_\_\_\_\_,**

**THAT THE BOARD AUTHORIZE THE EXECUTIVE DIRECTOR TO ISSUE A PURCHASE ORDER IN THE AMOUNT OF \$96,930 TO HARLO FOR THE CONTROL PANEL FOR THE SOUTH SUBSTATION PROJECT.**

April 16, 2014  
12-0462.01

Mr. Tom Olney  
Traverse City Light & Power  
1131 Hastings Street  
Traverse City, MI 49686

**RE: South Substation  
Control Panel Evaluation & Recommendation**

Dear Tom:

GRP Engineering, Inc. has completed our evaluation of the control panel bids for the South Substation project. Only two bids were received for the control panels on this project. Harlo Corporation supplied the lowest bid in the amount of \$93,930.00.

	<u>Vendor</u>	<u>Bid Price</u>
	EP <sup>2</sup>	\$105,421.00
	Harlo	\$96,930.00

GRP Engineering, Inc. recommends that TCL&P accept the control panel bid from Harlo. Please contact me should you have any additional questions regarding this evaluation and recommendation.

Sincerely,  
GRP Engineering, Inc.



Michael P. McGeehan, P.E.  
Project Manager

cc: Traverse City Light & Power  
Mr. Tim Arends  
GRP Engineering, Inc.  
Mr. Rob Shelley



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**To:** Light & Power Board  
**From:** Tim Arends, Executive Director   
**Date:** April 16, 2014  
**Subject:** South Substation – Conduit & Equipment Box Pad Installation

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Bids have been obtained for the conduit and equipment box pad installation for the South Distribution Substation. The bid tabulation sheet is attached for your review.

GRP Engineering, Inc. has advised staff that the low bidder is acceptable and has the ability and resources to complete the project. GRP will be available at the meeting to discuss the bidding process and how the lowest bid compared to the original project budget estimate. Staff recommends accepting the low bid from Severence Electric Company, Inc. in the amount of \$216,915.00.

If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

**MOVED BY \_\_\_\_\_, SECONDED BY \_\_\_\_\_,**

**THAT THE BOARD AUTHORIZES THE EXECUTIVE DIRECTOR TO EXECUTIVE A CONSTRUCTION AGREEMENT IN THE AMOUNT OF \$216,915 WITH SEVERENCE ELECTRIC COMPANY FOR INSTALLATION OF CONDUIT AND EQUIPMENT BOX PAD FOR THE SOUTH DISTRIBUTION SUBSTATION; SUBJECT TO APPROVAL AS TO FORM BY GENERAL COUNSEL.**

April 16, 2014  
12-0463.01

Mr. Tom Olney  
Traverse City Light & Power  
1131 Hastings Street  
Traverse City, MI 49686

**RE: South Substation Distribution Circuits  
Conduit & Equipment Box Pad Installation  
Bid Evaluation & Recommendation**

Dear Tom:

GRP Engineering, Inc. has completed reviewing the bids submitted on April 15, 2014 for the Conduit & Equipment Box Pad Installation portion of the South Substation Distribution Circuits project. Of the seven contractors solicited for bids, three (3) bids were received and only two were conforming to the bid documents. Severence Electric Company, Inc. submitted the low bid for the project in the amount of \$216,915.00. A complete bid tabulation is attached to this letter.

Severence Electric Company, Inc. has submitted a complete and conforming bid. GRP Engineering, Inc. sees no reason not to accept their bid in the full amount for this project.

Please contact me should you have any questions regarding this evaluation.

Sincerely,  
**GRP Engineering, Inc.**



Michael P. McGeehan, P.E.  
Project Manager

cc: Traverse City Light & Power  
Mr. Tim Arends

# BID TABULATION

**OWNER:**  
**TRAVERSE CITY LIGHT & POWER**  
 1131 HASTINGS STREET  
 TRAVERSE CITY, MI 49686

**SOUTH SUBSTATION DISTRIBUTION CIRCUITS  
 CONDUIT INSTALLATION**

**ENGINEER:**  
**GRP ENGINEERING, INC.**  
 459 BAY STREET  
 PETOSKEY, MI 49770

BIDDERS	BID SECURITY	TOTAL CONTRACTOR BASE BID PRICE	REMARKS
<b>Elmer's</b> 3600 Rennie School Rd Traverse City, MI 49696	10% Bond	\$304,411.50	
<b>Freedom Utility Placement</b> 9430 N. Twin Lake Rd NE Mancelona, MI 49659			No Bid
<b>Matts Underground</b> 1328 Wood Rd Kalkaska, MI 49646			No Bid
<b>Molon Excavating</b> 125 Buck Shot Dr. Traverse City, MI 49685			No Bid
<b>Roemer Utility Service</b> P.O. Box 124 Boyne City, MI 49712			No Bid
<b>Roose Contracting</b> 2674 S. Huron Rd Kawkawlin, MI 48631			No Bid
<b>Severence Electric</b> 7076 E. N Avenue Kalamazoo, MI 49048	10% Bond	\$216,915.00	
<b>Todd's Welding Service</b> 8604 US131 Kalkaska, MI 49646	10% Check	\$353,604.43	Low Bid

This is to certify that at 2:00p.m., local time on Tuesday, April 15, 2014, the bids tabulated herein were publicly opened and read.

**GRP Engineering, Inc.**




By: \_\_\_\_\_  
 Michael P. McGeehan, P.E.





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**To:** Light & Power Board  
**From:** Tim Arends, Executive Director   
**Date:** April 16, 2014  
**Subject:** South Substation – Electric Cable & Equipment Installation

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Bids have been obtained for the electric cable and equipment installation for the South Distribution Substation. The bid tabulation sheet is attached for your review.

GRP Engineering, Inc. has advised staff that the low bidder is acceptable and has the ability and resources to complete the project. GRP will be available at the meeting to discuss the bidding process and how the lowest bid compared to the original project budget estimate. Staff recommends accepting the low bid from CC Power in the amount of \$383,545.25.

If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

**MOVED BY \_\_\_\_\_, SECONDED BY \_\_\_\_\_,**

**THAT THE BOARD AUTHORIZES THE EXECUTIVE DIRECTOR TO EXECUTIVE A CONSTRUCTION AGREEMENT IN THE AMOUNT OF \$383,545.25 WITH CC POWER FOR ELECTRIC CABLE AND EQUIPMENT INSTALLATION FOR THE SOUTH DISTRIBUTION SUBSTATION; SUBJECT TO APPROVAL AS TO FORM BY GENERAL COUNSEL.**

April 16, 2014  
12-0463.01

Mr. Tom Olney  
Traverse City Light & Power  
1131 Hastings Street  
Traverse City, MI 49686

**RE: South Substation Distribution Circuits  
Electrical Cable & Equipment Installation  
Bid Evaluation & Recommendation**

Dear Tom:

GRP Engineering, Inc. has completed reviewing the bids submitted on April 15, 2014 for the Electrical Cable & Equipment Installation portion of the South Substation Distribution Circuits project. Of the four contractors solicited for bids, two (2) bids were received. CC Power, LLC submitted the low bid for the project in the amount of \$383,545.25. A complete bid tabulation is attached to this letter.

CC Power, LLC has submitted a complete and conforming bid. GRP Engineering, Inc. sees no reason not to accept their bid in the full amount for this project.

Please contact me should you have any questions regarding this evaluation.

Sincerely,  
**GRP Engineering, Inc.**



Michael P. McGeehan, P.E.  
Project Manager

cc: Traverse City Light & Power  
Mr. Tim Arends

# BID TABULATION

**OWNER:**  
**TRAVERSE CITY LIGHT & POWER**  
 1131 HASTINGS STREET  
 TRAVERSE CITY, MI 49686

**SOUTH SUBSTATION DISTRIBUTION CIRCUITS  
 ELECTRICAL CABLE & EQUIPMENT INSTALLATION**

**ENGINEER:**  
**GRP ENGINEERING, INC.**  
 459 BAY STREET  
 PETOSKEY, MI 49770

BIDDERS	BID SECURITY	TOTAL CONTRACTOR BASE BID PRICE	REMARKS
CC Power P.O. Box 2028 Kalkaska, MI 49646	10% Bond	\$383,545.25	Low Bid
The Hydaker-Wheatlake Company 420 N. Roth Street Reed City, MI 49677			No Bid
Kent Power 90 Spring St Kent City, MI 49330	10% Bond	\$580,827.80	
Newkirk Electric, Inc. 1875 Roberts Street Muskegon, MI 49442			No Bid


This is to certify that at 2:00p.m., local time on Tuesday, April 15, 2014, the bids tabulated herein were publicly opened and read.

**GRP Engineering, Inc.**

By: *Michael P. McGeehan*  
 Michael P. McGeehan, P.E.



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**To:** Light & Power Board  
**From:** Tim Arends, Executive Director   
**Date:** April 16, 2014  
**Subject:** South Substation – Construction Contract

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Bids have been obtained for the construction of the South Distribution Substation. The bid tabulation sheet is attached for your review.

GRP Engineering, Inc. has advised staff that the low bidder is acceptable and has the ability and resources to complete the project. GRP will be available at the meeting to discuss the bidding process and how the lowest bid compared to the original project budget estimate. Staff recommends accepting the low bid from Kent Power in the amount of \$1,304,760.

If after Board discussion you agree with staff's recommendation the following motion would be appropriate:

**MOVED BY \_\_\_\_\_, SECONDED BY \_\_\_\_\_,**

**THAT THE BOARD AUTHORIZES THE EXECUTIVE DIRECTOR TO EXECUTIVE A CONSTRUCTION AGREEMENT IN THE AMOUNT OF \$1,304,760 WITH KENT POWER FOR CONSTRUCTION OF THE SOUTH DISTRIBUTION SUBSTATION; SUBJECT TO APPROVAL AS TO FORM BY GENERAL COUNSEL.**

April 16, 2014  
12-0463.01

Mr. Tom Olney  
Traverse City Light & Power  
1131 Hastings Street  
Traverse City, MI 49686

**RE: South Substation Construction  
Bid Evaluation & Recommendation**

Dear Tom:

GRP Engineering, Inc. has completed reviewing the bids submitted on April 15, 2014 for construction of the South Substation. Of the four contractors solicited for bids, four (4) bids were received. Kent Power, Inc. submitted the low bid for the project in the amount of \$1,304,760.00. A complete bid tabulation is attached to this letter.

Kent Power, Inc. has submitted a complete and conforming bid. GRP Engineering, Inc. sees no reason not to accept their bid in the full amount for this project.

Please contact me should you have any questions regarding this evaluation.

Sincerely,  
GRP Engineering, Inc.



Michael P. McGeehan, P.E.  
Project Manager

cc: Traverse City Light & Power  
Mr. Tim Arends

# BID TABULATION

**OWNER:**  
**TRAVERSE CITY LIGHT & POWER**  
 1131 HASTINGS STREET  
 TRAVERSE CITY, MI 49686

**SOUTH SUBSTATION**

**ENGINEER:**  
**GRP ENGINEERING, INC.**  
 459 BAY STREET  
 PETOSKEY, MI 49770

BIDDERS	BID SECURITY	TOTAL CONTRACTOR BASE BID PRICE	REMARKS
The Hydaker-Wheatlake Company 420 N. Roth Street Reed City, MI 49677	10% Bond	\$1,379,416.00	
Kent Power 90 Spring St Kent City, MI 49330	10% Bond	\$1,304,760.00	Low Bid
Newkirk Electric, Inc. 1875 Roberts Street Muskegon, MI 49442	10% Bond	\$1,394,007.00	
Rauhorm Electric, Inc. 17171 23 Mile Rd. Macomb, MI 48042	10% Bond	\$1,531,809.00	

This is to certify that at 2:00p.m., local time on Tuesday, April 15, 2014, the bids tabulated herein were publicly opened and read.

**GRP Engineering, Inc.**

By:   
 Michael P. McGeehan, P.E.

Howard J. Axelrod, PhD  
1820 Peachtree RD NW  
Unit 601  
Atlanta, GA 30309



Howard J. Axelrod has more than 40 years of experience in management consulting, strategic planning and marketing for the electric and gas industry. He is founder of Energy Strategies, Inc. and serves as the firm's President and Chief Executive Officer. He is also the acting Chief Risk Officer for a New England based municipal wholesale electric company. With proficiencies in economics, marketing, and power systems planning, he provides a multi-disciplinary approach to resolving complex business and regulatory issues. He has performed numerous studies and led in the development of strategies addressing such issues as competitive restructuring, strategic business and market planning, organizational development, and business risk analysis.

Howard has also managed best practice assessments relating to strategic and business planning, utility outage preparedness and enterprise risk management. He has testified before numerous state regulatory agencies and FERC on such topics as resource planning, power contract management, utility operations and management and productivity.

Howard has also been actively involved in the development and continuous improvement of competitive wholesale electric markets. He has been retained by the New York Independent System Operator and has participated in market development activities at the ISO-NE, PJM, MISO and CAISO.

Howard had served as the Executive Director of CCAS (Coalition for the Commercial Application of Superconductors) a technology-based trade organization.

Howard was awarded his Doctorate in Managerial Economics from Rensselaer Polytechnic Institute, an MBA from SUNY Albany and MSEE and BSEE degrees in Power Systems from Northeastern University. He also completed General Electric's 3-year Application Engineering Training Program. Howard has over 25 publication and presentation citations and has testified in over 40 regulatory proceedings.

His professional associations include Senior Membership in the Institute of Electrical and Electronic Engineering, Senior Membership in the Power and Energy Society, Member of the Profession Risk Managers Association and Professional Engineer (retired license in New York).

# Topic 6: The Generation Planning Process

April 22, 2014

Howard Axelrod, PhD  
RTD Consulting, LLC  
2771 Monument Rd.  
Suite 29, Box 337  
Jacksonville, FL 32225





# What is generation planning?

- A process to identify long term strategies to meet the energy needs of Traverse City's electrical customers.
- Conceptually, the generation plan will address:
  - Least costs solutions
  - Fuel diversity
  - Environmental stewardship
  - System reliability
  - Load and energy forecasts
  - Public policy
  - Uncertainty

# **Generation Planning by any other name:**

- Long range generation planning
- Generation optimization
- Least cost planning
- Integrated resource planning
- Generation Portfolio Analysis

**But let's not forget that "planning" is forecasting which can also be called:**

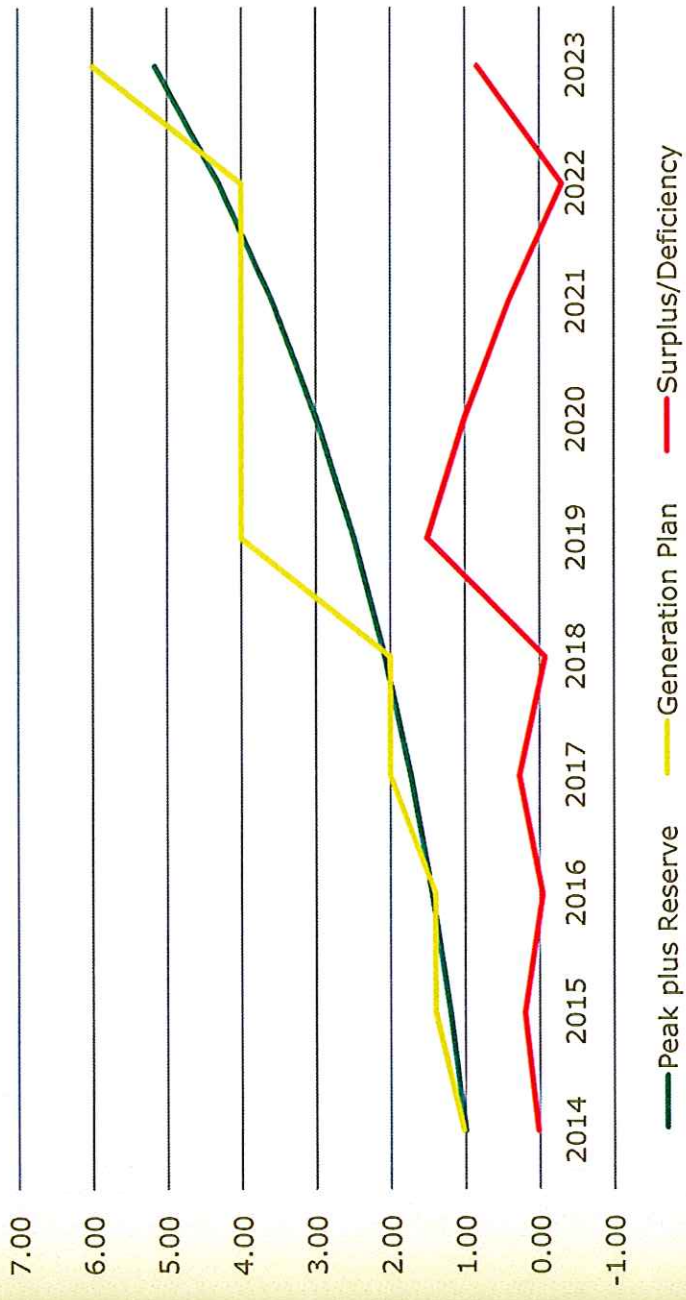
- Prognostication
- Predicting
- Conjecturing
- Guessing
- Fortune Telling
- Soothsaying

## **Generation Planning really needs to be a process that recognizes the vagaries of forecasting by:**

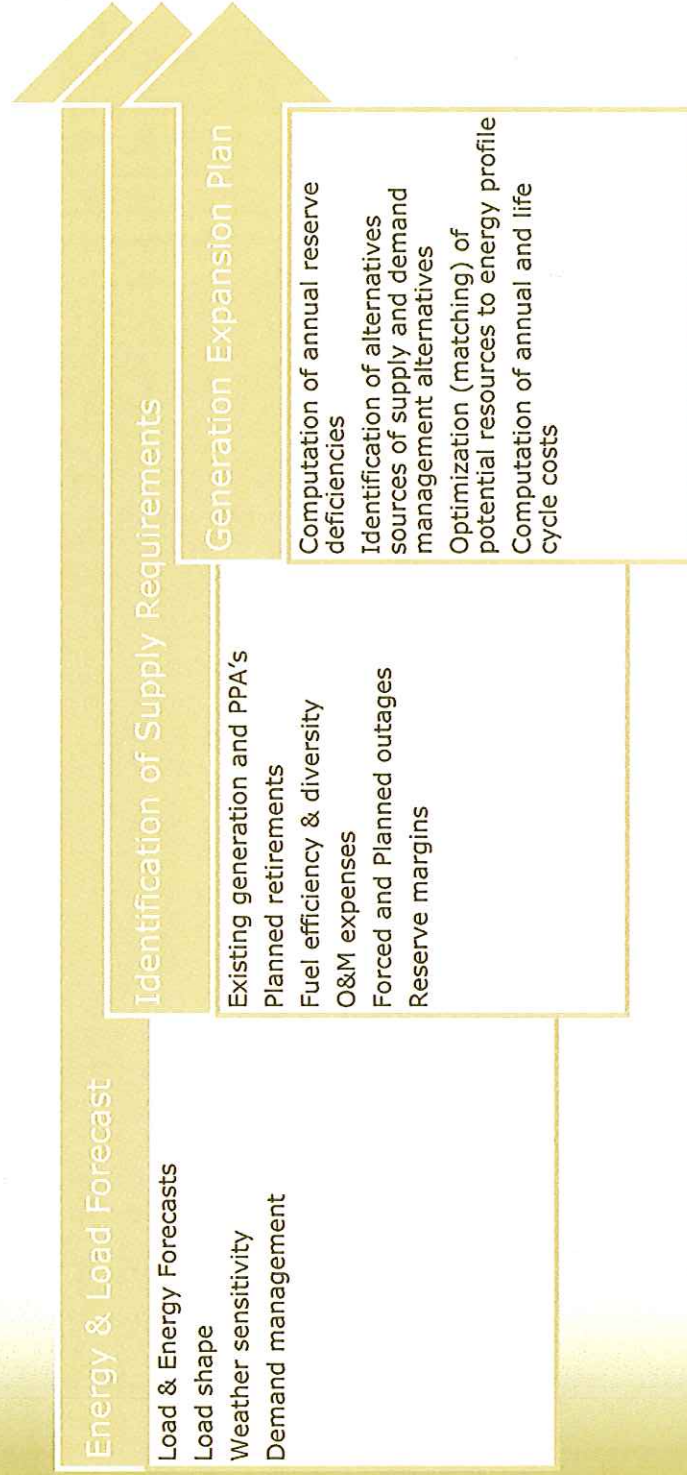
- Vetting and prioritizing all viable options
- Inviting stakeholder input to achieve consensus
- Recognizing that things change, so the process needs to be iterative
- The plan needs to balance cost with flexibility

**Typically, the peak load will grow exponentially, while capacity is added incrementally – in periodic steps. One goal is to keep the surplus/deficiency level as close to zero as possible.**

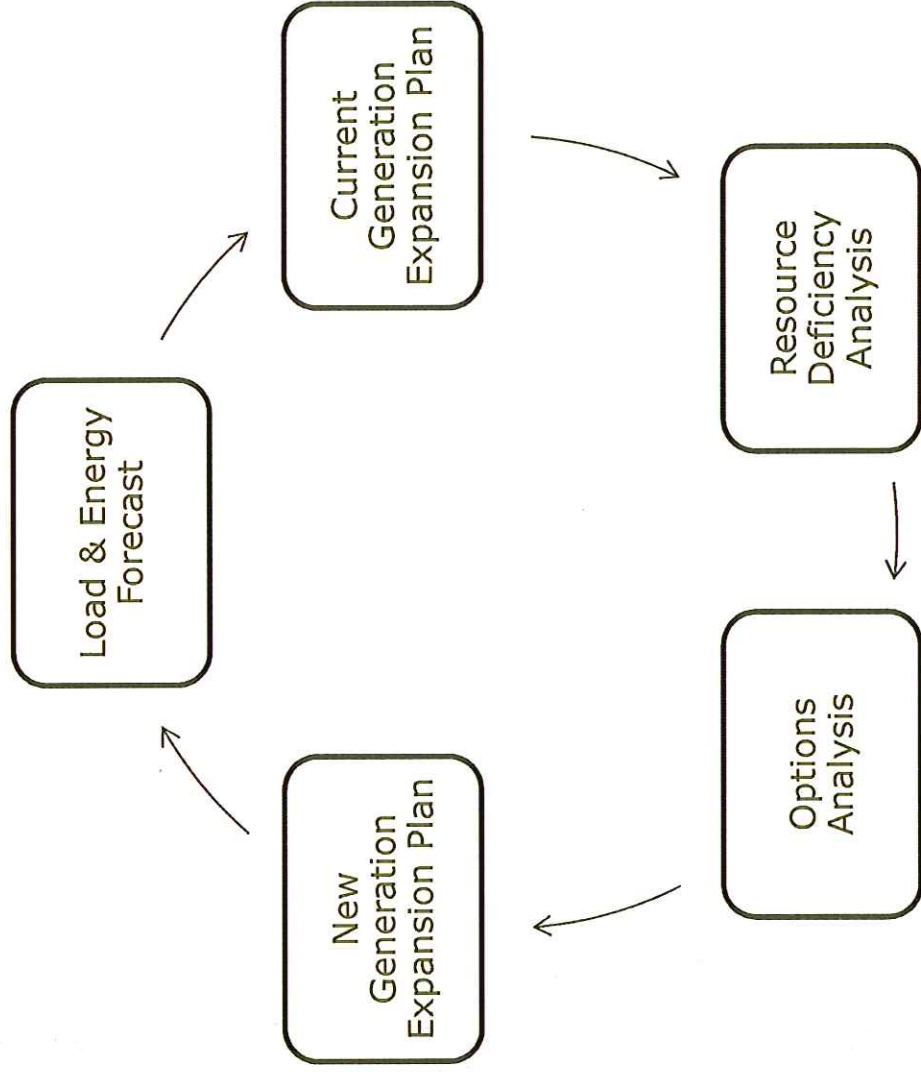
**Illustrative  
Load and Capacity Graph**



# The Generation Planning Process



**Generation or Resource Planning is an iterative process. Some utilities update their integrated resource plans annually – we suggest a biennial cycle with a simple “sanity” check the odd years.**



## **How does generation planning differ from a large IOU versus a smaller municipality?**

- Most IOU's need to file their IRP with a state energy office or PUC.
- Many IOUs must comply with Renewable Portfolio Standards (RPS) – (In Michigan minis also must comply)
- Economies of scale play a large role: a 5,000 MW utility will grow between 50 & 100 MW per year and could require a large scale base load generator every 5 years.
- The focus for a smaller muni is on:
  - Small scale generation
  - Co-ownership
  - Joint action agency participation



# Parameters for long range planning

- Because a generation investment is long-lived; typically 20 – 50 years, we must take into account a range of uncertainties:
  - Load and energy growth
  - Fuel prices
  - Emerging technologies
  - Public policy and environmental directives (two “big” ticket items are whether carbon emissions are taxed and at what cost; and will environmental controls over fracking dramatically impact gas prices))
  
- Access to competitively priced generation sources and transmission constraints
  
- Participation in the MISO
  
- System reliability and ability to withstand extended outages

**Large energy systems use generation optimization routines to match resources with energy demand requirements. We will use stochastic modeling to assess alternative expansion strategies that considers both unit costs and forecast uncertainty.**

- **Benefits include:**
  - Low cost analysis
  - State-of-the-art risk management
  - Understandability

# Key uncertainty drivers for Traverse City:

- Operation and maintenance costs – especially fuel costs
- Current and future environmental costs
- Shorter term options versus ownership
- Advantages of local resourced versus long distant transmission
- Opportunities to employ renewable resources and distributed generation

## Just what is “stochastic” analysis?

- There are basically two categories of forecasting models:
  - Deterministic -- one set of distinct solutions
  - Stochastic – a probabilistic set of solutions
- Each type can measure uncertainty:
  - Use sensitivity analysis to establish boundaries for a range of key drivers
  - Use scenario analysis to assess major policy or structural futures

**For Traverse City we will be using both deterministic and stochastic models. Examples of Stochastic assessments might include:**

- Natural gas price projections
- Greenhouse gas mitigation via a Carbon Tax or Cap and Trade mechanisms
- Capital costs for new construction

**As an example, while NYMEX Futures continue to migrate above \$4, regional spot prices can be highly volatile: on 1/21/14 spot prices rose to \$121.68 in NYC**

**Just within the last year, EIA has increased the probability that gas prices will rise above \$4 by 20% (from 40% to 60% likelihood)**

**EIA projects gas prices to range between a low of \$2.75 and a high of \$7.75 thru mid-2015.**

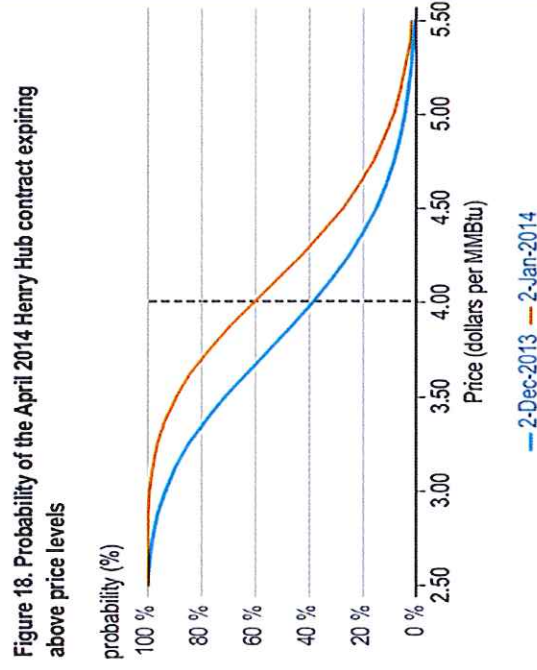
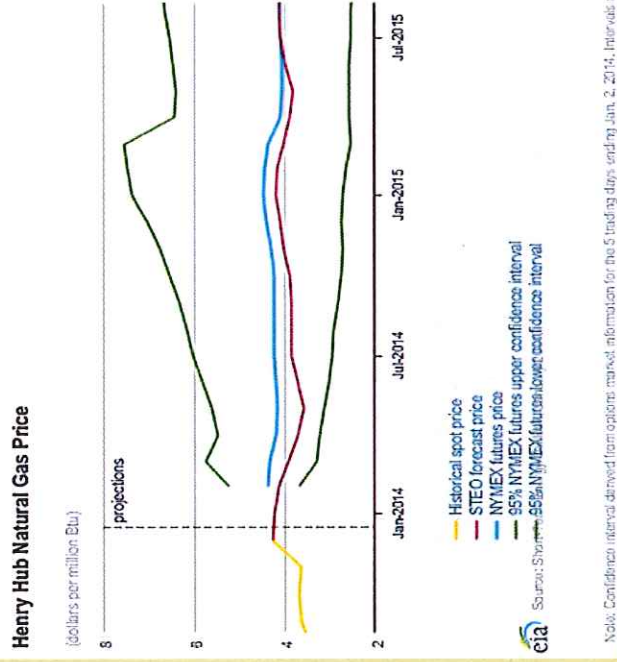
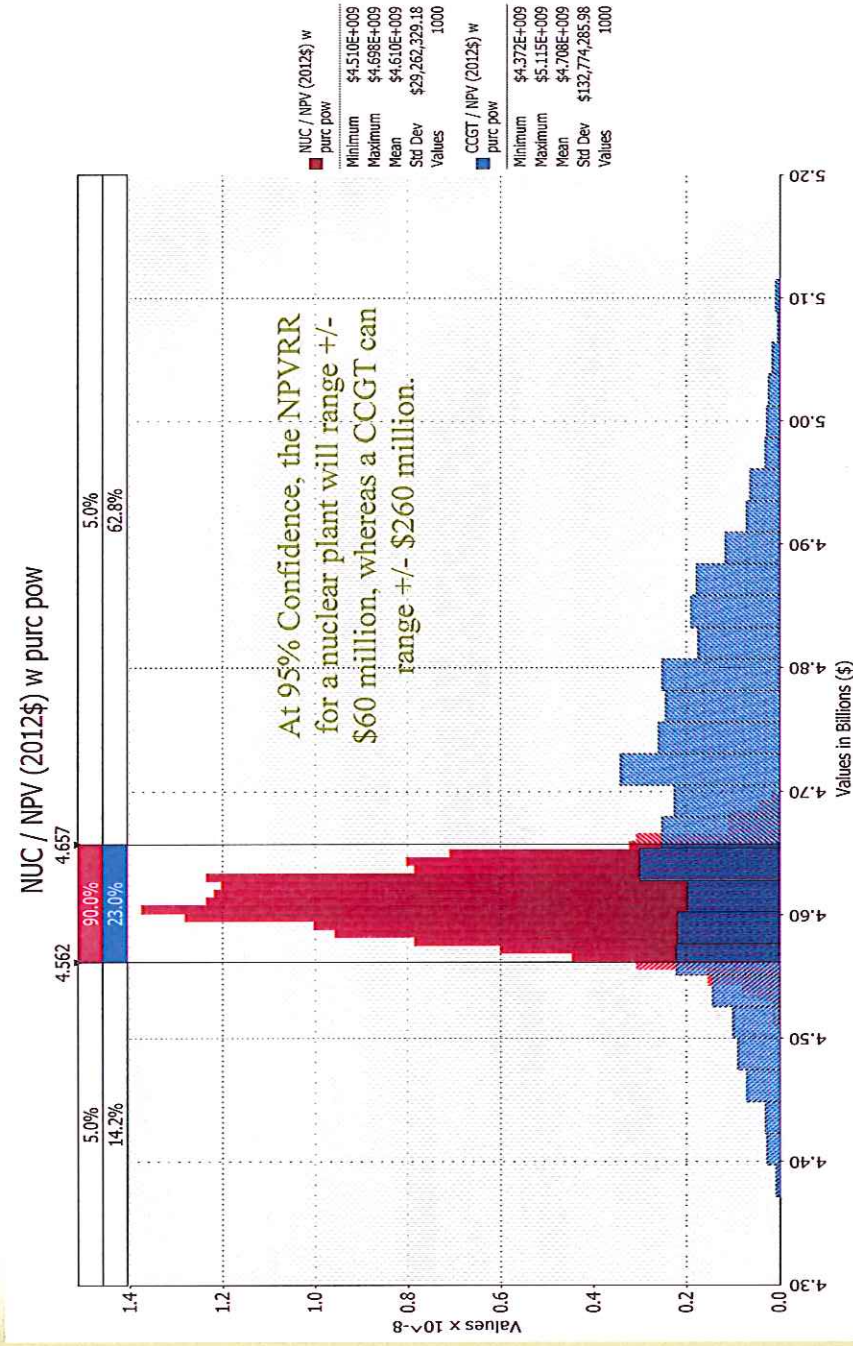


Figure 18. Probability of the April 2014 Henry Hub contract expiring above price levels

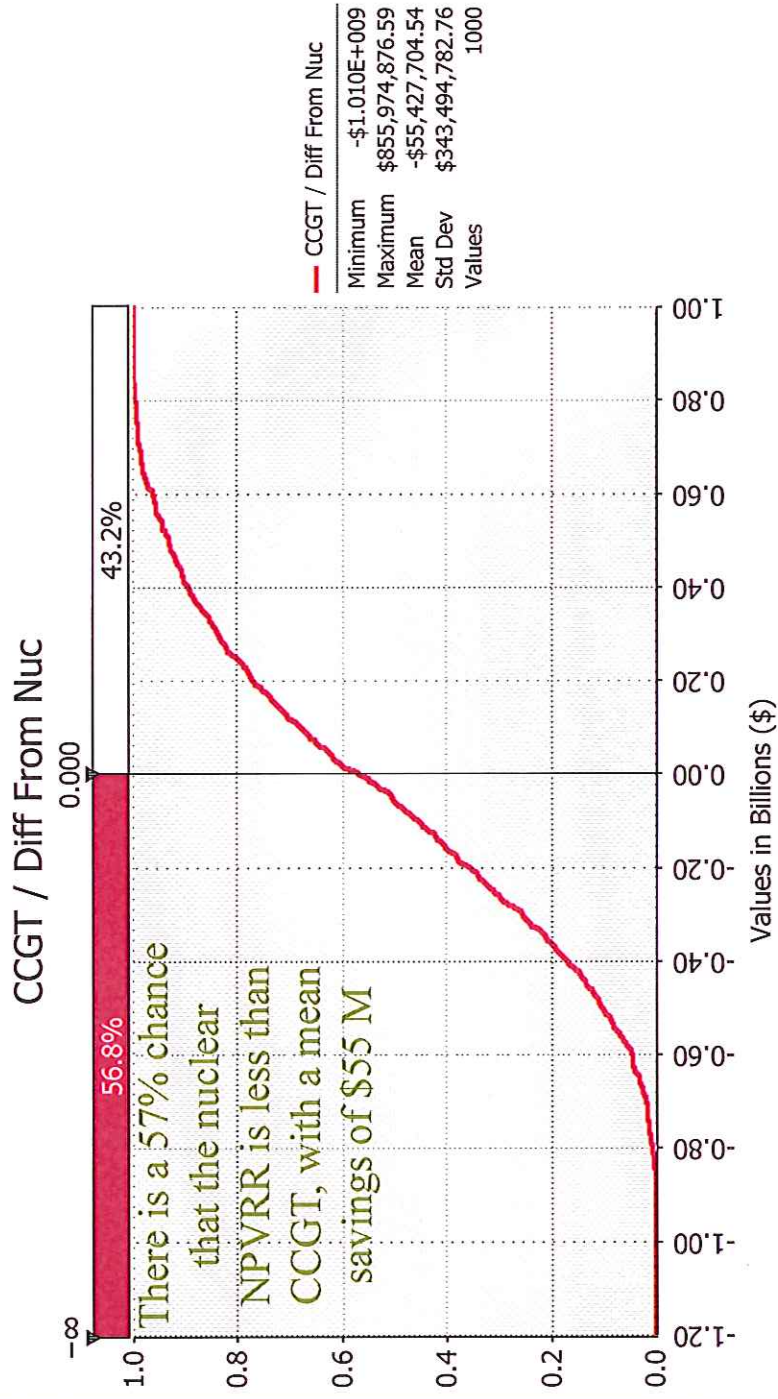
U.S. EIA, CME Group

Note: Confidence intervals derived from options market information for the 5 trading days ending Jan. 2, 2014. Intervals for

# Our models will be developed using Excel and @Risk, a Monte Carlo Model. Examples of @Risk Generation Planning outputs



**In this scenario, the upper bound of natural gas prices is 1.75 times the mean value. Also, a Carbon Tax of \$20/ton (2012\$) is added.**





# For Traverse City, we will perform the following tasks:

- Load & Energy Forecast Module Development
  - Base Growth Rate
  - DSM & Conservation Impacts
  - Uncertainty analysis
- Generation Expansion Schedule
  - Current Resource Schedule
  - Planned Resources
  - Retirements
- Generation Options Analysis
  - Self Build
  - Joint Action
  - PPA & MISO
- Generation Needs Assessment
  - Annual Deficiency Report
  - Reliability Criteria
  - "Best Option" Selection
  - Environmental & renewable objectives
- Generation Expansion Plan
  - Schedule of Planned and Projected Generation Resources

# Questions / Discussion

Final 4/3/14

RTD Consulting, LLC 3/11/2014

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