

# Getting to Net Zero Task Force

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## *April 9 2014 Meeting Notes*

**Present Task Force Members:** (ALL were present) Jane Carbone, Caitriona Cooke, Barun Singh, Quinton Zondervan, Joseph Maguire, Tom Sieniewicz, Julie Newman, Shawn Hesse, Paul Lyons, Heather Henriksen

**CDD Staff:** Iram Farooq, Susanne Rasmussen, John Bolduc, Brian Murphy, Ellen Kokinda

**City Councilors' Staff:** Mike Connolly, John Andreo

**Consultants:** Dave Ramslie, Rachel Moscovich, George Metzger, Paul Gromer, Barbra Batshalom

*About 17 members of the public were present.*

### **Tonight's Agenda:**

- Project Outcomes
  - Definition of Net Zero
  - NZTF Outcomes
- Working Groups report back
- Discussion of Early Action Items
- Preview of Cambridge Building Energy Primer
- Next Steps & Public Comment

### **Definition of Net Zero:**

A community of buildings that collectively achieve net zero emissions in their operations, through infrastructure, energy efficiency, renewable energy, and offsets.

Dave Ramslie, Integral Group discussed that the NZTF process is dealing with operations but not waste, water, transportation, or embodied energy. In order to achieve net zero, the TF is looking to optimize buildings by lowering demand as much as possible, and then address renewable energy. The NZTF may have to look at other options to fill the gaps, i.e. offsets.

### **Discussion on Net Zero definition**

- Data collection & Metrics: How will we measure? At what point are we measuring? How will we measure at the community scale?
- Offsets should not be included in the definition
- Clarify other interim strategies – RECs part of the renewable energy or part of offsets?
- The end game is to NOT use offsets
- Really important to have offsets; appreciate the purity, but offsets are necessary as a practical application; we need this kind of tool here to promote what we're doing fundamentally
- New buildings institute; interim qualification; is there a NZ ready category?
- NZ doesn't include offsets – agree that offsets do not belong in NZ definition

- Offsets should be an option of last resort
- The goal of net zero is to set an example others can model after. Not okay to buy yourself into net zero; offsets are like buying your way to morality
- Offsets to achieve efficiency and renewable energy; Local carbon trade mechanism – local carbon trading might be okay and important mechanism for efficiency
- Cautious about separating the two conversations – separating out the offsets from the performance of the building. What are the boundaries for offsets (geographical, categorical)?
- Offsets wax and wane
- Separate it out – perform at highest level of design
- Independently how to invest?; More sophisticated internal conversations rather than buying into

### Outcomes

Dave Ramsle discussed the NZTF outcomes for the proposed work plan. Slides #5 &6 of the Integral Presentation. First, the NZTF will address the definition and methodology, then determine short, medium, and long-term actions, and finally, make recommendations for two capital plans. See below:

#### Outcomes

1. Proposed work plan – Kite Diagram- ARC of work program concise recommendations  
What arrival point in Dec. looks like
2. Proposed outcomes – work product- content outcomes – recommendations, impacts, roles, and responsibilities, resources, areas for further research
3. Engagement outcomes- understanding commitments, agreements

Other key items to address for NZTF Outcomes

- Define roles of stakeholders and what city can do on its own then rest of it to its community partners
- Identify further areas of research
- Identify resources
- Get commitments and partnerships
- This will be an ongoing plan – living document and support achieving goals

### Task Force Discussion of Outcomes

- Content outcomes – will there be explicit metrics for each of the actions? --→Response from Dave - YES, part of the reporting
- We can only report when have metrics – an accountability strategy
- Need for explicit metrics

## Net Zero Task Force Working Groups – Report Back

Barbra Batshalom discussed the goal of the first working group meeting to identify the current situation, landscape, characteristics, and barriers to the future vision.

- Unbelievable amount of expertise in Working Groups
- It is important to define what the future situation feed on each other and iterative
- Build SMART goals
- Next session – barrier and stakeholder analysis
- Make very specific recommendations to the Task Force
- All Working Group recommendations are to be edited and tweaked by the main Task Force
- Access to Google Doc – at all times for input – spread out

## Regulation and planning approaches Working Group Report Back

- Our goal was to dive into existing conditions what are in place or mission that shape current environment
- Existing buildings dominate stock – influence existing but not a lot of regulatory approaches – wanting to influence that stock but without a lot of leverage
- High concentration of lab space – codification of lab
  - General consensus is a big challenge
  - Lack of regulation on air venting, no consensus standards
- Lack of a smart grid – role of utilities – definition of what measures are considered cost effective as part of incentive programs
- What public private sector consider cost effective
- Restrictions of cogeneration for lab buildings- limit of 25% for cogen in lab buildings – capped at relatively low levels
- State energy code – limbo of the stretch code ask to adopt new stretch code
- Outreach to tenants – how regulations tie into tenant relationship – reporting of energy use owner and occupant
- Update on existing zoning – K2, and E.U.D.O. – efforts that could spur early actions
- Missing – no requirements for solar or NZ ready
- No codes for help with lab space

## Education and Behavior Change Working Group Report Back

- Who are we going to be educating and engaging?
- Audience is the community of Cambridge and larger circle of partners and stakeholders
- Current situation – diverse community of people and buildings
- Looked at community context
  - Lifers, students
- Stress buildings bus people who live in there – physical building function and who is us
- Range of literacy – lots of different messages and confusion
- Technology adoption on rise
- Synergy and technology stakeholders
- Social media

- Schools, universities, museums, programs and outreach
- Depth of commitment varies
- Landlords not incentivized
- Popularity of solar
- People – friends of alewife, utilities, adult and youth, media, EE providers, professional associations, museum of science
- Sweet spot youth ages 14-25 growing awareness – get into range of being active in voice
- Challenge concept of commons, definition of collective – not single entities, nurtured as a community effort and leading way
- Message at top

#### Incentives and Financing Tools Working Group Report Back

- Current state- financing – making money available
- Incentives anything that helps an individual or organization make a decision they wouldn't have
- Financing - Utility rebates and federal tax programs, tax credits, grants, escros, pace, recs etc.
- Veolia system perceived risk, community solar
- Commercial – e performance agreements
- RECs
- PACE
- Incentives – not limited to financial – social incentives, resident , ways of publically recognizing people
- Having sub and net metering – building disclosure – tracking
- Risk reduction – Veolia system – perceived risk don't use as much
- Different types of programs – community solar
- Getting value – if you're a building owner then what are you interested in?
- Building incentives v. siloed – that psychology plays an important role
- Incentives for lab space are different
  - Utility program served by other market i.e. residential
  - Who are you reaching out to and how defining audience's wishes
- Disincentives?
- Deep energy retrofit incentive program not available

#### Energy Supply & Offsets Working Group Report Back

- Supply – all electricity from NSTAR 7% renewable, hydro, gas, fuel oil
- Large power plants- using natural gas to convert to energy
- Draw boundaries around supply if we could characterize supply- can we characterize supply and set goals for the supply to be net zero?
- Measure goals and say where we want to be

- Capacity change increase to \$17 that will be a pricing incentive to look at other supply – will make onsite production more economical
- Look at solar map
- 30% could be produced in PV technology
- Making buildings solar ready – put district energy ready
- Hook up home or building in the future
- New construction or major rehab
- Could probably knock down 30%
- Eliminate growth - 70% left do it from
- Solar thermal
- Work on graph in future meeting

### Early Action Items and Recommendations

Dave Ramsle presented a draft memo of possible early action items and recommendations for the TF to discuss. Of the following proposed early action items, are there any that the Task Force can collectively agree on? If so, what are the items or pieces that the Task Force would be willing to support?

- Building Energy Benchmarking and Disclosure (see handout for summary)
  - Would apply to commercial and multi-family
  - Require benchmarking and disclosure
- Update Zoning Ordinance
  - Raise Certified LEED to Silver
  - Raise Silver to Gold
  - Consistent with other rezoning
- Multi-family Energy Efficiency Pilot Program
  - Work with NSTAR to:
    - Raise participation
    - Achieve deep retrofits
    - Be location specific
    - Limited time offer marketing
    - Streamlined service delivery
- Endorse two initiatives
  - Comments on the MA State Stretch code
    - Accommodate District Energy and Cogeneration
    - Improve Energy Modeling
  - Support for PACE legislation (S. 177)
    - Support for commercial buildings
    - Include resiliency measures

### Task Force Discussion of Early Action Items

- The City is currently working on the Building energy disclosure ordinance
- Is there a way to go beyond LEED? Add solar promotion and requirement?
- The City has submitted letters of support for both PACE legislation and the stretch code

- There may be other standards besides LEED that may be better
  - Excellent recommendation- rezoning already happening if serious about this, maybe new approach, increase in solar insulations 1.2 megawatts only .3 of potential
- Make recommendation that encourages the city to do more and maybe require in some cases
- Executive order #44 – theoretically- it must be explicit as a metric – be explicit on wanting energy efficiency
- In energy category – LEED is not enough
- What are the details of each of these proposed early action items?- can we distribute the full text?
- In response to the 2<sup>nd</sup> proposed early action item - recommissioning if you want to maintain energy efficiency during construction
- Energy within LEED and more about solar
- District energy – present ownership of Veolia results in unpredictable pricing on a given year it costs the tenant 4 -5 times more than gas
  - Having an economical source is very important
  - Certain types of buildings should be compared to similar buildings versus office buildings
  - CIC – drive down per person, more energy intensive
  - A lot of difference – unintended consequences of what is passed
  - Don't want to rent more space than need to show energy conservation comparisons
  - Wants to see district energy work, but current pricing structure from Veolia is not acceptable
- Boston – what are other communities doing? Are they setting higher standards? LEED platinum?
  - Dave – yes, Vancouver is gold+, Portland is gold, Chicago is silver Various requirements in Portland and Vancouver to receive financing
- LEED Silver – is exemption level are waved to report energy – Boston waives energy reporting for LEED Silver and above
- This is a process question - Are you asking us to officially endorse these early action items? - I would like to know more about the Building Energy Disclosure Ordinance (BEDO)
- Want to understand the depth – a recommendation, not THE recommendation
  - Not asking the Task Force to recommend a specific item, but can all agree on supporting the notion of having a B.E.D.O.?
- Considering other areas
- Proposed early action item #3 - where's marketing campaign and incentives?
- Is LEED version this year still 2009? Vs. 2013? New LEED Gold is basically the old LEED platinum
  - Leapfrogging
  - Old gold really going to platinum

- Look at energy and water points that are aligned with LEED Standards
- Important to look at building materials
- Response from Iram → special permit actually picks up new LEED version in two years

#### Takeaways from the Early Action Item Discussion:

- Proposed Early action item #1 there should be some kind of B.E.D.O.
- Proposed Early action item #2 want to raise LEED standards how to and be mindful of
  - Actually written to most current version of LEED
  - We should raise and be targeted on energy and other outcomes
- Measurement and verification, not just focus on energy
- Deep retrofit on multifamily – no disagreement
- Endorsements – engage in your networks
- State stretch code
  - City staff- supports these actions in stretch code
- Commercial – tenant needs to be controlled too- not just landlord, currently segregated
- Tenant build out doesn't have requirements – with tenants some thought of what they should build out – not just by owner and can't ignore tenants
  - Need to control the commercial tenants, not just the owners. Stretch code requirements applies to the building shell, but tenants can modify the inside of the building
- PACE – no disagreement

#### Review of Cambridge Building Energy Primer

Paul Gromer, Peregrine Energy presented preliminary findings of the Cambridge Building Energy Primer

- Snapshot of energy use and supply in Cambridge
- Don't have all the information – highlights
- Objective – common understanding
- Cambridge population declined and is now coming back
- Cambridge has a high percentage of people living in group quarters (84%)
- Electricity and natural gas use in Cambridge – year to year jump around
  - Weather and economy
  - Overall energy use is a flat trend
- Population and business growth – standing still takes a lot of work
  - Further to point – energy efficiency programs in the state – flatten out growth
  - Energy forecast – what energy use would be
  - Black line – efficiency programs' impact
  - Utility data includes some multi-family
- CO2 emissions takeaway- commercial and industrial use
  - Issue is that within a building – can be split 3 different ways – hard to parse out
- Change in CO2 emissions over time and have declined
- Electric generation fleet gotten cleaner
- Coal and oil going down- have dropped, i.e. easy gains have been gained
- Renewables, largely hydro now

- Cambridge is unusually weighted with CN1 – 89% by customer sector
- How concentrated electricity use is
  - Even within CN1 sector 90 accounts using the majority of energy in Cambridge
  - Very small C+1 – business customers but basically like a house
- Big levels, big gains, and lots of tiny levers
- Multi-family all over the map- between residential and commercial
- Large campus level accounts-
- Master metered gas not electricity
- When commercial space in city was developed – retrofit way to NZ
- People worked hard to stay even- small number big emissions
- Maturity of building stock

### Discussion of Cambridge Building Energy Primer Presentation

- Methodology of opportunity – of 90 accounts
  - Look behind account numbers and buildings
  - Talk to some of larger accounts – what do they see as opportunities
- In terms of tactics – identify these are partners to be talking to
- We could focus a really narrow area, but categorically different than other users – spending time effectively
- Multi-family, dorms
- Education group from residential in 89% category
- Commercial behavior change
- Don't get too seduced by big users – part of way – single accounts, but many people using that energy – energy reduction and emission reduction will be the same basic principles regardless of large accounts versus small accounts. Command and control is different, but not all the details.
- Action would not be all that different than residents
- Lab tenants, Harvard, tenants focus
- This is representation – desire to understand how much are
  - Compact how to categorize individual buildings reporting numbers- decipher office, wet lab, dry lab, only city
  - Over categorize – cities and struggle with roll out
  - Less mechanically users less active
- Cognizant -80% time, 20% result – not the best way to spend time
  - Figuring out what you need to force
- 8 users, 16% emissions – beer, meat, sugar- understand operations – replacing an old sugar boiler – not going to happen because that technology hasn't changed
- Class A office – sophisticated owners and managers – no low hanging fruit
- Summarize – early actions, schedule

**Public Comment**

*No members of the public commented.*