

Meeting Minutes
Clean Energy Future Committee
February 22, 2018

8:00 – 9:00 a.m.

Arlington Town Hall, Lyons Hearing Room

Approved at the March 22, 2019 meeting

Members Present: Pasi Miettinen, Adam Chapdelaine, Coralie Cooper, Nellie Aikenhead, Shelly Dein, Marc Breslow, Emily Sullivan, Dan Amstutz, Jim DiTullio, David Levy, Ken Pruitt.

Members Absent: Ryan Katofsky

The meeting convened at **8:00** a.m.

Introductions

Pruitt welcomed the Committee and noted we would have a special presentation from Committee Member Pasi Miettinen, based on his experiences in his own company (Sagewell) in the energy efficiency space.

Presentation by Miettinen

Miettinen described a set of results from the Mass-Save energy efficiency program that he found disappointing with the goal of reducing overall energy consumption. When he looked back at the last 10 years of data, he noted that approximately 3% of homes in a given year actually obtain an energy audit. A third of those homes will choose to weatherize. For every home that chooses a weatherization improvement, the resulting savings in energy usage equals roughly 10%. But this means total energy savings in a given year is approximately 0.1% and total savings over the last 10 years is approximately 1%.

Miettinen described the problem today as he sees it: Massachusetts is continually moving to a cleaner mix of electricity power (e.g., Vineyard Wind). Thus, while not 100% carbon free today (including Miettinen's observation that on-peak vs. off peak electrical production shows no significant difference in terms of carbon footprint), electric usage continues to become more and more carbon-free. Further, the analysis Miettinen is providing is emissions from end-use consumption. Examples of this are homes and cars, not food or air travel. Thus, Miettinen recommends a goal of getting as much consumption away from natural gas and oil towards electricity as long term, electricity generation is the cleaner source of energy.

Miettinen then focused on the home and its consumption (the discussion did not center around electric vehicles). One point Miettinen provided, which he argued was a contrast to conventional wisdom, was the addition of improved insulation in a home did not make a statistically significant difference in terms of total energy usage.

Rather, Miettinen argued that central ducted electric heat pumps, which move air efficiently through a home or building, are the biggest contributor for both total reduction in energy and the opportunity to

move away from oil and natural gas towards electricity. Miettinen argued that heat pumps for example use 1/3 the energy of a traditional electric resistance heater.

Dein asked if a heat pump needed to be coupled with better insulation. Miettinen agreed that true energy reduction needs both better insulation with a heat pump for both winter and summer months. Further, a heat pump may not work in all weather scenarios and a conventional heater or air conditioner may have to supplement in extreme weather.

Miettinen then turned towards his next question, which is: why does Arlington not currently have a single net-zero home? He argued that half the town lots are non-conforming from a by-law perspective, which means re-working of the house foundation (to prevent water leaks, etc.) is near impossible. Miettinen argued that new homes are cheaper than retrofitting existing homes (on a dollar per square foot basis) and further, new homes, if properly designed have a Home Energy Rating System (HERS) score in the 40s, which is a very energy efficient home. Most home scoring in the 40s under the HERS method, with the addition of rooftop solar, could achieve a net zero rating under the HERS method, moving the town to achieving much of its goal net zero goal.

Next Meeting:

Pruitt highlighted that the next meeting for the Committee would be on March 22nd, with the Metropolitan Area Planning Council to discuss the greenhouse gas inventory and 2050 net zero planning process. This is a shared project between Arlington, Natick and Melrose, with MAPC providing most of the technical work.

Meeting adjourned at 9:13 a.m.

Minutes written by David Levy.