

Net Zero Task Force Working Group: Energy Supply & Offsets

April 8 Meeting Notes

Present Working Group Members: Mary Smith, Aaron King, Paul Lyons, Henrietta Davis,

CDD Staff: Bronwyn Cooke, Ellen Kokinda

Consultants: Dave Ramslie, Rachel Moscovich, Barbra Batshalom

Roadmap & Process

Working Group recommendations scheduled to be finalized by September 2014. The responsibility of the working groups is to brainstorm ideas and make preliminary recommendations. All recommendations that come from the Working Group will be presented to the full Task Force, who will ultimately decide what the final recommendations will be.

Working Groups will meet once a month. All ideas will be accounted for in a Google Doc, which members will have access to look over or add content.

Items to address:

1. Defining the current situation – an inventory of difficulties and barriers
2. Based on existing conditions, what does the future look like?
3. Vision – objectives of developing SMART goals (Specific, Measurable, Attainable, Realistic, Timely); what might we need to refine?
4. Our aim is longer-term, not incremental; we are looking to create paradigm shift

Current Situation

Barbra started the discussion by posing the following questions to the working group members:

1. *How are we defining energy supply?*
2. *What Issues or content needs further research?*

This working group will evaluate what Cambridge has direct control over, what Cambridge can influence, and how Cambridge can partner with other institutions.

Topics to be covered:

- Existing buildings, new buildings, non-building infrastructure (including district systems)
- Renewable energy sources
- Storage
- CHP, already a lot of this in Cambridge, important to have thermal load; how long is natural gas acceptable?
- Offsets
- Carbon sequestration strategies
- Veolia system
 - For a while Veolia was pushing CHP, but then it dropped it
- Land use, both within Cambridge and outside of Cambridge
 - City owns land in Lincoln, MA, possibility of building solar out there
 - Consider local applications first (solar installations), then consider broader

Utility

- Some partnering exists with utilities, could be more developed (MOU could be created/expanded)
 - Harvard's Goal 2016 30% reduction
- NSTAR CHP incentive exists (\$110/kWh?)
- The Compact has a connection – NSTAR
 - Talak can perhaps suggest someone?
 - It is important to work with NSTAR- help them see where we want to go
- There are significant interconnection challenges
- One-off – infrastructure is “there” but for larger supply, there is probably not enough capacity in the lines. New England had high prices this winter because of capacity issues
 - Identify collaboration with NSTAR within the context of their grid; have to understand what the capacities are
 - NSTAR not able to meet demand (HMART)
- Renewables are consistently at 7% of ISO NE supply (solar not included in forecast)
- Capacity charge is going up in 2016/18 to \$15kWh from 3.1 and will stay up for 3-4 years. Plants will be retiring.
- Providers (mass save) like, next step living, solarize Brookline can be less passive and target good properties instead of waiting for those folks to come to them

Tools and Resources

- Currently, there is no platform in place to track data and adjust over time, make mid-course corrections (i.e. Chicago's model); tracking and measurement will require resources
- Solar map exists – potential low hanging fruit
- Carbon feed to all gas bills similar to Community Preservation Act on bill – fund things that are not economical but where there is a clear public benefit
- Neighbor to neighbor model- setting neighborhood goals

Things to consider:

- Solar is the easiest (wind, hydro, biomass, CHP)
 - Problems associated with wind- variable in Maine, how to get it out; its expensive, problematic, how to integrate it
 - Solar is more dependable; can plan when you need it the most
 - There is someone in Maine who developed an electro, wind, floating turbine
 - Some wind projects have more community backing than others
 - State level incentives on solar
- Energy storage part of the question
- Potential partners with land/area for renewables....MBTA and others
 - MBTA owns land in Cambridge, to be used for renewable energy? (solar installed on Alewife potential installed on rooftop); MBTA perfectly willing to give Cambridge credit
- Solar “ready” in new building design and menu of things to consider including mechanical locations to make them “district ready” – such as mechanical on perimeter and hydronically heated and cooled
- Lots of condos – ownership model makes solar difficult AND getting agreement makes it difficult
- Currently there is no district “overlay” using energy supply limitations to drive EE in new buildings, setting limits and recognizing “carrying capacity”

- What is the right kind of leverage to use? – DOE driving force; partnerships are a key piece
- How do we resolve issues around energy sharing?
- King School – goal of net zero- if we can solve the King School we can figure out how to solve the problem at a larger scale
- What would be a good local carbon fund?; funding energy efficiency and creating fund
- If you had all the money in the world, what would you do? How would you prioritize projects?
- A good outcome for this group would be to identify realistic targets for renewable energy
- Capacity – Quebec Hydro, Veolia & steam, energy generation/sources how is fuel mix going to change over time?
- Technology – what is available today? Where is it going in the future? Partnerships accelerating
- Land lease model – Australia had to become its own utility to get enough power
- Going to be expensive – main success stories are those projects that had marketing decisions; how can Cambridge create more than reduction solution, but also create more jobs and economic growth (not all a financial decision)

Paul Lyons described remembering when Cambridge Electric and Commonwealth Gas had to track everything that came into the city. It would be helpful to have an annual report of electric, natural gas, and fuel oil that comes into the City of Cambridge. We could look at overall energy use, identify our goal, and then look at ways to address a mix of strategies over time to get to that goal.

Reduce via Efficiency

- Are we going to use wind? Bio fuels? PV with battery storage on location? Natural gas?
- Get rid of all oil
- Solar thermal – more of this in the future; domestic hot water, switching to geothermal heating and cooling

Paul's chart showing the wedges....to get to zero – half is done through EE and the other half is a mix of wind, CHP, PV, etc.