

Sandisfield Green Committee Minutes August 26, 2021

In Attendance: George Riley, Anina Carr, Larry Dwyer

Location: Town Hall Annex, 1:00 PM

The meeting began at 1:07 PM with the reading of the minutes from July 8, 2021. The minutes were accepted 3-0.

We received four proposals from our RFP from the following vendors:

- Sun Bug
- Energy Resources*
- Valley Solar
- Grenergy

*Matt and Simon Matthews from Energy Resources were the only company representatives who choose to attend the meeting via Zoom. Larry wanted to know why Energy Resources and Valley Solar are using different solar panels for the different buildings. One for the DPW and one for the Town Hall Annex. Matt said the two different roofs require it. It has to do with the steeper grade of the Town Hall Annex. The DPW can support larger panels, also the panels on the DPW will not be seen from the ground.

George asked Matthew about the energy rebate from Eversource on solar panels. Matt called it "Smart Panels", also we have "Gross Costs" and "Smart Incentive" payments. George asked, "Does your cost to the town reflect those two payments?" The rebates would be paid to the town over ten years.

Jeff said to George in his email that the number of panels should be 43 not 45. Also the energy output seems too high. (See below email from Jeff Bye dated 8/25/2021 for details of the question.) Jeff also said Energy Resources is an outlier compared to the other two companies.

Larry asked about the energy inverter. Matt said his inverter was the same as Valley Solar. Solar panels are different and are available from two companies. What about the Grenergy inverter? Larry wanted to know why Matt's was different. Matt said his inverter was more efficient, smaller and easier to install. Larry asked is that why the numbers are so different for energy generation? Also there were pictures of trees in the quote and some of the trees would have to come down at the DPW. Matt stood by his numbers and his shade analysis.

George said the H model inverter is 10,000 kW. Matt said the AC system power is different, therefore less DC power gains. Efficiency comes online earlier in the morning and stays on later in the evening. George asked what happens to the excess power in the summer. Matt said it would go into a "savings account" for the winter months. At the end of March there should be a 4,000 kWh surplus. Some excess power would be lost in the summer and that might be the difference in the numbers.

Larry and George did not want to decide today until Jeff is available. Matt said he is willing to come to the meetings.

We will check on the next date that Jeff is available. Also Matt was asked if you can install late in the year. Matt said they work all year round.

George said if you were to get the bid, it would have to be approved by the (DOER) Department of Energy resources. He asked how much time would it be after that and Matt said it would be about one month.

A meeting was scheduled for September 1, 2021 at 12:00 pm.

Meeting adjourned 2:10 PM.

Minutes by Nina Carr

-----Original Message-----

From: Jeff Bye

To: Larry Dwyer

Cc: George Riley, Nina Carr

Sent: Wed, Aug 25, 2021 11:27 pm

Subject: Solar Power Proposal Findings

Hello fellow committee members,

Below is a summary with findings from my review of the four proposals received in response to the solar power RFP. We will need to ask some questions in order to have the same and complete information from the four bidders before we can make any decision. Sorry that I will not be able to join you tomorrow.

FYI I found a error in the proposal from Energy Resources. For the Town Hall Annex the number of solar panels in their design should be 43, not 45. And in my opinion the total annual energy production estimate Energy Resources has provided for the 2-building solution appears to be high compared to the other proposals. Both SunBug Solar and Grenergy sent out technicians to visit both buildings and make actual sun collection measurements and observations from the roofs of the buildings. For what it is worth the annual energy production estimates from SunBug Solar and Grenergy are more credible in my opinion.. If you compare the total DC power output from the SunBug Solar proposed 2-building solution to the total DC power output from the Energy Resources solution, the values are 29.7 kW DC compared to 29 kW DC. And yet the total annual energy production estimate provided by Energy Resources is 33,613 kWh AC compared to SunBug Solar's estimate of 27,600 kWh AC. This is a difference in total (from both buildings) annual energy production of 21.8% ! This is a significant difference. Which estimate is right? Especially when the annual energy production estimates from the two bidders that visited the two sites and made measurements are virtually identical (27,613 and 27,600 kWh AC). And the estimate from Valley Solar is only 3.3 % different from these two estimates (28,507 kWh AC).

Valley Solar did not provide us with the total proposal cost broken down to show material cost and labor cost as required by the RFP. They have these costs so we should ask them to provide them to us..

All four proposed design solutions for the two buildings incorporate single phase 10 kW AC inverters for both buildings... So no need to convert (and fund) power service to 3-phase power.

Valley Solar (Town Hall Annex)

- 13.68 kW DC power
- 36 solar panels, 380 watts DC per panel
- 10 kW AC power inverter
- Annual production estimate, **14,183 kWh AC**
- Single-phase power
- ? material cost
- ? labor cost
- \$43,913 gross cost

Valley Solar (DPW Garage)

- 13.76 kW DC power
- 32 solar panels, 430 watts DC per panel
- 10 kW AC power inverter
- Annual production estimate, **14,324 kWh AC**
- Single-phase power
- \$ material cost
- \$ labor cost
- \$43,894 gross cost

Valley Solar Totals

- 27.44 kW DC power
- 36 solar panels 380 watts DC each
- 32 solar panels 430 watts DC each
- Annual production estimate, **28,507 kWh AC**
- **\$87,807 gross cost**
 - ? material cost
 - ? labor cost
- \$24,477 SMART incentive payments (over 10 years)?

Greenergy (Town Hall Annex)

- 12.58 kW DC power
- 34 solar panels, 370 watts DC per panel
- 10 kW AC power inverter
- Annual production estimate, **14,754 kWh AC**

- Single-phase power
- \$27,500 material cost
- \$17,500 labor cost
- \$45,000 gross cost

Greenergy (DPW Garage)

- 12.58 kW DC power
- 34 solar panels, 370 watts DC per panel
- 10 kW AC power inverter
- Annual production estimate, **12,859 kWh AC**
- Single-phase power
- \$27,500 material cost
- \$17,500 labor cost
- \$45,000 gross cost

Greenergy Totals

- 25.16 kW DC power
- 68 solar panels 370 watts DC each
- Annual production estimate, **27,613 kWh AC**
- **\$90,000 gross cost**
 - \$55,000 material cost
 - \$35,000 labor cost
- \$2,000 state tax credit?
- \$23,400 26% federal tax credit?
- \$847.49 Solar Renewable Energy Credits (annual estimate)?

SunBug Solar (Town Hall Annex)

- 14.5 kW total DC power
- ? number of solar panels
- 10 kW AC power inverter
- Annual production estimate, **14,000 kWh AC**
- Single-phase power
- ? material cost
- ? labor cost
- ? gross cost

SunBug Solar (DPW Garage)

- 15.1 kW total DC power
- ? number of solar panels
- 10 kW AC power inverter
- Annual production estimate, **13,600 kWh AC**
- Single-phase power
- ? material cost
- ? labor cost
- ? gross cost

SunBug Solar Totals

- 29.7 kW DC power
- 90 solar panels 330 watts DC each
- Annual production estimate, **27,600 kWh AC**
- **\$86,345 gross cost**
 - \$50,000 material cost
 - \$18,000 labor cost
 - \$18,345 engineering, permits, profit, warranty costs
- \$800 Solar Renewable Energy Credits (annual estimate)?

Energy Resources (Town Hall Annex)

- 14.6 kW DC power
- 43 solar panels, 340 watts DC per panel
- 10 kW AC power inverter
- Annual production estimate, **18,127 kWh AC**
- Single-phase power
- \$20,224.41 material cost
- \$18,635.30 labor cost
- \$1,798.16 fixed fees
- \$2,136.18 additional costs
- \$42,794.05 gross cost

Energy Resources (DPW Garage)

- 14.4 kW DC power
- 30 solar panels, 480 watts DC per panel

- 10 kW AC power inverter
- Annual production estimate, **15,486 kWh AC**
- Single-phase power
- \$20,834.53 material cost
- \$18,894.11 labor cost
- \$1,813.50 fixed fees
- \$2,136.18 additional costs
- \$43,678.32 gross cost

Energy Resources Totals

- 29 kW DC power
- 43 solar panels 340 watts DC each
- 30 solar panels 480 watts DC each
- Annual production estimate, **33,613 kWh AC**
- **\$86,472.37 gross cost**
 - \$41,058.94 material cost
 - \$37,529.41 labor cost
 - \$3,611.66 fixed fees
 - \$4,272.36 additional costs
- \$22,482.81 26% federal tax credit?