TOWN OF WINCHESTER
CONSERVATION COMMISSION
Held Remotely Via ZOOM
February 10, 2022 – 5:00PM
Meeting Minutes

1. CALL TO ORDER:
Amanda Hill called the meeting to order at 5:00PM.

2. ROLL CALL:
The following individuals were present: Amanda Hill, Jen Perga, Willard Platt, Renata Waldron, Joseph Ulevicus, and John Wiarda. Additionally, Town Manager Josh Kelly and Wetlands Enforcement Officer/Zoning Enforcement Officer Michael Stankov was present.

3. APPROVAL OF MINUTES – JANUARY 13, 2022:
No business discussed.

4. FUEL CELL Q&A WITH MICHAEL PALMER:
Fuel Cell Energy Business Development Representative Michael Palmer appeared before the commission, reviewing fuel cell technology. He noted that Fuel Cell Energy is headquartered in Danbury and has a manufacturing facility in Torrington. Mr. Palmer explained his company targets four areas: distributive generation, distributive hydrogen, hydrogen energy/storage, and carbon capture. He reported Fuel Cell Energy's customer base as international and noting that their base also includes municipalities.

Mr. Palmer explained that fuel cells are often viewed for resiliency or reliable supply of energy, competitive pricing, and/or meets some sort of sustainability goals. He indicated that while there are seven different technology types of fuel cells in the world, there are only five that are available commercially, with the three most common types being solid oxide, molten carbonate, and phosphoric acid. He explained that those three are what is most commonly used for stationary fuel cells with the others used typically for transportation and motor applications.

Mr. Palmer noted that every fuel cell needs hydrogen to work and described the two major ways for getting hydrogen: electrolyzing water through electrolysis or methane reforming, which is achieved through taking a methane molecule and blasting steam across it to break it down. Mr. Palmer explained the difference with the technology as it relates to size of the stack on the solid oxide being 17" tall whereas the cell size with the molten carbonate being 2'x4', with each being 9' high, and a box containing four of them to make a module.

Mr. Palmer explained that the solid oxide allows three different use modes: power generation mode, electrolysis mode, and energy storage mode. He noted other factors to consider between the three are efficiency and heat value. He noted that solid oxide runs very hot.

Basic applications include combined heat and power, according to Mr. Palmer. Mr. Ulevicus requested Mr. Palmer review the molten carbonate option. Mr. Palmer noted that one of the greatest applications of molten carbonate is at a wastewater treatment plant especially if there is a digester at the plant, explaining that with a digester, there is a methane offtake from it. He pointed to an example out in Riverside, California where a 1.4-megawatt-rated fuel cell is run and the site is given 1.4-megawatt worth of power, the digester gas runs the unit, and the heat is provided to run the digester. Additionally, hydrogen from this fuel cell runs their fleet of vehicles, according to Mr. Palmer.

Mr. Palmer reviewed how the fuel cell can function to capture CO_2 and run exhaust of existing boilers through fuel cell to act as a scrubber, to limit the emissions, getting it down to almost nothing.

Mr. Ulevicus spoke about the value of supplementing with wind, solar, and fuel cells. He explained why he favors fuel cells, as it relates to the environment, noting the benefit of redeveloping a brownfield and being able to get those credits and the output on a small footprint. Ms. Perga noted that there are solar panels, with a life expectancy of twenty to thirty years, at the school at which she is employed. Her observations have included maintenance of the inverters and occasional panel replacement, too. She questioned how fuel cells compare with that in terms of maintenance and longevity. Mr. Palmer noted that efficiency is lost over time. He noted that the fuel cells installed in a stack do need to be replaced every so often. He reported that the molten carbonate fuel cells run at about a seven-year stack life and that the solid oxide cells run at about a five-year stack life but can be "hot-swappable" (replaced while the unit is running).

Mr. Stankov queried what this commission might do to support this type of energy technology initiative for the town of Winchester. Mr. Palmer noted that the first step would be with goal identification. He explained that if the goal of the town is to merely reduce cost, then fuel cells are not the option. However, if the goals of the Town were to reduce cost and impact the sustainability goals, then that is a different matter.

Noting how she had heard that the biogas produced by Winchester's wastewater treatment plant is moist and laden with particulate matter, Ms. Perga questioned whether Mr. Palmer has had to deal with that with other wastewater treatment plants. Mr. Palmer confirmed, explaining the infrastructure that preconditions the fuel. He noted that there is a separate skid of equipment that cleans the gas before it is put into the fuel prep section. Typically, so long as the gas emitted from the digester is a 55% methane content, it is not a problem, according to Mr. Palmer.

Ms. Hill questioned whether it was at all practical to install fuel cells on roof tops, such as in a dense downtown area. Mr. Palmer explained that fuel cells cannot be installed on roofs, due to their weight. Mr. Ulevicus reported that 93% of a fuel cell is recycled upon end of life and put back into commerce. He explained it is not buried in the ground the way solar systems or windmill blades are. Mr. Ulevicus and Mr. Palmer both concurred that the best location for fuel cells is on the ground.

Ms. Hill questioned whether there are any cons, or dangers, associated with fuel cells. Mr. Palmer indicated that they are as safe as any other generation source that is out there, noting that they are certified by all of the safety organizations. One con might be the cost, according to Mr. Palmer. He noted that they are not cheap. He also indicated that some might take issue with the aesthetics. His recommendation, however, was to view the one at Trinity College in Hartford. He recommended a fence or wall around it, noting that they are so quiet, no one would know it was there. An important consideration is to remember that they are generators and will always generate, according to Mr. Palmer. He also noted, however, there are savings to be derived from the State's net metering credit program.

5. OFFICE PAPER RECYCLING:

Mr. Stankov confirmed that all of Town Hall is now recycling with the 2nd floor beginning the week of this meeting and the remaining Town Hall and Police Department beginning the following week.

Mr. Kelly reported the hiring of a Director of Economic Development. He indicated that often Conservation Commissions and Economic Development Commissions are at odds with one another. Mr. Kelly suggested that needn't be the case and recommended that ED Director Ted Shafer visit the next meeting.

Ms. Perga questioned whether commissions are meeting in Town Hall now. Mr. Kelly indicated that it was the choice of the commission on where to meet.

Leeane Marvin, of Winchester, explained that she was seeking a grant through the Farmington River Coordinating Committee and is proposing a clean river initiative in town, especially where the Still River and Mad River meet. She reported that she was seeking to initiate a town-wide clean-up and/or a tree planting or

raingarden in that area. Ms. Marvin indicated that there was not a deadline for the grant application but was seeking the support of the Town. Ms. Hill suggested including that as an agenda item for the next regular meeting. Ms. Perga noted that the Friends of Main Street (FOMS) undertake a similar event on Earth Day, noting that she will put Ms. Marvin in touch with Candace Bouchard of FOMS.

6. UPDATING EDC MAPS:
No business was discussed.

7. WHITE PAPER – RECYCLING FOR PROFIT:
No business was discussed.

8. EV SIGN ON 398 MAIN STREET/EV CHARGING/MAPPING APP:
No business was discussed.

9. UPDATING SUSTAINABLE CT GRID:
No business was discussed.

10. ADJOURN.
MOTION: Ms. Perga, Mr. Platt second, to adjourn at 6:19PM; unanimously approved.

Respectfully submitted,
Pamela A. Colombie
Recording Clerk