



TOWN OF KINGSTON
Office of the Sewer Commission/Wastewater Department
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Kingston, MA 02364

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Elaine A. Fiore
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January 7, 2010
Sewer Commission at Green Energy Committee

The following is a summary of the discussion of the meeting and is not meant to be all inclusive. For further information regarding this meeting or the wind turbine project, please refer to the Green Energy Committee and their minutes for January 7, 2010.

The Sewer Commission attended the meeting of the Green Energy Committee this evening to learn more about the status of the wind turbine project and the siting of the turbine. Members in attendance were Elaine Fiore, Peter Cobb and Thomas Taylor. Also in attendance for the meeting from the Green Energy Committee were Eugene Wyatt, Mike O'Meara, Pine DuBois, Antoine Nessralla and Mark Beaton. Other Town attendees included Town Planner, Tom Bott, Town Administrator, Jill Myers, Selectmen Dennis Randall, Sandra McFarlane, and Richard Arruda, Planning Board member Ron Gleason and Streets, Trees and Parks Superintendent, Paul Basler. Daniel Sheehan of Riverside Drive was also in attendance.

Mr. Beaton called the meeting to attention at 7:04 PM. Stephen Wiehe represented Weston & Sampson and was introduced to those present by Mr. Beaton, as were Tom Bott and Jill Myers. Mr. Wiehe reviewed site constraints diagrams and setback requirements. He pointed out that the Wastewater Treatment Facility (WWTF) and Transfer Station were not treated as public ways. Constraints were based on a total estimated turbine height of 400 feet and a setback requirement of 1.5 times the height or a total of 600 feet. Existing and proposed uses of the area were taken into consideration, such as the slip ramp being proposed by Thorndike Development. Figure K of the Constraints diagrams was displayed on the overhead screen. Mr. Wiehe explained that the three green areas were found to be in compliance with all of the setback requirements and had potential for siting a turbine. Mr. Beaton commented that the top, triangular green area is a vernal pool site and is also 80 feet in elevation lower than the WWTF/Transfer Station site. The WWTF/Transfer Station site is thickly populated. The landfill site is open space and legislation is in place that makes this site favorable. He also stated that the WWTF/Transfer Station site has issues with the turbine blades hanging over the roadways and activity taking place beneath them. The landfill would require breaking the cap on the landfill but the State is now encouraging the use of landfills for turbines. Mr. Wiehe continued that Hull 2 is on a capped landfill that also has no bottom liner. Such footings are deep pile installations. The cap is cut, laid back down and sealed around the footing. It seems credible to look at the landfill site. Mr. Sheehan asked how far down into the landfill the footing would have to go. Mr.



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Wiehe estimated that it would be about 60 feet. Mr. Beaton reminded everyone that this was a business plan and asked what additional cost it would be to construct the footing on the landfill. Mr. Wiehe estimated it would cost about \$100,000.00 to \$150,000.00 extra. Mr. Sheehan commented that it would be a much less hazardous site for a turbine. Mr. Basler asked if utilities would be placed above or below the cap on the landfill. Mr. Wiehe replied that the utilities would be placed above the cap. Mr. Basler asked if it would be possible to place additional turbines on the landfill and Mr. Wiehe replied that no additional turbines could be placed on that site. Mr. Sheehan asked what other sites had been looked at for locating a turbine and he was told that only the three sites shown in green had been looked at.

Mr. Wiehe went on to explain that this project is considered a small behind the meter application. Manufacturers are not always eager to supply a single turbine, but with the slower economy some are now willing to do so. He mentioned several turbine options in addition to the Danish Vestas models and that there are manufacturers in Canada, India and so forth. Kingston wants the manufacturer to be reputable. The constraints have been sent to 10 manufacturers to see if they would support this project. Vestas will likely respond with procurement questions. The usual project requires a 10% to 20% deposit, with 50% being paid by a certain milestone, 75% before delivery, and 90% to 95% before turn over. A 20% deposit would be about \$785,000.00. Mr. Sheehan asked about Vestas plants in Colorado. Mr. Wiehe said those plants were not in production yet. He continued and stated that the Falmouth project was 98% complete and that are commissioning it now and plan to dedicate it next week. Vestas will not warrant a machine unless you sign an O & M agreement with them. The contract is always cheaper in the early years and increases toward the end of the life of the turbine. It would be a 20 year agreement. Mr. Gleason asked how many responses had been received so far and was told that to date only three had been received. Mr. Gleason expressed concern about purchasing a turbine from a foreign country such as China and asked where the parts for the Vestas turbines were made. Mr. Wiehe said that some parts are made by Vestas in Denmark but some come from all different parts of the world. Mr. O'Meara commented that Falmouth had taken one of two Vestas turbines from the State. What happened to the second turbine? Mr. Wiehe said that he understood there had been a list of those interested in the second turbine but that it is now promised to someone.

Mr. Beaton discussed that the next step was to choose a site. GE had flat out said no to the proposed site. If the Committee chooses a site then Weston & Sampson can move forward with the building permit and ZBA application. Once you have a permitted entity the project would be closer to being capable of writing a check. The Committee needs to get the ZBA application in place to be able to negotiate with manufacturers. The project expects to receive 2.4 million dollars in



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renewable energy credits. Mr. Bott added that if the Committee chooses the landfill site then Weston & Sampson would analyze the site to determine what model turbine would fit it. Mr. Wiehe stated that DEP is encouraging development of renewable energy on landfill sites. Manufacturers want a clear area below their machines. They want a site that won't hurt anyone with ice shed, blade fracture or catastrophic failure. Although very rare it has to be considered. They also want a no access and no activity area below the turbine. The normal clear area is 1.5 times the height of the turbine (hub height plus rotor diameter X 1.5) for ice shed. Rte. 3 would not meet this requirement. Ice shed does occur and can fall off of the blades. It has the potential to be large. Vestas' technicians are not allowed to approach a turbine if ice is on it. They must wait until it melts and falls to the ground. The higher the quality of the machine, the higher the safety standards. Mr. Basler asked if DEP would determine what the clearance area surrounding the turbine would be and he was told that the Town would decide. Mr. Arruda asked who would approve the use of the land. Mr. Beaton replied that Town Meeting has approved the Wind Turbine Overlay District already. Mr. Randall reminded the Green Energy Committee that they are an advisory committee and cannot proceed without the approval of the Board of Selectmen. The Board of Selectmen will have to give approval of the turbine. Mr. Beaton and Ms. DuBois stated that they would seek Town Meeting approval.

Mr. Wiehe discussed that it had taken Falmouth 7 years to plan and construct their turbine. Mr. Basler asked when Kingston would build a turbine. Mr. Beaton replied that the next step is to ask Town Meeting for bonding the turbine, then the RFP process. It would be about 2 years away. Mr. Wiehe commented that construction would take about 12 months. Mr. Basler asked if there was an additional cost for special machinery required to work on the capped landfill. Mr. Wiehe stated that there would be special requirements such as mats that would be brought in and spread over the ground to spread the load of the equipment evenly and some other considerations that will add to the cost. Mr. Basler asked about interconnection. Mr. Wiehe said that there would be a point of interconnection but there would not be a substation, only a transformer approximately the size of the table he was sitting at (about 6 feet by 3 feet). There would probably be an overhead line. The WWTF probably has 3 phase power already. Circuit breakers and metering would be needed. He did not say where the circuit breakers and meters would be located. Mr. Beaton added that the GEC has a grant to look at interconnection. They expect the work to cost about \$10,000.00.

Mr. Wiehe stated that Vestas might have a new model V90 turbine coming available soon. It would be slightly larger than the V80 but it would still be within the size limits Kingston would need. Mr. Randall asked who would be responsible for maintenance costs. Mr. Beaton stated that maintenance was covered in the



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budget and that there will be a contract for it with a cost of between \$10,000.00 and \$25,000.00. Mr. Wiehe commented that Falmouth has a contract with the manufacturer and that they monitor it remotely from Oregon and perform required maintenance. Ms. Fiore asked if it was possible to get the financials for the Finance Committee now. Mr. Beaton said they would be working on this and hope to have the information by Town Meeting. Mr. Wiehe added that the KEMA numbers were pretty close. Ms. McFarlane asked what the GEC would be asking for at Town Meeting. Mr. Beaton said they were holding a spot in case they have the estimates needed in order to ask for bonding the project. If we don't then we will not move the article. Mr. Wiehe said he felt the information would be available by then and that the cost would be between 4.5 and 5 million dollars. Ms. Fiore stated that the Finance Committee would like the numbers for a private operation and a public operation. Mr. Wiehe stated again that the KEMA report was pretty accurate for the models they had screened. He went on to explain briefly what private and public benefits and incentives would be. Mr. Wiehe discussed that Plymouth had awarded a project to CCI and that Cohasset and Fairhaven also have development project pending. Ms. McFarlane asked if the land would be leased to a developer if it were a private project. She was told that it would be leased. Mr. Wyatt asked if there was any advantage to putting a turbine on each of the 3 potential sites. Mr. Beaton said he felt they would need additional applications for more turbines. The State has approved one turbine. Mr. Wiehe said that there would be no advantage to putting different size turbines up. It could probably be done but the wind flow from one turbine to the next would decrease the efficiency. Mr. O'Meara asked if there wasn't a minimum distance requirement that must be met between turbines. Mr. Wiehe said that there was and that you probably could not meet that requirement based on the 3 sites shown.

Mr. Beaton spoke about the utility companies. They are only required to take up to 1% of the energy generated by turbines. After they meet the 1% they do not have to guaranty the same rate. That is the reason for the urgency for this project. Mr. Wiehe added that it would be 1% of peak load. Once the utilities meet the 1% peak load they don't have to give the best rate and can wholesale the energy. They may or may not be at peak when Kingston submits an application.

Mr. Bott asked if the Committee proceeds with the landfill site if there is any reason why they could not install a solar array on the remaining space. Mr. Wiehe said he did not think there would be any restriction.

This portion of the GEC meeting ended at approximately 8:00 PM.

Suzanne Richards
Administrative Assistant