

**TOWN OF BEDFORD**  
**April 25, 2019**  
**ENERGY COMMISSION MINUTES**

A meeting of the Bedford Energy Commission was held on Thursday, April 25, 2019 at the Bedford Meeting Room, 10 Meetinghouse Road, Bedford, NH.

Present: Jeff Kerr (Chair), Chris Bandazian (Town Council Liaison), John Schneller (School Board Liaison), Bill Foote (School Board Liaison Alternate), Bing Lu, John Russell, Sarah Braese

Absent: Andrew Gillis (Vice Chair), Catherine Rombeau (Town Council Liaison Alternate)

I. Call to Order – Chairman Kerr called the meeting to order at 7:02 PM.

II. Quorum Count: 5

III. Approval of Minutes

a. 7/2018, 8/2018, 9/2018, 10/2018, 11/2018, 1/2019, 2/2019, 3/2019

Ms. Braese noted a minor typo that needs correction in the July 2018 minutes on the bottom of Page 9 where it should read “They’re handling the installation” rather than “They’re handing” as it currently reads. On the September 2018 minutes at the bottom of Page 6 it should read “In summary, Chairman Kerr stated that as part of the planning process the Town should get close to net zero” rather than “closed to net zero” as it currently reads.

Chairman Kerr had some minor typos in the July 2018 and February 2019 minutes that he will submit to Dawn Boufford, Executive Assistant Town of Bedford so the minutes may be corrected on the Town website.

**MOTION by Mr. Russell to accept the minutes with the above-mentioned edits. The motion was seconded by Mr. Foote. Two abstentions: Mr. Schneller and Ms. Braese. Vote taken – all in favor. Motion carried.**

Chairman Kerr introduced the two new members of the Energy Commission: John Schneller and Sarah Braese. Mr. Schneller (School Board Liaison) and Mr. Foote (School Board Liaison Alternate) both represent the School Board, but will only have one vote on the Energy Commission. Mr. Schneller will vote, and any time he is absent Mr. Foote will vote as the Alternate. There may be another member joining the Energy Commission next month.

IV. Reports of Members and Committees

a. Legislative update

1. Group Net Metering 1MW - > 5MW

A. Affects the ability to lease out landfill for PV

Mr. Bandazian circulated the list of bills to the members of the Energy Commission. The bill of primary interest to the Energy Commission is the net metering bill which increases the cap, so that

we might get some revenue out of the landfill. The Senate amended the House bill, and everything looks very similar. The bill will go to the Governor next, and we will see what happens. Chairman Kerr shared that last time the Governor vetoed two bills (the biomass bill and one on group net metering) and wondered if something similar might happen again. Mr. Bandazian feels that the bills are not lumped together this time, so there may be a better chance of them passing.

Also of significance is Senate Bill 122 which concerns a proposed increase in the renewable energy fund dollars available to school districts and municipalities from \$2 million to \$5 million. It is the same fund that was used to fund Bedford library's geothermal system. Mr. Bandazian and Mr. Foote discussed the type of things the Bedford School Board may be able to focus on to get a grant from this fund. If there were projects that didn't pass or get funded through the school bond they might be appropriate for the grant cycle in September. If the increase in the renewable energy fund passes, the Bedford School Board should look through the items in their bond to see which have the best chance for the grant process and which might meet fund's criteria. Mr. Bandazian advises the School Board to have their advisors assist in the grant and look at things such as how much CO<sub>2</sub> would be reduced and converting dollars to CO<sub>2</sub>. The air handler at Riddlebrook School may not be a good candidate because it is an end of life replacement, but something like PV on buildings may be a better candidate. The School Board should look through the list with the goal of preparing for the grant in by early September.

Lastly, Mr. Bandazian reported that the update to the 2015 building codes including the energy conservation codes appears to be alive and moving through the legislature.

b. School projects

Mr. Schneller reported that since the energy bond didn't pass and the default budget passed, the capital expenditure program money has to be replaced before the School Board can engage in doing very much. Mr. Foote did note; however, that the School Board is looking into doing the lighting improvement out of cash flow because the rebate was going to be more than the cost of the material. There will be no work taking place this summer and possibly into next summer, though. Mr. Bandazian asked if there was a link to the energy study that was done. Mr. Foote thought it should still be on the School Board's web page.

V. Special Orders – None/No reports.

VI. Old Business

a. Green Business Award

1. Social media promotion update???

Mr. Joy was working on this initiative but moved out of town and had to resign from the Energy Commission. Ms. Braese volunteered to take responsibility for this initiative going forward. Chairman Kerr explained to her what was involved, which mostly is promoting the Green Business Award and getting businesses to apply. He is also hoping to find someone to be a back-up admin to the Facebook page (<https://www.facebook.com/EnergizeBedfordNH/>) where he and Mr. Bandazian have been posting items of interest.

b. EV Charging Station Encouragement Project?

Mr. Joy was also working on this initiative to promote electric vehicle charging in Bedford. This project was born out of the funding available from the Volkswagen diesel scandal. Ms. Braese also volunteered to take responsibility for this initiative. She shared with the group that Google Maps is now adding an electric vehicle component to their maps and feels electric vehicle charging stations will become more and more prevalent.

c. Tour of recycling and incineration facilities

1. Transfer Station Article

Mr. Russell reported that this week he caught up with Steve St. Pierre, the Assistant Foreman at Bedford's Transfer Station (Jerome Spooner, the Environmental Coordinator, was out on vacation). Any day of the week after 12:00 noon is ideal for them to provide a tour. They are opposed to doing a tour during the evening.

Mr. Bandazian reported that the Town Council is looking to see if there is something else we can extract from single stream that makes economic sense. Jeff Foote, the Director of Public Works, has been looking at composting. Even if we get 5-10% compliance for composting the Town could reduce the cost by \$30,000. The other major thing to look at would be paper.

In full disclosure, Mr. Schneller stated he has licensed a technology from India that can accelerate the composting process and has an economic interest. The problem is that he is trying to get technical specs from India, but having difficulty communicating with them. Once received, he will share with Jeff Foote.

d. Landfill Solar

1. Waiting on HB 365 and SB 159 – discussed in Legislative Update (above).

e. Solsmart

1. [thesolarfoundation.org](http://thesolarfoundation.org)

A. Recognition after landfill PV is complete

If we are able to move forward with landfill solar, this will be the placeholder to report more.

f. New Solar Up campaign

1. Was the survey sent out? – No report was given in Mr. Gillis's absence.

g. Eversource bills to calculate demand charges

1. Bing looking at demand charges

Mr. Lu called Eversource to get an understanding of exactly how they bill demand charges and learned that demand charges are calculated based on a 30-minute period (not a 15-minute period). The meter is not smart enough, so Eversource does not have the records for us. The remaining solution is to go to the sports fields directly and calculate for ourselves. Mr. Lu will go to the any one of the fields for a couple of hours one night and read the meter every 30 minutes to collect the needed data. He should go through Jane O'Brien at the Parks and Recreation Department to make arrangements.

Chairman Kerr asked if he had looked at the library or the pool to see if we are paying demand charges there. If someone can send him a bill, Mr. Lu would be glad to look at it.

The Town pool is the highest most intensive energy consuming facility the Town of Bedford has. Chairman Kerr questions if putting a PV array on the pool would benefit us if we are still paying demand charges.

- h. Conduct of officials link on Google Group (posted)

Chairman Kerr posted this on the Google Group for new member review.

## VII. New Business

- a. Approval of Minutes – Already handled earlier in the meeting (See Section III.)
- b. Election of Chair and Vice Chair

Last month there was no quorum, so election of a Chair and Vice Chair for the Energy Commission was tabled. Chairman Kerr called for nominations.

**MOTION to elect Chairman Kerr as Chair of the Energy Commission by Mr. Foote. The motion was seconded by Mr. Russell. Vote taken – all in favor. Motion carried.**

**MOTION to elect Mr. Russell as Vice Chair by Mr. Foote. The motion was seconded by Ms. Braese. Vote taken – all in favor. Motion carried.**

- c. Change Transfer Station Policy to put Recyclables in Solid Waste

Chairman Kerr explained that due to China's national Sword Policy China is closing off their importation of recyclables. This has come about because the Chinese government was embarrassed into changing their policy because of documentaries showing people living in the recycling areas in squalid conditions. The Chinese economy is large enough that they have their own domestic recycling capabilities and supply, and they really don't need to import more from the rest of the world. India and the Philippines have also stopped importing recyclables because they were being inundated with items China wouldn't accept anymore. Now the rest of the world has to figure out what to do with all of the recyclables.

Mr. Foote feels China was hiding a problem the world wouldn't address but feels sterile single use packaging is a lifesaver because we can't go back to using glass, and shipping paper around doesn't make sense because of the weight and transportation fees associated with it. There's more upside to using plastic, but the problem is plastic needs to be completely recycled or diverted into something else, and that diversion no longer exists. It seems appalling that we wouldn't be recycling plastic anymore, but it is hard to justify spending \$30 per ton for nothing. There is a small market of clean plastics going back to China. These plastics are clean enough to be serve as feedstock and could be used in the United States. He cited the video that Mr. Schneller posted for the Energy Commission about Coke's use of Polyethylene terephthalate (PETE). The PETE that Coke uses is all self-contained in silos however. Whatever they use comes back in. Coke is not going to accept any outside recycling from other sources. There are other people who would, but the cost of sorting is so high that it makes it an economic struggle to make it pay versus putting it in a hole. But now the holes are going away.

Mr. Schneller has just begun researching this and spoke with Bill Duschatko (Bedford Town Council) and learned there was a Portsmouth, NH company, Poly Recovery which has a zero-sort facility (meaning you could bring them anything, and they would sort it, clean it, chop it into little platelets, melt it and create pellets). He called Poly Recovery's phone number and only got disconnect tones and he could not find a live website, so it appears they are no longer in business.

He is willing to work with Mr. Duschatko, Mr. Bandazian and Jeff Foote (Director of Bedford Public Works) to see if there is another company out there who does the same thing Poly Recovery did before we simple throw our plastics in with the trash to be burned. The problem, according to Chairman Kerr is that a lot of the domestic recyclers went out of business because they couldn't compete with China. At one point in time China was paying premium dollars for the recyclables. No one else could match that, and a lot of domestic companies went out of business. Now China has stopped accepting recyclables, the other companies are out of business, and there is no place left for it to go. Some Chinese companies are coming in and buying the bankrupt companies, investing in new machinery, and trying do things domestically in the U.S.

Mr. Bandazian recalled in a prior Energy Commission meeting an Iowa company that converted plastic to diesel fuel and used 20% of the byproduct (which is methane) to run the plant was discussed. Mr. Gillis was looking into it, but company was apparently overwhelmed with inquiries. People will pay \$100/ton to take their plastic, and they will pay for the diesel fuel so Mr. Bandazian feels someone will step in to fill that space.

Mr. Schneller asked if transportation by rail was economically viable. Mr. Foote replied that you would establish your pilot plant/skid plant in the location, and then the plastic would be sorted, shipped, thrown into the pyrolysis plant, and we would collect the diesel and it will pretty much run by itself; but we would probably be taking plastic from other locales. Mr. Schneller asked if there was a regional solution, then. The technology is pretty basic, so scaling would not be a problem Mr. Foote said, but the problem is that many people wouldn't want a big plant in their backyard. Based on the year-to-date data that Mr. Bandazian provided, Mr. Foote indicated that Bedford's waste stream is 20% glass (which is being sorted out), and metal, plastic, and paper. What's needed is a baler for the paper. Mr. Schneller indicated there is a microbial solution that can compost paper celluloses and chipped up wood very well. That would be a composting solution, but Mr. Foote feels for immediate use if we got rid of the compactors in Bedford and brought in 2 balers and diverted the metal out; the metal would have practical value. He calculated that if we keep comingling the steel and aluminum out, we pay \$3,000 just on the metals over two months. We would have made \$3,700 if we scrapped the metal out – there is a \$6,000 swing there. If we do the same thing, and assume plastic is pulled out and we are left with nothing but paper; the comingle price to dispose of it was close to \$23,000. We would have made \$5,000 and there is a \$27,000 swing there over two months. If we look at it over 12 months we would have made \$22,000 on scrap metal for the year or we would have paid \$19,000 to dispose of it. Over 12 months we would have made \$31,000 on paper but if we comingled it and paid the disposal rate, we would pay something like \$275,000.

Mr. Foote asked what the Town of Bedford pays for the comingle site of our waste hauling. Mr. Bandazian indicated that it fluctuates a lot, but the high was \$155, and it went down to \$103 last month. Mr. Foote asked if \$300,000 for handling recyclables is a rational number. Mr. Bandazian estimates that it's actually a little less than \$200,000. Bedford made 1,200 tons last year (about 100 tons per month)

Chairman Kerr asked if we wanted to propose making actual changes. Does it make sense to compost if we can make a profit off of paper and cardboard? Mr. Bandazian is unsure if we can make a profit off of paper. Cardboard is the only thing he knows to have value. The general classifications are: Newsprint, clean office paper, and cardboard - - but its likely most paper would not be clean paper. If we have free reign to do whatever we want, Chairman Kerr feels the first step is to decide whether we want to compost or separate and bale. If we decide to compost, then

everything other than metal, glass and plastic goes in there. The other option is to start separating and we would need to decide if residents do the sorting or if we have it sorted on-site or somewhere else. Mr. Bandazian feels the residents would have to sort it and cautions that we can only expect so many behavior modifications out of our citizens. We have already gotten them to separate out glass successfully, and we will be putting them on a new road this year. He feels plastic is so lightweight it doesn't matter much if it is single streamed or thrown in the regular trash because it's about \$6,000/year swing. He would rather have residents focus their behavior modifications on metal and paper. Chairman Kerr cautioned that we want to be careful about what we propose because we don't want China changing their mind 6 months down the lane and have to reverse decision or make changes every 6 months. Mr. Bandazian doubts China will change their mind.

Mr. Foote noted we had waste in separate streams in the first place, and then we started comingling which only added a labor component. If we were to advocate for sorting again that would only be supportive of the business model. If everything else is taken out and only plastic is left it may be a breach of the contract. If the plastic is pulled out and they are left with nothing but paper. They could pull out the compactors, bring in 2 balers and they would have a baled product and a metal product that gets taken away and their cost would probably plunge because the sorting would already be done, and it wouldn't need to go to the factory. Putting in balers would seem to be an immediate benefit. There would be an education component for the townsfolk get them used to pulling out the plastic, but we have been training them to diligently sort for years. Mr. Schneller suggests adding a tax dollar amount per household. Mr. Foote thinks it would be a profound tax avoidance. Steel or aluminum can be sorted easily with magnets. If we give them 3 distinct streams we make their lives much easier.

In all the articles Chairman Kerr has read successful recycling was all about making it as simple as possible for residents to sort properly. It must be very straightforward what to separate (for example: #2 plastic here, paper here, metal here and everything else is trash). That's the model we would need to follow. He asked if the Energy Commission wants to bring a proposal to Public Works to do what we are suggesting rather than composting. He asked what the schools are doing. Mr. Foote responded that everything (paper and plastic) gets hauled. The schools are independent of the Town. The schools have their own distinct contract from the Town.

When Mr. Russell started working from home in 2014 – his family measured every item of waste for a year. Basically 18.13% of the entire waste was compost, and 25% was paper– which is interesting.

Mr. Foote asked what the annual cost for hauling. Mr. Bandazian said it was about \$500,000. If Mr. Russell's calculations stand, that would mean \$100,000 would go away. Mr. Bandazian said we should assume 50% compliance – so that would mean \$50,000.

Chairman Kerr asked if we can do both composting and sorting. Mr. Foote feels it's a question of management, not possibility – we can manage anything, but the question is what the cost would be – can we afford the labor; will the market change? Chairman Kerr feels it is beneficial to get residents in the habit of sorting because then everything is sorted on the front end, and no matter what happens down the road with the market, everything has already been separated.

Mr. Schneller said the issue with composting food waste is attracting critters, but this can be contained if you use the right microbes.

Mr. Russell asked if PETE and high-density polyethylene (HDPE) could be recycled by ardent recyclers who would clean it first. Again, Mr. Foote said it is all a question of management. It's also a question of what the haulers want to do with it. Mr. Schneller said it is binary in the sense that if it is not clean they will not take it. He is unsure, however, what the exact definition of "clean" is (one quick rinse, or something more?). Chairman Kerr stated that contamination means the wrong items in the wrong bale. With the sorting mechanisms in place right now you can get to .5% or 5%. The standard China is looking for is .001% and they are even looking to lower it – so that is a "no-go".

Chairman Kerr asked Mr. Russell, Mr. Foote, and Mr. Schneller if they would like to investigate if there is someplace willing to accept this and put together a proposal.

Mr. Schneller shared that Bill Duschatko has done a lot of work and has identified a plastic block making plant in Maine. They crush everything down, heat it, turn it into blocks, and they have constructed a couple of bridges out of it. Chairman Kerr noted that companies are taking the #2 plastic (which has more integrity than #1 plastic) and making structural members out of it to replace timbers that are used in bridge-making that trucks and tanks can travel over. Mr. Foote noted this is what Trex (composite decking) is made of; however, Trex does not have the same structural integrity. Mr. Schneller will be in touch with Mr. Duschatko about a contact he received from Coke and will keep Jeff Foote in the loop.

Chairman Kerr feels we should definitely develop a proposal to Public Works. The Energy Commission would need to plan and work through everything including figuring out when the right time to make changes would be before presenting it to Public Works. The contract with the hauler runs through September 2021 or 2022. Public Works is always willing to listen to new ideas if there is money to be saved or made. We should run the things we are proposing by Jeff Foote to see how it works with his composting plans. There is a lot of land at the transfer station to do composting, but there is a question of through-put. That is why Mr. Schneller says he is so interested in the microbial solution. The mixed microbial solution accelerates the process and does not create heat.

Chairman Kerr suggested the Town could take the brush it brings to the transfer station and have it chipped up and burned to heat the Department of Public Works garages in the winter. If not, it could probably be composted. Mr. Foote fears composting may shut down from November through March. Chairman Kerr shared that there was an NPR story that Manchester uses a third-party contractor to take stuff down to Londonderry or Derry and it generates heat year-round. The material doesn't freeze. There may be an opportunity there.

Chairman Kerr thinks given the current status; we need to do something different. There is more that we can do beyond composting. Perhaps getting residents used to sorting things out and leaving it that way forever. Single stream made it easier for the consumer, but at a cost, and that time has passed. If we do something different in a simpler format and leave it that way then decisions can always be made behind the scenes about what should then happen to it. Mr. Foote feels we would just need to communicate to residents not to recycle plastic anymore and provide them with a bin for metal and then we are left with nothing but paper which is an easy conversion for the haulers to bring in balers instead of compactors at no cost to us and at benefit to them. Chairman Kerr feels it would first be interesting to see if there are local recyclers of #1 and #2 plastic or specific #'s of plastic, and tell residents to separate only paper in one location, metal in another, and only #1 plastic (or whatever #) – then it is easy to police and screen than to try and sort the plastic.

d. Using Brush at Transfer Station to Chip Up and Use as Heating Fuel

Chairman Kerr reported that this was a suggestion that was made to him. He's not sure how realistic it is, but if we start composting it's a better use of the brush than having to chip it, store it, dry it and use it for fuel. Using any resource you have at hand is always a good idea.

e. Looking at Other Town Solar Possibilities

1. Town Pool

2. Library Parking Lot

Chairman Kerr reported that if we are able to get the landfill solar going and we get a revenue stream going from it, the Town would like to use the money to pave roads, but if the Energy Commission could convince them to allow us to use the money to invest in other solar projects we could compound the revenue we are getting from the landfill and continue to reduce energy costs going forward. Any installation of solar on a roof requires you to coordinate the age of the roof, replacing the roof, and the life of the building; but fixed locations like the pool and the library should be analyzed for ground mount solar to determine the cost and whether or not it would make sense. The library has a geothermal system that has cut its oil usage basically down to zero, and decreased its electricity usage by 22%, yet it is still a big consumer of electricity.

Chairman Kerr is interested in seeing what it would cost to put ground mount solar at the town pool too. Mr. Bandazian feels if you are looking at ground mount at the pool the problem is that it is highly contestable land used for Old Town Day etc. Chairman Kerr indicated that he is talking about a different portion of the land adjacent to the building (so you can tie in electricity) in the grassy area to the northwest of the pool, and to the west of the building. He proposes adding a pergola to the west of the building that would provide much needed shade and putting solar panels on top of the pergola to provide power to the pool. The question is the cost. Mr. Gillis is a board member of Hillsborough County Area Renewable Energy Initiative (HAREI) a DIY barn-raising solar group that does its own solar installations; perhaps the Town could utilize volunteers to handle some of the tasks of installing solar in order to reduce costs.

The library would involve installation of a solar carport. Since it would need to be done on an asphalt parking lot – it wouldn't be conducive to volunteer work. If the RFP for solar at the landfill goes through we will receive \$26,000/year in revenue from leasing the land at the landfill for solar. Rather than putting that money into the Town general fund we could earmark it for solar projects. Solar panels cost about \$36,000; therefore, maybe 2 years of revenue from the landfill could pay for 100% of the cost to install solar at the pool. It would be much better doing everything behind the meter rather than group net-metering. Chairman Kerr calculates \$7,000 worth of electricity a year could be saved at the pool, which is a good thing. The Energy Commission could encourage the Town to do this using a smaller budget and show how it is cash flow neutral allowing us to then complete the library in stages over the course of years; and create the parking lot so that ground mounts can be added in phases year by year; and then mount panels on them as we go so that it can be completed in 3-5 years with no cash flow impact while also decreasing the cost of electricity at the library. Chairman Kerr would like to get this conversation started that revenue from leasing solar at the landfill could be used as seed money to do more solar projects that would reduce electricity usage over time and reduce the cost, thus freeing up more money.

Mr. Foote asked if there was any chance that the demand charge was higher than the consumption.

Chairman Kerr feels that is the question: If demand charges eat into that we will not be able to carry out solar and the financial outlay is not going to be as attractive.

Mr. Foote noted that the motors are enormous and would use that years' consumption to balance out the power usage not even taking care of the demand side. Mr. Lu stated that we would just have to find another energy storage system to take care of the peak power. Chairman Kerr suggested that might be something we would need to look into, as well.

Mr. Schneller feels it may be a tough sell to the Town Council. Mr. Bandazian feels it would have to support itself. That being said, Nashua has a revolving fund and it has done energy projects and saved money and some percentage of it goes back into the revolving fund. Energy savings would be generated, but there would be some cash flow issues and questions about what the return on investment is; however, \$26,000 isn't going to make a difference one way or the other to people if they get less than a penny off their tax bill. Not to diminish the fact that a penny here and a penny there adds up.

Chairman Kerr asked Energy Commission members to look at any of the town electric meters and see if there are any other good candidates for solar - maybe even a smaller project than the pool that we could incrementally build on using 1 year of revenue. That would be a way to build up the momentum for adding solar.

f. Survey of Other NH Town's Projects

Chairman Kerr reported that last Spring (around February or March 2018) he sent questions to other town representatives who got together for an energy meeting and he posted their email responses about interesting ideas and projects their towns were doing in the Google Group. He would like someone other than himself look through them and pick out ideas for projects that we might be able to do based on the successes some of the other towns have had. If another town has done something successfully it is better to pick their brains on what has worked and what did not work, rather than proceeding blindly by yourself. If we are able to get landfill revenue maybe PV might not be the answer and there would be some other energy project there that is a better use of the money.

Chairman Kerr asked if grant revenue could be used for PV projects. Mr. Bandazian affirmed.

VIII. Reminders: Next upcoming meeting is May 23, 2019.

IX. Adjournment

**MOTION to adjourn by Mr. Bandazian at 8:00 P.M. Seconded by Mr. Foote. Vote taken- Motion Passed**

Respectfully submitted by,  
Tiffany Lewis