

**TRAVERSE CITY LIGHT AND POWER BOARD
CITY RENEWABLE ENERGY GOAL AD HOC COMMITTEE**

Will Be Held On

Thursday, March 21, 2019

At

12:00 p.m.

In The

Manager's Conference 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.

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Traverse City Light and Power
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Traverse City, MI 49686
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Posting Date:
3/19/19
3:00 P.M.

AGENDA

- 1. Discussion of non-technical content of the request for proposal for a solar array. Items for consideration are MW quantity, type of renewable energy, location, and when.**
- 2. Discussion of what more might the City bring to the table. Including \$2M, forty acres within the City limits, fifty acres owned by the City five miles south of town, and additional demand/partners to gain economies of scale.**
- 3. Discussion of technical content of the request for proposal. Utilizing a model of past request for proposal for power purchase power agreement and who would draft the request for proposal.**
- 4. Provide update of MPPA renewable energy projects.**
- 5. Discussion of renewable energy credits as a bridge to new renewable energy along with ten percent reduction in demand.**
- 6. Public Comment.**
- 7. Adjournment.**



**TRAVERSE CITY
LIGHT & POWER**

To: TCL&P Renewables Ad-Hoc Committee
From: Tim Arends, TCL&P Executive Director
Date: March 17, 2019
Subject: City of Traverse City Renewable Energy Goal

This memo is intended to provide the Committee with some context for your discussions on assisting the City in achieving its 2020 Renewable Energy Goals. There may be other ideas out there that I may not cover or thought of, which is fine, but I've tried to encompass all of the alternatives (including challenges, etc.) for those options as I see them today.

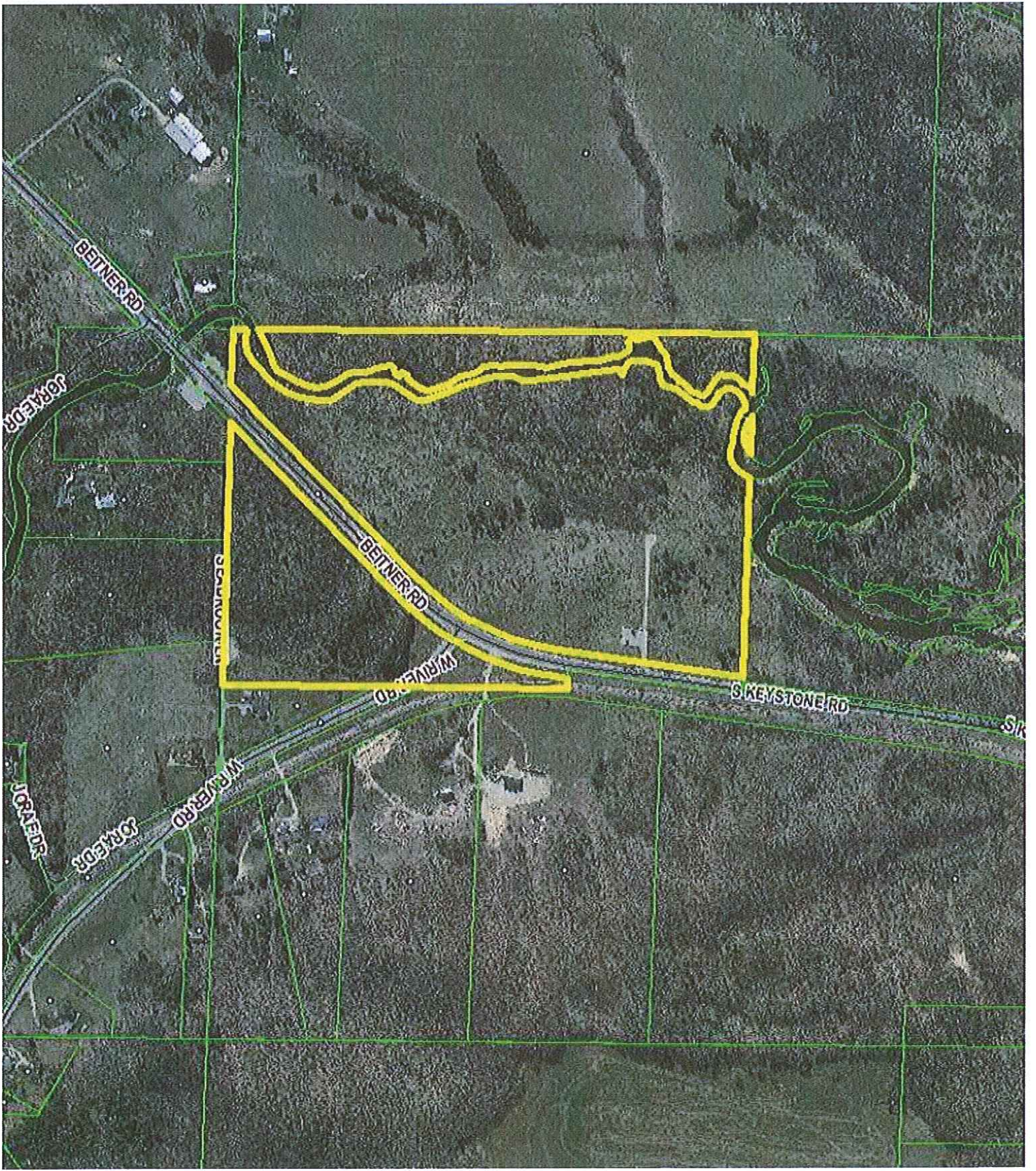
Karla has provided a breakdown of what the City needs to meet its goal of 100%. Currently, the City is at 22% renewable. Thank you to Elysha for providing her list of options as she sees them, which is attached. I will use that as a basis for my comments and add from there.

- The L&P Board has already approved entering into long-term contracts for Solar in southern Michigan. With these projects in production the city will be at approximately 34% renewable by 2021, this includes a wind project in the thumb region of Michigan which was originally scheduled for 150MW, but will likely be only 100MW due to FAA permitting and the proximity to the Cairo Airport. The solar projects look favorable, but there is no guarantee that they will come to fruition, as with any project. (let's assume they do)
- I believe the Commission entered into this goal with the intent to also include energy efficiency measures in its buildings, among other things. My recommendation is that they set a target to achieve 10% reduction in their energy consumption. This can happen collectively in all buildings, or in just a few to achieve the overall reduction levels. If this occurs, and the obligation for future generation goes online, the City would then need 55.59% in additional renewable energy purchases to achieve its goal (approximately 6,700 MWh's). This includes all funds of the City including Water and Wastewater funds.
- The City could achieve 100% renewable today if they sign-up for the VGP Rate adopted by the Board. They would only need to sign up at 75% to be 100% renewable today, or 50% with the anticipation of the new projects already approved. The cost would be \$57K at the 75% rate (spread amongst all funds with Wastewater being about 50% of that); or, select the lower amount and ramp up if the other projects do not come to fruition. This could be a bridge for the city and they could opt-out at any time, as it is a voluntary program.

- There is the option for the City to go out for bid for REC's. These are a commodity and can be purchased by anyone. TCL&P would not have to be involved in this process.
- After inquiring with MPPA, bilateral agreement options for renewable energy only may be very limited. To comply with the State Act they would have to be Michigan REC based. This option is really no different than the recent Spartan offer for five years, which could be considered a hedge or bilateral contract.
- I have been in discussions with MPPA to expand two solar projects for the benefit of the City's goal. One in Muskegon County, and the other in Shiawassee County. Both are permitted and on schedule to start construction in 2019. Price points are in the \$35 - \$42/MWh range (L&P's avoided cost of solar is \$57/MWh). This assumes capacity is included, of course. At this rate there would be NO premium to the City (we would have to figure out a mechanism to dedicate it all to the city, however). Again, until they are constructed and in production I cannot absolutely guarantee these projects come to fruition.
- Another option is to wait for MPPA to present more renewable energy offerings. An idea was presented at this month's MPPA Board meeting to create an Accelerated Renewable Energy Project Committee for those communities, like Traverse City, that want more sooner than later.
- One option could be, if the City is opposed to the VGP program, is to buy into existing renewable energy, as recently offered by Spartan Renewable Energies. For your information they have removed that offer from the table because they sensed from the last board meeting that you were looking for "additionality" as opposed to existing renewable energy. But, I could restart that conversation if you so desire.
- M-72 2MW solar expansion. I have informed the developer that the utility and city were not interested at the contract price of \$99.5/MWh. I have asked Heritage to come forward with a new offer that may include the solar expansion and possibly 5MW of wind power at Stoney Corners, which is currently under contract with DTE until 12/31/2019. I will share whatever information I receive from Heritage.
- Issue an RFP for renewable energy (locally preferred?). I question what local means to various board members as the definition for each may be different. However, the two options discussed would be on city owned property or on the developer's property.

I have included maps of the city owned properties that have been discussed recently. What needs to be considered in this process are all of the steps and challenges regarding this option. In an attempt not to dissuade you from these options (we will do whatever the Board desires) I did want to make you aware of the following, considering the other options as the path of least resistance to meeting the goal.

- Local zoning and permitting issues.
 - FAA approval (If needed).
 - Distribution integration issues and line extension costs.
 - Transmission integration issues (depending on size of project).
 - MISO integration issues, if outside the distribution system of TCL&P. (This would be a 12 month process at minimum with high cost).
 - Land acquisition, if not city or L&P owned land.
 - The property by the Airport is fully wooded. All trees would need to be cleared from the 40 acre parcel (wind will not be an option here because of the proximity to the airport). Possible political fallout to clear all the trees considering we are a "Tree City?" Competing interests perhaps.
 - Should the proposal request for a turnkey solution that encompasses operation, maintenance and monitoring of the array?
 - Development of construction standards (technology) for the solar array that will lead to information on the life of the array, panel degradation, efficiency rates, warranty length and equipment coverage.
 - Provide timeline of commercial operation date allowing for the ability for the developer to take advantage of the investment tax credit or could provide an option to buy into a solar project that is already developed by a certain established date.
 - The time for issuing an RFP and analyzing and awarding a bid, as well as jumping through all the hoops and hurdles described above would not get a project into production to meet the 2020 goal, in my opinion. That's okay if the city is willing to join one of the bridge programs to meet its goal, waiting for their ultimate desired goal.
- TCL&P owned property on Cedar Run Road. Currently, an engineering/environmental firm is working with L&P to gauge the possibility of using 5 of the 48 acres for solar (about the only usable space for solar). Since it takes about 3-4 acres/MW for solar that would equate to about 1.5MW.
 - Cherry Capital Airport Project. This project, being within the city limits and within L&P service territory, is a very attractive opportunity that would be specific to the City and TCL&P's goals. While the engineering study being commissioned by the Airport Commission is not due until this fall, obviously, this could not meet the 2020 goal to be in production. However, with faith and hope that it would move forward, and with TCL&P and City doing whatever it can to see it through, this may be a very good option to bridge for now and wait for that.
 - Another option, of course, is for the City to relax its timeframe and allow the utility to achieve its goal of 100% by 2040. Of course, I realize that's a non-starter, but thought I would put it out there.





City owns
28-51-113-010-00

28-51-113-002-02
GRAND TRAVERSE CO
& LEELANAU CO

City owned parcel
28-51-124-001-00
Approx 40 Acres



	Local	New or existing	Current cost	Potential risk to future costs	Risk likelihood	Risk level	Ease for TCL&P and City staff	Notes
M72 project purchase option	Yes	New	High (\$99/MWh - \$141,000/year for 2MW)	Miso capacity cost rises for RE	Medium	Low for such a small amount	Good	
Local procurement	Yes	New	Medium - high (M72 only comparable)	Miso capacity cost rises for RE	Medium	Low for such a small amount	Difficult	Can City ID property or would this be a general RFP?
Purchase local excess energy	Yes	Existing	Medium (\$52/MWh Spartan)	Miso capacity cost rises for RE	Medium	Low for such a small amount	Medium	We are already voluntarily buying that energy through MISO at a lower rate in a mix - we get RECs and energy
MPPA RE projects	No	New	Varies, generally low (\$41/MWh)	Miso capacity cost rises for RE	Medium	Low for such a small amount	Excellent	
Partner w/MPPA on more RE MW	No	New	Low (\$41/MWh)	Miso capacity cost rises for RE	Medium	Low for such a small amount	Good	Share is 22MW currently, timeline = 2020/2021
VGP until local projects come online	No	Eventually	Low	Varies	N/A	Low, will be buying power regardless	Good	
Increase bilateral MISO purchase of RE	No	Existing	Quite Low - should be assessed	Miso prices raise	Medium	Very low, short term contracts	Excellent	
VGP program	No	Existing	Very low (\$56,000/year)	RECs increase in cost	Very low	Very low, can exit	Excellent	Revenues could funnel back to energy efficiency for city operations
Consider energy efficiency	Yes	New	Negative, saves money	Project failure	Very low	Very low	Medium, requires procurement	

Note: Spreadsheet was prepared to show the cost of the City of Traverse City becoming 100% renewable through election of the Voluntary Green Program developed by Traverse City Light and Power. Updated with most recent calendar year 2018 information (does not include street or yard lights).

	General Fund	Special Revenue Funds					Internal Service Garage Fund
		Major, Local and MDOT	Heritage	Opera House	Brown Bridge	Senior Center	
Estimated Annual City kWh consumption	1,491,451	62,376	229,000	294,395	-	-	221,600
Less City Consumption Covered By Renewable Generation and Energy Efficiency Savings							
Current utility renewable portfolio percentage -10%	149,145	6,238	22,900	29,440	-	-	22,160
Future utility renewable added generation as a percentage of portfolio (Additional Wind - 2019 and Solar - 2021) - 12%	178,974	7,485	27,480	35,327	-	-	26,592
Election of the VGP Rider Tariff Rate - TCLP @ 100%	-	-	-	-	-	-	-
Estimated M-72 annual solar generation - 10%	159,800	6,683	24,536	31,543	-	-	23,743
Estimated energy efficiency savings - 10%	149,145	6,238	22,900	29,440	-	-	22,160
Subtotal - 44.4% Renewable and energy efficiency savings	637,064	26,644	97,816	125,750	-	-	94,655
City kWh consumption not covered by renewable generation and energy efficiency savings	854,387	35,732	131,184	168,645	-	-	126,945
VGP Rider Tariff Rate - price per kWh	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085
Total Annual Cost - 100% renewable	\$ 7,262.29	\$ 303.72	\$ 1,115.06	\$ 1,433.48	\$ -	\$ -	\$ 1,079.03

	Enterprise Funds				Discrete Component Unit		Total	Percentage Renewable
	Water Fund	Wastewater Fund	Auto Parking Fund	Marina Fund	TCLP	DDA		
Estimated Annual City kWh consumption	2,530,425	5,919,783	624,976	292,520	365,628	45,591	12,077,745	
Less City Consumption Covered By Renewable Generation and Energy Efficiency Savings								
Current utility renewable portfolio percentage -10%	253,043	591,978	62,498	29,252	36,563	4,559	1,207,775	10.00%
Future utility renewable added generation as a percentage of portfolio (Additional Wind - 2019 and Solar - 2021) - 12%	303,651	710,374	74,997	35,102	43,875	5,471	1,449,329	12.00%
Election of the VGP Rider Tariff Rate - TCLP @ 100%	-	-	-	-	248,627	-	248,627	2.06%
Estimated M-72 annual solar generation - 10%	271,120	634,270	66,963	31,342	-	-	1,250,000	10.35%
Estimated energy efficiency savings - 10%	253,043	591,978	62,498	29,252	36,563	4,559	1,207,775	10.00%
Subtotal - 44.4% Renewable and energy efficiency savings	1,080,857	2,528,600	266,956	124,948	365,628	14,589	5,363,506	44.41%
City kWh consumption not covered by renewable generation and energy efficiency savings	1,449,568	3,391,183	358,020	167,572	-	31,002	6,714,240	
VGP Rider Tariff Rate - price per kWh	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	\$ 0.0085	
Total Annual Cost - 100% renewable	\$ 12,321.33	\$ 28,825.06	\$ 3,043.17	\$ 1,424.36	\$ -	\$ 263.52	\$ 57,071.04	

Note 1: TCL&P has subscribed to the Voluntary Green Pricing Rider Tariff Rate at the 100% level.
Note 2: The Government and Law Enforcement Center estimated portion of consumption is included within the General Fund's estimated annual City kWh consumption.
Note 3: As the utility's renewable percentage increases it will lessen the amount of renewable kWh's needed for the City.

MW needed in Renewable Generation	
City kWh consumption not covered by renewable generation	6,714,240
Converted to MW Solar with 15% capacity factor	5.11
Converted to MW Solar with 20% capacity factor	3.83
Converted to MW Wind with 35% capacity factor	2.25