

WNYT - Energy Working Group
Minutes of January 4, 2019 meeting.

Present: Eric Werthmam, Kirk Ritchey, Dermot McGuigan

Dermot reported on visits to two Danish district heating communities in November 2018, the City of Aalborg, population 211,000, and Brondeslav, population 12,000. Brondeslav recently transitioned from natural gas district heating to a renewable system serving the whole town and using solar concentrating panels, the combustion of local biomass, large scale heat pumps and thermal storage. The former, Aalborg recycles energy from a coal power plant (to be retired this year), a cement plant, waste-to-energy facility, all combined with thermal storage to heat the entire city.

Woodstock options:

- **Community Loop:** a loop circulating ground temperature water to individual home water-to-air heat pumps. This is in operation in a demonstration project serving 10 homes in Glenwood village, Riverhead, Long Island, thanks in part to the utility National Grid. A centralized community loop system provides heating and cooling to individual heat pumps serving the ten homes (links below).

Seven wells supply Woodstock with its drinking water, all are located in the Western Hamlet (Bearsville Flats). This provides a unique low cost opportunity to use town pumped groundwater as a source for homeowner heat pumps, using simple heat exchangers to provide the equivalent of drilled wells. This is the technique used in Toronto to provide direct cooling to most of its downtown high-rise buildings, sourced entirely from the Toronto municipal water supply via flat plate heat exchangers.

- **Renewable and Recycled District Heat:** Delivering heat at a temperature high enough for direct home heating and hot water supply, as in Brondeslav and elsewhere (4th generation district heating, www.4dh.eu).

- **Individual home heat pumps:** At least five homes, all relatively recently rebuilt or modified, are currently using air-source heat pumps in the project area. This equates just under 5% of homes. Cold climate or mini-split air-source heat pumps are viable alternatives to combustion of fossil fuel. This is the default path and fits current NYS incentives and policy.

HeatSmart Ulster/Sullivan program: We agreed to reach out to Melissa Everett at Sustainable Hudson Valley and Sam at Catskill Mountainkeeper to offer to assist with a public meeting on air and ground-source heat pumps in Woodstock.

FYI: Natural (fossil) gas use has increased 9% in NY State from 2009 to 2017, and in Vermont it has increased by 27% (this in a State with a policy to reduce GHG emission 90% by 2050).
https://www.eia.gov/dnav/ng/ng_cons_sum_dcunusa.htm

Links to the Long Island project: <https://news.nationalgridus.com/2017/10/national-grid-nyserda-announce-clean-heating-cooling-demonstration-projects-long-island-residents/>

<https://www.farmingdale.edu/academics/centers-institutes/resc/conferences/iesc2017/pdf/iesc2017-christophercavanagh.pdf>