



CITY OF DOVER

## ENERGY ADVISORY COMMITTEE MINUTES

Meeting Type: Regular Meeting  
Meeting Location: City Council Chambers – 288 Central Ave, Dover, NH  
Meeting Date: **March 22, 2007**  
Meeting Time: **5:30 pm**

Members in attendance: Joyce El Kouarti (Chair), Eric Steltzer, Randy Overbey, Donna Layton.

Also in attendance: Mike Joyal (Committee Staff Advisor & Dover City Manager), Clay Mitchell (Epping Town Planner), Tom Moody (PSNH), Doug Glennon, Joanne Eaton

**Motion made to move minutes.** (Donna Layton, 2<sup>nd</sup> by Randy Overbey). Passed U/A.

Clay Mitchell was introduced. His background is in Environmental Law from Vermont, current PhD candidate at University of New Hampshire and current town planner for the town of Epping New Hampshire. He combines the three disciplines into his work. Law, Policy and Science.

He began by asking what the role of a community is towards being sustainable and highlighted the protection of the global environment. He followed up by asking why municipalities aren't doing more to take care of the situation. In Epping, the planning board decided to do something.

They came up with Article 22, an Energy Efficiency ordinance, and placed it on the town warrant in March 2007. The ordinance was similar to LEED certification. There is a point score system which is based off of the square footage of a building. The larger the square footage, the more points the building will need. Points are given based on a variety of energy efficiencies. Some examples include HVAC efficiencies, building orientation, reduction in water usage, source of building materials, daylighting and production of onsite electricity. Specifically there was importance stressed on onsite generation which generally is not included in the limited number of green ordinances around the country. The ordinance left room for onsite generation of energy to include solar, wind, cogeneration and any other innovative method. They wanted to get developers to think about energy efficiency at pre-design stage. The ordinance followed many components of LEED certification. Steps were taken to simplify the point system for a small community. By simplifying the point system, it would be easier for residents to understand and for developers to adhere to. There was also a concern to be gentle with the introduction of the ordinance since Epping is the first small community in the nation to take this step.

In researching the issue before the ordinance was placed on the warrant, the Epping Planning Board looked at two developments in town. First was the Toyota Dealership. Second was the Goodrich Brick Company. Both organizations saw a benefit in energy cost savings which will benefit them in the long haul. They also met with people from Jordan Institute and with Steve Winter from the US Green Building Council. Additional a review of the internal revenue codes was done.

To get the ordinance passed, a massive education campaign was done. One misperception that was out there was that this ordinance was going to ban oil as a source of heat. This was corrected in educational outreach. The ordinance was passed 700-606 in March 2007.

Mr. Overbey opened the question period with a question on having a higher standardized system so there isn't differing building codes from one town to another. Mr. Mitchell responded



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that since Epping was the first community, they were making the steps. They didn't want to use the overall LEED certification standards because of some of the complexity. Instead they mirrored their standards to LEED certification and simplified them to make it easier to understand. Mr. Mitchell stressed easy steps such as appropriately sized HVAC systems and often times constructions have HVAC systems that are too big for their need.

The Green Energy ideas have infiltrated through their planning board. Planning Board members are now discussing with outside business means in which they can be more green. One example Mr. Mitchell presented was a planning board member who was dining at Applebee's restaurant. He noticed they used water flushing urinals and asked the manager on duty if it was possible for them to convert over to flushless urinals. The manager communicated with corporate headquarters and is in process of installing the urinals. Once installed, they will save the restaurant over 40,000 gallons of water a year.

Another town which has implemented something similar to Epping is Babylon New York.

The next steps Epping is taking is to look at building a green municipal building. Ideas they are considering are a new Town Hall, the SAU school system, and recreation buildings. They are also looking at upgrading their boiler systems and considering cogeneration boilers. This technology uses extra heat created in the boiler to power a generator which creates electricity. Other ideas include window upgrades and lighting efficiencies.

The funding which as started the program is estimated at \$75,000. This money has been donated to the city of Epping by developers within the community. There is a great deal of importance in creating a partnership between the city, developers and the residents to get these types of measures passed. It was great that Epping already had two nonresidential developments (Toyota and Goodrich) which were utilizing energy efficient constructions.

Another next step is to consider some sort of credit system. Essentially developers can opt to purchase credits which will suffice for the points they need to adhere to the measure. Money generated by the town through the sales of these credits would be earmarked for energy efficient measures that they could construct in municipal buildings.

The discussion turned to Walmart in Epping. It was noted that they used some measures to be more energy efficient, including having sky lights to day light the retail area. Mr. Moody from PSNH mentioned the difficulty it has had with working with Walmart. Walmart has aggregated their electricity load in New Hampshire to compete on price. They spend approximately 18 million on electricity per year. Mr. Moody continued to speak about the construction of the Walmart in Epping. When it was being constructed, PSNH energy auditors gave a review of the building and suggested measures to be more energy efficient. However, none of those steps were taken. There is a difficulty working with Walmart because all of their decisions are made down in Arkansas.



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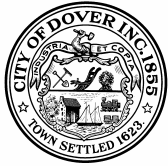
There was continued discussion about the need for PSNH to work with municipalities in helping to provide guidance to nonresidential developments in energy efficiency.

Next there was discussion on Senate Bill 140 which would allow PSNH to build renewable energy generation projects. Mr. Mitchell mentioned some examples of renewable energy projects and credits offered in Washington state. This included that utility companies who built new renewable projects would get double the renewable energy credits to apply to their Renewable Portfolio Standards. In New England, PSNH is the only utility which is allowed to own electric generation. Mr. Steltzer asked what sort of entities could own an electric generation facility. Mr. Moody responded that anyone could go through the process to become recognized underneath the PUC as a utility and as such could own an electric generation facility. Mr. Steltzer asked if this included cooperative groups, in which Mr. Moody responded yes but the costs to become recognized by the PUC were extensive. RSA 162 speaks to the issue of energy facility evaluation, siting, constructing and operating.

The discussion turned to cogeneration and it's application in Southwestern Connecticut. It has proven successful for municipalities there. Mr. Mitchell provided a short background on cogeneration units. In essence they take the excess heat created by a boiler system and use that heat to power an generator to create electricity. They are much more efficient than other boiler systems. Over 20,000 have been installed in Europe and an additional 20,000 have been installed in Japan. Epping is considering putting them into their municipal buildings and their payback would be instantaneous because of the \$75,000 developers have donated to the town. In general the break even point on these pieces of machinery are 3-5 years. Two individuals who have helped Epping in their energy analysis have included: Matt Ferry at Pan American in Connecticut and Waldron, an engineering firm out of Exeter. They are hoping to put these cogeneration facilities into the buildings by next winter's heating season. By inputting the cogeneration facilities, Epping is hoping to offset 14-16 tons of carbon dioxide emissions. This would be equivalent to the amount of carbon dioxide that the Epping police department emits. UNH has experience success with cogeneration as well. They have a 7.5 MW facility. Another contact person for the Dover Energy Advisory Committee to consider contacting is Steve Floyd at Ingersoll Rand out at Pease Tradeport Center.

Mr. Mitchell suggested to keep him and the town of Epping in the loop with the progress that the Dover Energy Advisory Committee makes. Mr. Mitchell left the meeting.

Mr. Moody from PSNH presented his information from a utility's perspective. His opinion was to be careful with energy ordinances similar to Eppings because there are safety issues along with other perspectives to be concerned about. He is not a proponent of microturbines which are used in cogeneration. There is a lot of money involved in these systems. He highlighted PUC Rate-B and mentioned that this backup rate was expensive. If the cogeneration facility didn't produce the estimated load, municipalities would need to purchase electricity at the more expensive Rate-B price. Mr. Joyal mentioned that this was the case with the City of Dover's experience with cogeneration facilities in the city hall. The engineering firm which the city had worked with had suggested these devices but the city did not see the energy savings expected



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and they had to purchase Rate B electricity. Fortunately for the city, they had a performance contract with the engineering firm and the engineer firm presented a check to the city on an annual basis for the extra costs that were experienced.

Mr. Moody continued with information on electricity and utility. In 2000, the state of New Hampshire became a deregulated electricity market. It mandated the PSNH could not sell generation when market equals current price. Mr. Moody felt that this would never occur because the current retail price of electricity was quite a bit higher than the rate PSNH was offering and could offer in the future. He mentioned that there is a Systems Benefit Charge (SBC) on everyone's electric bill. This money is collected by the PUC and distributed to the electric utilities. Approximately 19-20 million is collected annual. This money goes into two programs. The first is to help fund low income programs. This program includes subsidies, energy audits, and conversion funding for households who qualify. The second program is for small businesses, including municipalities. These programs include services such as energy audits. Also he highlight large business programs. These included companies and municipalities who are in the 100 Kilowatt (KW) category. They offer rebates to through this program which energy efficiency. For Municipalities and School districts, they have a program called the Smart Start Program. This is a loan program where no money is required up front for the installation of energy saving measures. PSNH will cover the costs of the installation. The municipality will continue to pay the same rate, prior to the installation of the energy saving devices. PSNH will then use the extra amount realized from the energy savings to pay for the cost of installation. Once the cost of the installation is recovered, the municipality will then pay the lower energy price to the utility.

A comprehensive energy audit can be done by PSNH. This is free and it is covered through the SBC money collected. They will look at electricity used in lighting and HVAC. It would take approximately 6-8 months to complete due to the backlog of requests. If the city were to higher their own consultant to conduct the audit, it would cost approximately 10-15 thousand dollars. The question was asked whether PSNH would subsidize the costs and Mr. Moody responded no.

Streets lights and traffic lights were discussed next and they are considered a different program. The idea is to convert old incandescent lights to LED lights, which are more energy efficient. Rather than using 135 watts, they will use 14 watts. In this case PSNH will own the lights and the city is assessed a \$125 charge per light per month. Mr. Joyal noted that the city has converted all of their traffic lights to LED lights. The question was proposed if the city had looked at the timing sequence of the lights to help reduce car idling time. Mr. Joyal responded that yes that had been looked at and that the traffic lights are running as efficient as possible. If some of the streets were redesigned, then yes, they could become more efficient. However he did note that there could be some room for improvement with the traffic lights.

It was noted that the next step for the Dover Energy Board was to consider having a comprehensive audit completed to update their older energy audit from a few years ago. Mr. Joyal recommended the board consider an RFP to hire an energy consultant that could assist



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the board in reviewing the energy audit and suggest courses of action. They could help the Dover Energy Advisory Committee to look at the bigger picture.

Joanne Eaton discussed some of the steps being done at the school. Work on replacing the lights in the gym and auditorium has been done. It was mentioned that no rebates are offer by PSNH if the payback is greater than 3 years.

The discussion moved to performance contract, and Mr. Joyal stressed the importance of these contracts. Mr. Joyal discussed the issue with the cogeneration machines in city hall. The engineer consultant had suggested these cogeneration units and there was a performance contract with the engineer. The units didn't reduce the electricity consumption as proposed by the engineer and as a result, the engineer had to write a check on a yearly basis to cover the extra costs. The last year the city is receiving a check was this year. Contract is up with the engineer on 6/30/2007.

Next the committee discussed the focus of the committee briefly. Items included working to do a comprehensive overview of the city's energy needs. This should include both municipal facilities but also school facilities.

Mr. Joyal mentioned that there are some funds available to the Energy committee. He was holding off on using the funds because he wanted to work with the Energy committee as well as with the school. It was stressed again the importance to consider an RFP for an energy consultant to advise the Energy committee regarding the audits and course of action. A performance contract should be written between the consultant and the city. Mr. Joyal will get copies of RFP's for the next meeting.

There was some discussion on possible people who could present to the Energy committee. Jim Dombrosk from UNH was mentioned. He's had a lot of experience with the cogeneration facility at the university and other energy efficiency measures. It was also discussed to invite someone from the Governor's office. They have a full time staff member working on energy issues.

Mr. Joyal discussed the history of energy conservation measures in Dover. There was a performance contract written with Landis and Gear. They conducted a free energy audit in pursuit of the city's business. They came up with a Financing program. Improvements would be funded through money saved in energy conservation measures. It was determined that the city would debt finance themselves due to the savings involved. If these savings weren't realized, the engineer would owe the city money. This is what occurred and the engineers did write the city a yearly check. There were two big failures. One was the cogeneration units at city hall which was previously discussed. Second was the refrigeration unit at the ice arena. They did cogeneration out there as well however the cogeneration units couldn't handle the load from the compressors. To fix the problem, two gas chillers were installed. There is a great need to relook at the energy uses at the arena. Currently there is \$15,000 lost each year out there. The system was installed for one sheet of ice. Now with two sheets of ice, the system is



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over extended. Other focus areas need to be natural gas usage and electricity consumption. Other improvements included:

- Wastewater Treatment plant: capture water to process in the plant.
- SCATA system: controls all wells and pumps from a centralized control system.
- Central Energy Management System- Ice arena and all municipal buildings are all automated. There is a need to have staff member hired to oversee these two central energy systems.
- LED traffic lights installed
- T-8 lights installed
- Occupancy sensors installed
- Variable Speed pumps installed.
- Cogeneration installed at pool
- Upgraded heating system to gas and forced hot water
- McConnell center improvements included windows, gas heat, energy efficient doors, HVAC standards improve air exchange.
- Library windows are coming
- Fire Department windows are coming

It was addressed that there is a need to track the energy use in the city better. Someone should be overseeing the statistics.

Next the discussion moved to the school governing board and it was identified that they are a separate entity from the city. A partnership between these two organizations would help to maximize the cost savings in hiring an energy consultant and subsequent energy audits.

Next Steps included:

- What is the city doing to be cooler.
- Research RFP for energy consultant
- Quantify and manage energy statistics better
- Staff consideration to manage central energy system
- Need an engineered plan and a financial plan

It was discussed that the next meeting would be on April 12, 2007 at 5:30pm in the council chambers.

**Motion made to adjourn meeting.** (Steltzer, 2<sup>nd</sup> Overbey) passed U/A.

Respectfully submitted.

Eric Steltzer