



P.O. Box 320325  
Boston, MA 02132  
Voice: 617•469•2172  
eFax: 617•419•1163

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M e m o

To: Doug Ross and Brian LeBrun  
From: Beth Greenblatt  
Date: November 24, 2015; Revised January 26, 2016  
Re: Solar Photovoltaic Evaluation Summary - Updated

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Doug and Brian:

This memorandum is intended to update the analysis previously undertaken of the solar photovoltaic proposals received from six qualified firms and to consider additional options and proposals presented for solar renewable energy generation.

**On-Site Solar Project Proposals:**

**1. Background:**

As the City is aware, the solar energy evaluation team reviewed proposals from all six firms. A comprehensive qualitative and quantitative assessment was undertaken. Of the proposals received, only one firm provided pricing that was economically viable. The proposals from the other five firms were priced at a rate higher than the City's historical competitively purchased electricity, and higher than the group net metering benefits anticipated from Until.

Net Metering, or the economic benefit generated from the production of energy provided to the local electric distribution companies from renewable projects, is capped at a level established by the NH legislature. Currently, the remaining available capacity behind Until is about 2.7 MW. On January 20, 2016, the Senate Energy Committee voted favorably on SB333 to increase the cap on net metering from 50 megawatts to 75 megawatts for the total amount of distributed energy, mostly solar that can be net metered. This cap increase will be split 60-40 between small, home solar systems and larger commercial systems. This increase in the net metering caps provides an intended short-term relief to expand the limited available capacity. The bill will be taken up in a future Senate session.

Under the procurement issued by the City for on-site solar photovoltaic systems, the City sought proposals for 4 MW of capacity, 1 MW each at the Landfill, Hall Street Wastewater Treatment Plant, Penacook Wastewater Treatment Plant and Hutchins Street Water Treatment Plant. Proposals received revealed the potential for at least 1 MW at each of the above locations except the Hutchins Street Water Treatment Facility. After conducting due diligence on SolarCity's pricing proposals, it was determined that the two most economically viable projects were 1 MW solar photovoltaic systems at the Hall Street and Penacook Street Wastewater Treatment Plants. Beacon notes that given the limited

available suitable land at the Hutchins Street Water Treatment Facility, siting a solar photovoltaic system at that facility and net metering it to Unutil is not economically viable. Moreover, none of the pricing proposals received from any of the six firms offered an economically beneficial solution for the City's capped landfill.

As required by the City's procurement documents, SolarCity committed to honor its pricing proposal until January 3, 2016 and further offered to make best efforts to extend such deadline based on market conditions. In an email to SolarCity dated December 18, 2015, the City sought confirmation from SolarCity that they would be willing to extend the terms, conditions, specifications and pricing of their proposal through March 31, 2016. This extension was sought was to allow for sufficient time for City Council review and consideration of recommendations in support of solar projects, and to negotiate the terms of the contracts. The City required such commitment to extend the offer by no later than December 31, 2015 in order to meet the schedules and timelines set forth for a public hearing on February 8, 2016, and a vote of the City Council on March 14, 2016.

On December 30, 2015, SolarCity advised the City that due to changing market conditions for environmental attributes and staffing limitations with their structured finance team due to the holiday, SolarCity was unable to reply to the City's request until January 13, 2016. SolarCity at that time understood that the request for an extension of the terms, conditions, specifications and pricing of their proposal extended to April 30, 2016 to comply the requirements of public review and approval process schedule.

On January 13, 2016, SolarCity advised the City that due to several environmental and geotechnical factors, their project approach and design had changed and their price offer would increase by \$0.002/kWh. Moreover, subsequent to submitting its proposals to the City, SolarCity's environmental team conducted further due diligence into the geotechnical aspects of the two wastewater treatment plant locations. During this process SolarCity identified that almost the entire Penacook Street site and a sizable portion of the Hall Street site fell within a 100-year floodplain. While information regarding floodplain and floodway was provided in the Request for Proposals, SolarCity's more in-depth due diligence revealed that the areas at the Penacook Street location were unusable for investor owned/funded solar installation. Notwithstanding, SolarCity was able to relocate the anticipated facility from the Penacook Street location to the Hall Street location.

Since the net metering regulations limit system sizes to no greater than 1 MW, SolarCity's revised approach and design considers two separate 1 MW systems installed adjacent to one another at the Hall Street location. SolarCity advised the City that under the New Hampshire Rules ("Rules"), the City might be required to subdivide the parcel. Beacon has confirmed with the New Hampshire Public Utilities Commission that no rule exists limiting the number of solar facilities on a single parcel. However, the Rules specifically leave the determination of the number of facilities on a parcel up to the local utilities discretion based on sound industry practices. In order to determine whether Unutil would allow two separate solar facilities at the same location to either interconnect with two separate meters or two separate interconnection, an application for interconnection would need to be filed in accordance with the Distributed Generation tariff.

Table I below presents SolarCity's original and revised pricing for a single 1 MW solar photovoltaic system at the Hall Street location and two 1 MW solar photovoltaic systems both located at the Hall Street location. As shown below, the current price of \$0.081/kWh is a fixed price for 20 years. The Illustrative Property Tax Adder represents the pass-through charges for SolarCity's illustrative property tax obligation of \$10,000 per year for 20 years. The total "all-in" price offered by SolarCity for either one or two systems, both located at the Hall Street location is \$0.0865/kWh, fixed for 20 years. SolarCity has offered this revised price proposal and redesign under the terms, conditions, specifications provided in their original proposal until April 30, 2016.

**Table I:**

	HALL STREET - 1 MW SYSTEM ONLY		HALL STREET - TWO 1 MW SYSTEMS	
	Original Price Offer: Group Net Metering Annual Energy Escalator of 0%	Revised Price Offer: Group Net Metering Annual Energy Escalator of 0%	Combined Systems Original Price Offer: Group Net Metering Annual Energy Escalator of 0% [3]	Revised Price Offer: Group Net Metering Annual Energy Escalator of 0%
<b>PROJECT GENERATION</b>				
Estimated Total First Year Generation (kWh)	1,980,930	1,980,930	3,964,453	3,964,453
Estimated 20-Year Generation (kWh)	37,791,988	37,791,988	75,633,446	75,633,446
Annual Degradation Rate	0.50%	0.50%	0.50%	0.50%
<b>PROJECT UNIT COSTS</b>				
<b>SolarCity Unit Generation Costs, Adders and Escalators</b>				
Base Generation Rate	\$0.07900	\$0.08100	\$0.07800	\$0.08100
Annual Escalator	0%	0%	0%	0%
Illustrative Property Tax Adder	\$0.00550	\$0.00550	\$0.00550	\$0.00550
Total Unit Price in Yr 1	\$0.08450	\$0.08650	\$0.08350	\$0.08650
Total Unit Price in Yr 20 [1]	\$0.08450	\$0.08650	\$0.08350	\$0.08650

SolarCity has also offered a discount to the above revised price tied to receipt of rebates from the NH Public Utilities Commission. Specifically, the base offered price of \$0.081/kWh would drop to the following based on the amount of rebate funds actually received:

- Rebate of \$100,000; all-in price of \$0.0865/kWh is reduced to \$0.0815/kWh.
- Rebate of \$200,000; all-in price of \$0.0865/kWh is reduced to \$0.0765/kWh.
- Rebate of \$300,000; all-in price of \$0.0865/kWh is reduced to \$0.0715/kWh.

## **2. Economics:**

Beacon conducted an analysis of the costs and benefits of the both 1 and 2 system project options offered by SolarCity in their revised pricing proposal. As the City is aware, under the Net Metering Rules, the economic benefit from net metering solar generated energy for systems sized greater than 100 kW is the product of the kilowatt-hours generated by the system(s) times the then-current Default Service rate of the utility. Beacon's analysis provided in Table II below presents the price offered by SolarCity as compared to a 24-month historical Default Service price for Non G1 (shown as G2) accounts. This Default Service price of \$0.09755/kWh is for the period June 2014 through May 2016, and will increase and decrease over time with changing market changes. Further, Beacon's analysis considered the economic benefits of net metering assuming under varying assumptions including a static rate over 20 years and a rate escalating at 1 percent per year, compounded annually.

To summarize the findings provided in Table II below, SolarCity's offered price of \$0.0865 per kilowatt-hour for either one or two solar photovoltaic systems, both located at the Hall Street location, is compared to a 24-month Default Service price for Non G1 accounts of \$0.09755/kWh. The Default Service price will increase and decrease over time due to market changes in the price of electricity. Under SolarCity's proposal, the City would benefit from the generation provided the Default Service rate was greater than or equal to \$0.0865/kWh. Beacon notes that the SolarCity offer includes an added obligation of an annual payment of property tax of \$10,000. Any additional tax obligation would be treated as a pass-through charge and would result in an increase to the offered electricity price.

**Table II:**

<b>SOLARCITY REVISED PROJECT OFFER - JANUARY 2016</b>				
<b>PROJECT GENERATION</b>	<b>HALL STREET - 1 MW SYSTEM ONLY</b>		<b>HALL STREET - TWO 1 MW SYSTEMS</b>	
	<b>Scenario 1: Group Net Metering Annual Energy Escalator of 0%</b>	<b>Scenario 2: Group Net Metering Annual Energy Escalator of 1%</b>	<b>Scenario 1: Group Net Metering Annual Energy Escalator of 0%</b>	<b>Scenario 2: Group Net Metering Annual Energy Escalator of 1%</b>
Estimated Total First Year Generation (kWh)	1,980,930	1,980,930	3,964,453	3,964,453
Estimated 20-Year Generation (kWh)	37,791,988	37,791,988	75,633,446	75,633,446
Annual Degradation Rate	0.50%	0.50%	0.50%	0.50%
<b>PROJECT UNIT COSTS AND BENEFITS</b>				
<b>SolarCity Unit Generation Costs, Adders and Escalators</b>				
Base Generation Rate	\$0.08100	\$0.08100	\$0.08100	\$0.08100
Annual Escalator	0%	0%	0%	0%
Illustrative Property Tax Adder	\$0.00550	\$0.00550	\$0.00550	\$0.00550
Total Unit Price in Yr 1	\$0.08650	\$0.08650	\$0.08650	\$0.08650
Total Unit Price in Yr 20	\$0.08650	\$0.08650	\$0.08650	\$0.08650
<b>Unitil Project Benefits and Illustrative Escalators</b>				
Unitil Energy Net Metering - Yr 1 [1]	\$0.09755	\$0.09755	\$0.09755	\$0.09755
Net Metering Annual Escalator	0%	1%	0%	1%
Unitil Grid Energy Net Metering Yr 20 [1]	\$0.09755	\$0.11785	\$0.09755	\$0.11785
<b>PROJECT PAYMENT AND CREDITS</b>				
<b>All-in Amount Paid to SolarCity</b>				
Year 1	\$171,350	\$171,350	\$342,925	\$342,925
Over 20 Yr Term	\$3,269,007	\$3,269,007	\$6,542,293	\$6,542,293
<b>All-in Amount of Unitil Credits</b>				
Year 1	\$193,244	\$193,244	\$386,742	\$386,742
Over 20 Yr Term	\$3,686,697	\$4,052,147	\$7,378,220	\$8,109,598
<b>Illustrative Payment from SolarCity for Property Tax [2]</b>				
Year 1	\$10,000	\$10,000	\$20,000	\$20,000
Over 20 Yr Term	\$200,000	\$200,000	\$400,000	\$400,000
<b>OVERALL NET BENEFITS (SAVINGS) TO CONCORD FROM SOLAR PROJECT</b>				
<b>Net Metering (Credits from Unitil Less Payments to SolarCity)</b>				
Year 1	\$21,894	\$21,894	\$43,817	\$43,817
Over 20 Yr Term	\$417,690	\$783,140	\$835,927	\$1,567,305
<b>Illustrative Tax Revenues - Payments from SolarCity to Concord</b>				
Year 1	\$10,000	\$10,000	\$20,000	\$20,000
Over 20 Yr Term	\$200,000	\$200,000	\$400,000	\$400,000
<b>TOTAL NET BENEFITS TO CONCORD (Group Net Metering and Illustrative Tax Payment)</b>				
Year 1	\$31,894	\$31,894	\$63,817	\$63,817
Over 20 Yr Term	\$617,690	\$983,140	\$1,235,927	\$1,967,305

[1] Unitil Group Net Metering rate assumes a conservative Basic Service charge.

[2] Personal property tax value is illustrative. Any increase/decrease is a pass-through to the base generation rate.

As the City is aware, the net metering statute and Rules require that City accounts benefiting from net metering must be served under the utility's Default Service rate. Therefore, accounts currently under competitive supply contracts would be required to return to utility Default Service. Since either the single or two proposed systems would be remotely located and fed into Unitil's distribution system, the City will benefit from a financial credit applied to City-identified Non G1 accounts. Therefore, for those City-identified accounts, the City would purchase 100% of its supply requirements from Unitil under the Default Service rate and receive a bill credit calculated by the amount of generation for that month times the Default Service rate. Arrangements for remotely generated solar are strictly financial. The City will not be taking physical custody of the generation.

The City should also consider what Beacon calls the "do nothing option". If the City does not contract for solar generated electricity under a net metering arrangement with SolarCity, it will continue to purchase competitive electricity supply for its Non G1 accounts. The comparative competitive supply price based on historical contracts (5/2006 through 11/2016) executed with suppliers for Non G1 accounts is \$0.08983 per kilowatt-hour. Therefore while the financial benefits are calculated as the difference between the net metering benefit (Default Service) received from Unitil (\$0.09755/kWh) and the price paid to SolarCity (\$0.0865/kWh), the true budget comparison is the difference between the current practice of procuring competitively (\$0.08983/kWh) and the price paid to SolarCity (\$0.0865/kWh).

It is important to note that SolarCity's pricing is fixed for 20 years. Competitive pricing typically is procured in 1 to 3 year terms depending on market conditions. As the City is aware, actual net metering and competitive supply pricing is tied to future market conditions. The historical data is used for illustrative purposes and represents periods of low pricing as well as high market volatility. Table III below provides a historical accounting of competitively purchased electricity for both the G1 and Non G1 accounts in addition to Unitil's Default Service pricing.

Table III:

<b>CITY OF CONCORD DATA</b>		
<b>TRADITIONAL RPS COMPLIANT ELECTRICITY SUPPLY CONTRACTS</b>		
<b>HISTORICAL COMPETITIVE SUPPLY CONTRACTS</b>	<b>\$/kWh</b>	<b>PERIOD</b>
<b>Contracted G1</b>	\$0.12710	12/2005-7/2006
	\$0.09820	7/2006-7/2008
	\$0.11820	7/2008-7/2010
	\$0.08200	7/2010-12/2011
	\$0.07220	12/2011-12/2013
	\$0.06900	12/2013-12/2014
	\$0.09770	12/2014-12/2015
	\$0.07850	12/2015-11/2016
<b>Straight Average Contract G1</b>	<b>\$0.09286</b>	<b>12/2005-11/2016</b>
<b>Contracted Non G1</b>	\$0.09940	5/2006-7/2008
	\$0.10800	11/2008-6/2009
	\$0.09840	6/2009-7/2010
	\$0.09010	7/2010-12/2011
	\$0.07220	12/2011-12/2013
	\$0.06420	12/2013-12/2014
	\$0.10160	12/2014-12/2015
	\$0.08470	12/2015-11/2016
<b>Straight Average Contract Non G1</b>	<b>\$0.08983</b>	<b>5/2006-11/2016</b>
<b>COMPARISON - ON SITE SOLAR PV VERSUS TRADITIONAL</b>		
<b>AVERAGE CONTRACTED SUPPLY PRICE NON G1</b>	<b>\$0.08983</b>	<b>5/2006-11/2016</b>
<b>AVERAGE DEFAULT SERVICE PRICE FOR NON G1</b>	<b>\$0.09755</b>	<b>6/2014-5/2016</b>
<b>FIXED SOLARCITY PRICE FOR NON G1</b>	<b>\$0.08650</b>	<b>12/2016-12/2036</b>

**Wheeled Solar Power Proposals:**

As noted above, net metering capacity behind Unitil is limited and subject to legislative action. Under the current Unitil available net metering cap of 2.7 MW, it is anticipated that both projects proposed for the Hall Street location would be able to net meter to Unitil. Beacon recommends that the City support the Senate Energy Committee's bill, SB 333 to increase the net metering caps, thereby providing a margin of additional capacity for the City's anticipated projects. In addition, the federal Investment Tax Credits, originally scheduled to decline from 30 percent to 10 percent on December 31, 2016, have been extended at the current level until 2019.

Due to constraints on the current availability net metering, Beacon was asked to conduct further discovery with the six proposing firms. Specifically, each firm was asked to respond to the City's inquiry as to whether they would be willing and able to wheel the power through Unitil instead of net metering it to Unitil. In short, they were asked to consider selling the solar generated electricity to the City as a "competitive supply". This is similar to the City's current competitive electricity procurement approach. Two of the six firms, SolarCity and Borrego, indicated that they were not in a position to sell "retail electricity" to the City. The other four offered pricing for individual facilities. Beacon evaluated the pricing proposals and found that none of the proposals provided an economically viable solution.

Finally, the City asked Beacon to evaluate an unsolicited offer by a private entity, Ranger Solar, to sell the City the solar generation from a very large 15 MW facility to be constructed on private land in Concord. Beacon arranged several conference calls with Ranger Solar to discuss the viability of the project and the offer. Beacon made clear during each of the conversations that the while City regularly conducts competitive solicitations for commodity contracts, it was interested in understanding the merits and opportunities of their offer. Beacon also made clear that the City does not have the appetite for 100% of the output of the solar facility since the City's annual electricity consumption is in the 8.7-million kilowatt-hour range. Notwithstanding, the balance of the annual generation could be sold to Concord School District as their requirements are in the 6.5 million kilowatt-hour range.

The following summarizes our initial findings:

- Ranger Solar is a developer who has rights to the privately owned parcel under consideration. They have indicated that they have a lease agreement in place with the landowner.
- Ranger Solar is negotiating with Constellation NewEnergy to sell the project.
- Ranger Solar has filed an interconnection application with Unitil. It is understood that based on topography and wetlands, the solar array has been downsized to 10 MW.
- Ranger Solar has commenced technical, geotechnical and wetland studies. Among the studies conducted include: wetlands analysis, natural heritage review, rare plant/species analysis and soils analysis. They have not yet filed for any State or local permits and, if necessary, zoning or land use permits.
- Ranger Solar understands that they will have property tax liability.
- Originally, Ranger Solar offered a fixed price of \$0.069 per kilowatt-hour with a 3% annual escalator. Beacon pressed Ranger Solar to ensure that the price was a fully delivered retail price, excluding delivery and demand charges. Beacon also advised Ranger Solar that a 3% annual escalator was higher than market. Ranger Solar agreed to discuss pricing with Constellation NewEnergy and provide a revised proposal that contain either no escalator or a lower escalator.
- Ranger Solar's revised proposal included the following:
  - 100% full requirements contract for all of the City's electricity needs. As the City is aware, solar energy is not baseload electricity as it only generates electricity when the sun is out. The City is currently contracted under a full requirements contract.

- The revised offer was a fixed \$0.76 per kilowatt-hour rate for five years, no escalator.
- In years 6-20, the City would either negotiate a new rate with the competitive supplier (Constellation NewEnergy) based on the then-current energy market conditions or seek additional proposals from other competitive suppliers.
- Beacon scheduled a call with Constellation NewEnergy to discuss the specific offer and to better understand the pricing for the initial term and any desired additional terms.

On December 2, 2015, Beacon had a follow-on conference call with Ranger Solar and Constellation NewEnergy regarding the prospect of a full-requirements contract as a result of the solar photovoltaic system proposed by Ranger Solar. Subsequent to that discussion, Ranger Solar provided Beacon with an updated proposal.

The following summarizes the findings:

- Ranger Solar, not Constellation, provided the follow-on proposal for a ten (10) year supply agreement. Beacon expects that this is part of Ranger Solar's entitlement process as they negotiate the project sale to Constellation NewEnergy. Therefore, the information and offer described below is not a firm offer from Constellation NewEnergy, but rather an offer that Ranger Solar believes meets the investment metric for Constellation NewEnergy based on their discussions.
- Initially Beacon understood the Ranger Solar offer to be a wheeled solution to Unutil. Instead, the proposal from Ranger Solar is for Ranger Solar to sell 100% of the solar generation to Constellation NewEnergy as a resource to its supply portfolio. Constellation NewEnergy would provide the City with a 100% requirements contract for full electricity supply for ten (10) years. The character of this supply is RPS-compliant electricity. While the City cannot assert that it is buying 100% green power, it can claim that the long-term contract with Constellation NewEnergy has enabled Concord-based solar generation to be fed to Unutil for the benefit of its customers. All environmental attributes would accrue to the benefit of Constellation NewEnergy.
- Ranger Solar indicated that the system would be downsized to approximately 10 MW DC due to site issues and to match the requirements of the City and an additional off-taker, preferably Concord School District.
- Ranger Solar indicated that they would ask the City to support its proposal to Concord School District and facilitate a contact.
- Ranger Solar's price offer for a full requirements RPS-Compliant product increased from \$0.076/kWh fixed for five (5) years to \$0.079/kWh escalating at an rate of 1.5% per year compounded. The ultimate rate in year ten (10) would be \$0.09033/kWh.
- Ranger Solar indicated that Constellation NewEnergy would be willing to sell the City Renewable Energy Certificates sufficient to allow the City to claim that it is purchasing 100% green energy. This would be at an additional cost.
- Ranger Solar acknowledged that Constellation NewEnergy understood that the solar array is subject to taxation and they would welcome the opportunity to negotiate a payment in lieu of taxes with the City.



As shown in Table III above, Beacon has provided an analysis of the historical prices of the competitive electricity contracts entered into by the City. As shown, for the period 12/2005 through 11/2016, the average price for contracted electricity for the City's two G1 accounts is \$0.09286/kWh (supply costs only). For the period 5/2006 through 11/2016, the average price for contracted electricity for the City's Non G1 accounts is \$0.08983/kWh (supply costs only). The straight average of the two is \$0.09134/ kWh (supply costs only). This is compared to the \$0.079/kWh offered by Ranger Solar in year 1 growing to \$0.09033/kWh in year 10.

If the City is interested in pursuing a fully renewable electricity solution and chooses to competitively procure such supply, Beacon and Axsess will issue a solicitation that addresses long-term options for 100% renewable supply. We will specifically address supply options from various renewable generating facilities (solar, wind, hydro) and locations. The City's evaluation criteria can prioritize offers from locally generated supply sources.

### **Conclusion and Recommendations:**

While the procurement process for solar photovoltaic systems on City-owned parcels resulted in comprehensive and creative proposals, only SolarCity's proposals are economically attractive, and only for projects at the Hall Street Wastewater Treatment Plant. The SolarCity price offer (\$0.0865/kWh) is a fixed price over a twenty (20) term and is less than the two-year average Default Service rate (\$0.09755/kWh) and less than the ten-year average competitive contract rate for non-G1 accounts (\$0.08983/kWh). Beacon notes that benefits from on-site solar are subject to legislative and regulatory action and oversight for net metering. In the event there is a change of law or regulation, project economics could be impacted. Finally, it is understood that the available capacity behind Unitil for group net metering is diminishing and any increase in that capacity requires legislative action.

With respect to the Ranger Solar offer, this approach is more similar to the competitive supply purchases the City has done over the past ten (10) years. In this case however, a large-scale solar array would be interconnected to Unitil for the benefit of all of its customers. The City would buy under a ten (10) year contract, RPS-Compliant electricity from a licensed supplier, presumably Constellation NewEnergy, at a fixed price with an escalator. Under this approach, the City is not purchasing solar generated electricity, but rather supporting the development of solar generation. The financial proposal offered by Ranger Solar, while attractive in the early years, escalates at a rate of 1.5% compounded. The year ten (10) price is marginally less than the ten (10) year average price the City has contracted for with competitive supply.

Based on the due diligence undertaken by Beacon for the various solar photovoltaic opportunities presented to the City, Beacon recommends the City consider the following strategies:

- 1. Contract with SolarCity for either one or two solar photovoltaic systems at the Hall Street Wastewater Treatment Plant.**

- The SolarCity price offer for one or both systems is less than both the average Default Service (net metering) rate and the ten (10) year average contracted supply rate. Further, the SolarCity rate is fixed for twenty (20) years and has the additional financial benefit of \$10,000 per year of property tax obligation. Given the foregoing, a locally-site solar photovoltaic array on City-owned property will provide a hedge against future market volatility for electricity supply.
- The solar generation of approximately 1.98 million kWh for one system or 3.96 million kWh for two systems will be Group Net Metered to the City for the benefit of City selected Non G1 (smaller) accounts.

## **2. Purchase Competitive Electricity Supply for the G1 (larger) accounts and the balance of the Non G1 (smaller) accounts.**

- Market supply pricing is currently soft due to a host of factors including unseasonably warm weather, and low crude and natural gas commodity prices, among other factors. It was recommended that the City take advantage of the soft market and seek competitive supply pricing for electricity for terms of 1 and 2 years.
- At the City's request Axcess/Beacon, conducted a competitive supply procurement for the City's two large G1 accounts. The City sought pricing for RFP-Compliant electricity, 50% Green-E certified electricity and 100% Green-E certified electricity for periods of one, two and three years. On January 26, 2016, the City contracted for 100% Green-E certified electricity for the period December 2016 through November 2018 at a rate of \$0.0721/kWh. Beacon notes that the purchase of 100% Green-E certified electricity is expected to result in avoided carbon dioxide emissions due to a reduction in indirect emissions associated with displaced generation from traditional electric generating sources. As a result of the City's purchase, the reduction in carbon dioxide emissions is an estimated 9,428,432 pounds.

## **3. Decline the Ranger Solar Offer.**

- While the Ranger Solar offer provides a significant in-City solar photovoltaic array on privately-owned property, the project has several risks including:
  - The offer by Ranger Solar remains indicative (not firm) until Constellation NewEnergy conducts its comprehensive due diligence. While Constellation NewEnergy has indicated to Ranger Solar that it is highly interested in the project at the proposed electricity price, it has not yet provided a firm commitment.
  - The economics of the Ranger Solar offer is attractive in comparison to the historical electricity supply contracted by the City for all accounts. The price of \$0.079/kWh in year 1, escalating to \$0.09033/kWh in year 10 compares favorably to the City's straight average ten (10) year

contracted supply rate of \$0.09134/kWh for both G1 and Non G1 accounts. However, since the Ranger Solar offer is indicative, any increase in year 1 pricing would unfavorably alter the economics. Moreover, the Ranger Solar indicative offer is greater than the two (2) year contracted pricing for the G1 accounts as shown above.

- A ten (10) megawatt project will likely consume fifty (5) plus acres of land. Such a large solar facility located in currently an agricultural area may require alternative zoning considerations and other environmental permitting requirements, including wetlands analysis. This process can be time consuming.
- The utility interconnection requirements for such a large system is currently unknown. Upgrades to the nearby Unitil substation may be required.

Thank you for the opportunity to support the City with these strategies to identify environmentally sustainable solutions. I welcome your feedback.