FINAL

Town of Middlebury
Meeting with VGS Minutes
Friday, February 5th, 2021

Present via Zoom: Howard Widelitz, Richard Hopkins, Steve Maier, Van Barth, Ross Conrad

Guests: Tom Murray, Tiana Smith

Absent: Lindsey Fuentes-George, Liv Herdman, Diane Munroe, Lisa Bernardin

Meeting started at 3:00 p.m.

Digester possibilities:
Richard opened the meeting by explaining how the Town has partnered with a firm to design a new Wastewater Treatment Plant. The new design recommends that an anaerobic digester be built. The MEC asked the firm Tata & Howard to calculate estimations for possible gas capture and electricity generation, but the price for those estimations was too high.

Tom said that VGS might be interested in paying for those calculations. He said that the gas captured from a digester at the WWTP would be approximately 50-60% methane. This could be directly used in combustion engines but sulfur in the gas mix could eat away at engines. This gas could be purified into renewable natural gas and mixed in with the general natural gas supply. Tom explained that every biogas project has a carbon intensity score that calculates the carbon emitted along the whole supply chain for a certain fuel type with a lower score being better for the environment. For this calculation, renewable fuels are compared to the alternative that they are replacing. Wastewater treatment plant gas has a lower score than gas from landfills but not as low as gas from manure. Tom said that VGS does bring in renewable natural gas from a WWTP out of state and soon the Middlebury College-Vanguard project will be online.

Richard mentioned that there are several businesses on Exchange Street that are thinking about building a digester. He wanted to know how that would interact with a possible WWTP digester. Over half the wastewater comes from industrial and business sources. Howard replied that in the long run it might cut down on the quantity of solids going into the WWTP.

Ross asked Tom how much gas is generated from the WWTP out of state that was mentioned earlier and whether that would help determine the possible output for the Middlebury WWTP. Tom said that he would find that answer. Tom said that with Agri-Mark on Exchange Street might use a heat loop which could help further offset Agri-Mark's emissions.

Richard outlined the possible options for a digester at the WWTP. It could either burn gas on site, burn gas for on site electricity and send excess into the grid as net metering, burn gas for electricity but keep it off the grid or refine the gas and feed it into the VGS distribution system. Tom said that the most efficient option is to burn the gas on site as heat since electricity generation is not very efficient. Richard pointed out that the WWTP does not need the heat in the summer and there would be excess gas. Tom agreed and said that is why it is necessary to figure out the energy needs of the WWTP, the possible amount of gas capture and the opportunities for net metering.

Ross asked if VGS could build a plant that operates on agriculture waste and excess solar. Tom said that hydrogen gas is being explored as a possibility to store energy. A current running

through water can separate oxygen and hydrogen. This gas can be injected into the pipeline when needed and be counted as renewable natural gas. This essentially transforms the gas infrastructure into a giant battery. This would alleviate the disconnect between renewable generation and electricity usage. Hydrogen blending is already in use in Germany. Ross said that if VGS is going to stay relevant, taking waste and generating renewable gas is the direction they will have to take.

Richard asked Tom if it would be possible to store the gas generated by a digester that would not be used for heating. Tom replied that if gas is 50-60% methane it may take up a lot of space at the facility and the sulfur in the mix could corrode a tank. Tom asked what the energy demand for heating the WWTP is. Richard said that it takes a little over 5,000 gallons of fuel oil for the buildings at the WWTP.

Steve commented that the consulting firm, Tata & Howard, was very nonchalant about the whole process but then came back to the MEC with an expensive proposal. Richard said the the MEC does not need a very precise calculation but rather a rough estimate. Tom said that VGS could either pay for the calculations themselves or reimburses the Town for the cost. Tom will start a draft and will send it over to the MEC the following week. He will cover the big topics and is welcoming the MEC's input. Howard said that it would be great to narrow down options and figure out what is clearly cost prohibitive. Tom added that VGS would considers subsidizing the project and buying credits. The boilers at the WWTP could burn gas and then natural gas could serve as a backup. Richard suggested that Bob Wells be included in these discussions soon.

The meeting adjourned at 3:48 p.m.