MWCOG Built Environment & Energy Advisory Committee (BEEAC) Meeting
Meeting Summary: 3/20/14

Attendance:
Cynthia Adams, Local Energy Alliance Program
Garrick Augustus, Fairfax County
Erica Bannerman, Prince George's County
Linda Baskerville, Arlington ISD
Jeffery Bond, Prince George's County
Leslie Cook, EPA Energy Star
Bill Eger, City of Alexandria
Mike Farahani, Prince George's County
Sam Hancock, Emerald Planet
Rachel Healy, WMATA
Terry Hill, Passive House Institute
Mike Hunninghake, University of Maryland Environmental Finance Center
Joan Kelsch, Arlington County, BEEAC Co-chair
Emil King, DDOE, BEEAC Co-chair
Christine Larson, Bowie *(conference call)*
Kimberly Newcomer, DC Department of Consumer & Regulatory Affairs
David Peabody, Peabody Architects
Helen Reinecke-Wilt, Arlington DES
Luisa Robles, Greenbelt, *(conference call)*
Said Said *(conference call)*
Howard Stone, Fairfax County
Khoa Tran *(conference call)*
Bill Updike, District Department of the Environment
Emilee Van Norden, Maryland Energy Administration

COG Staff
Leah Boggs, COG DEP
Maia Davis, COG DEP
Jeff King, COG DEP
Isabel Ricker, COG DEP
Steve Walz, COG DEP

1. Call to Order: Joan Kelsch, Arlington County & Emil King, DDOE (Co-Chairs)

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2. The Business Case for Energy Efficiency:: Emilee Van Norden, MEA

This *Become Your Organization's Energy Efficiency Champion: "Getting to 'Yes' for Energy Efficiency"* report and business guide by MEA found that having a champion is the main factor influencing whether an energy efficiency project goes through or not. Champions can be inside or outside the organization, but are the point person who sees project through to the end.

- Report Audience: Institutional and Commercial building space
- The report walks people through the process step by step with a decision tree
- MEA hopes that it will become a web-based tool in the future

The main steps to take to prepare for project success are:
Step 1: Build a team
- Include diverse stakeholders throughout the organization with influence over the process
- The team must agree the project is a good idea and will benefit them or their program

Step 2: Use the correct language when communicating about the project
- Talk about different benefits depending on the audience: workplace benefits, environmental benefits, economic benefits etc.

Step 3: Convince or express to management that delay is costing them money
Step 4: Understand the decision making process in the organization
- Get right information to the right people at the right time

Step 5: Suggest how to pay for the energy efficiency project and take advantage of available resources

Organizational and Financial Hurdles:
1. "Who will do this?"
2. "We don't know where to start"
3. "We don't have the technical expertise"
4. "We can't afford it"
5. "This Isn't a Core Competency"
6. "Our Organizational Culture Is Too Conservative"
7. "Other Projects Offer Better Returns"
8. "It's Not Worth the Investment"

The report includes strategies and resources for addressing each hurdle.

Case Study: Westminster Riding Club
More case studies are available online: http://energy.maryland.gov/Business/businesscaseguide/

3. Maryland Smart Energy Communities & Sustainable Maryland Challenge: Mike Hunninghake, University of Maryland Environmental Finance Center

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University of Maryland Environmental Finance Center (EFC) works with municipalities across EPA region 3 to design finance programs for energy and stormwater, agriculture, sustainability projects.

Smart Energy Communities Grant (SEC) program:
- Available to incorporated communities
- Goal areas for projects (pick two):
  - Transportation fuel reduction **or** Renewable energy **or** Energy efficiency
- Funding from strategic energy investment fund (RGII)

EFC helps the communities navigate the SEC program process and provides technical support
- Before the grant is given, communities must adopt certain policies, based on the goals chosen:

    - EE goal: commit to a 15% reduction in electricity in 5 years
    - Fuel goal: 20 % reduction in fuel in 5 years
    - RE goal: use 20% renewables by 2020

Round 1 of SEC in 2013

- 34 communities participated
- Most pick EE and RE goals
    - Common investments: HVAC upgrades, solar panels on public buildings
    - Communities are using EPA portfolio manager
- Fuel is more difficult to reduce – some municipal vehicles are not available in more efficient models
    - Anti-idling programs are a good option
    - *Comment from Bill Updike: DC anti-idling technology increases efficiency 20% and has a less than one year payback*
- 4 million dollars total – individual grants depend on size of the municipality
- *In response to a question from Jeff King: funds can only be used for municipal assets.*
    - There may be an opportunity to use the grant for low and moderate income programs, but municipalities cannot use SEC funds for schools because those are County owned.

In many municipalities, the electricity bill for street lights is larger than all their buildings combined. In some places it is larger than the wastewater treatment plant.

- Many are looking into replacing street lights with LEDs, but they have encountered reluctance from the utility
- *Comment from Bill Updike*: *DC has done work on street lights, contact him for assistance.*

Round II in 2014 will include 23 communities.

- Many things have been ironed out since Round I

Question from Jeff King: is there any effort to do a cooperative bulk purchase?

- *There is a time crunch, they have to spend the funds within a few months*
- *Cooperative purchasing or using the COG rider clause could allow them to spend the funds more quickly*

<u>Sustainable Maryland Certified (SMC) Program:</u>

- Pioneered in New Jersey about 8 years ago
- Platform for engaging municipalities and residents
- Communities who register with the program commit to taking various actions
- Actions are worth points, once communities have 150 points they become “certified”
- Currently 34 communities participating, 12 certified
- Communities initiate a Green Team
- The program provides a Peer to Peer network
    - Have access to very detailed information about programs, best practices, and all the initiatives other communities are pursuing.
    - The road map is available to the public, but the detailed municipality-specific information is only available once you have logged in.
- Funding from Town Creek & EPA
- Awards Ceremony each year with Maryland Municipal League

4. Passive House: David Peabody**,** Peabody Architects

- Peabody Architects has built one passive house and working on a second
- Energy conservation numbers are within $5/month of the HERS modeling projections they used
- Focus is to minimize energy use, with the goal of net zero energy
    - Cost of ownership is lower

How Passive Houses are built:

- Improve building envelope
    - Want a complete unbroken surface around building (e.g. a thermos)
    - Airtight Construction: seal tightly
    - Triple glazed windows
        - You can open the windows like a normal house, but when they are closed it is an extremely tight seal
    - Thermal bridging (anywhere wood framing is transferring heat)
        - Fully insulated sash and frame – necessary to avoid thermal bridging
- Use and Control the sun
    - In northern climates need a ton of windows to get the energy necessary
    - In this climate don't need too many windows, but strategic south facing windows
- Provide Good Ventilation
    - Simplified mechanical system – Conditioned fresh air living spaces
    - Energy recovery ventilator
- Building performance software
- No furnace!
    - Have mini split heat pumps instead. These are very high efficiency, designed for a room but can heat a whole passive house (PH) with it
- Can be large buildings (apartment or commercial) as well as homes
    - Large buildings are easier because higher floor : envelope ratio

Passive House Performance Modeling software

- Allows architects to evaluate different features to see what will get you to the result needed
- Costs about $250

Results:

- Passive Houses come in around 30 HERS rating
    - Net zero = 0 rating, using renewables, not a big jump
- Comfort: no drafts or thermal stratification, no condensation
    - No temperature differential larger than 4 degrees
- Health: lower CO2 and asthma triggers

Cost Figures:

- $900,000 total: $90,000 went to upgrade it from a 2006 code home to reach passive house
- Energy use of passive house = 15% of a 2006 code home
- $280,000 = true cost of solar PV system to generate the energy equivalent of the annual energy saved by passive house

Passive House Standard:

- Only an energy standard, so it is complementary to LEED and Green Globes standards
- Passive House Institute US (PHIUS) has a PHIUS + checklist
    - Worked with RESNET, DOE and EPA to create an American standard
- Not checklist based, but performance based
- If meet all checklist criteria and show performance on modeling program, get certified

DOE goal: 70% energy savings by 2020, 30% onsite power by 2020

Why is it difficult for passive houses to compete on the market?

- Unfamiliar to people
- Threatening to established building energy efficiency groups like USGBC and NAHB
    - These groups have huge lobby in congress and state legislatures
- Few incentives available
    - $500 total for energy conservation measures taken

How can local governments help to level the playing field:

- Property tax incentives
- Density incentives for PH (Arlington has for LEED buildings)
- Require HERS ratings for all home sales (Austin, Tacoma and Seattle are doing this)
- Set an example with public buildings
- PACE financing
    - Ramping up again in residential markets – CA has developed a guarantee program so that Fannie Mae and Freddy Mac will not lose home mortgage loans despite the seniority of a PACE lien
    - PACE is doing very well in commercial buildings

Discussion:

- Why has Germany progressed so much farther with PH?
    - They have a number of efficiency standards and requirements
    - Electricity cost is much, much higher, so the investment payback is much greater
- Doesn't seem like a very practical investment for most homeowners
    - When compare energy cost savings & mortgage payments it is a higher cost in the beginning but levels out to be competitive
    - People only live in their houses for 5 years, so the upfront cost is a huge barrier
    - PACE financing will be key to expanding the market
- Can you use any contractor or are their specific builders you need to use?
    - You can use any, these are simple fixes, but it is key to work closely with them as a team
- Affordable Housing
    - Habitat for Humanity is building passive houses in DC
    - Philadelphia is building passive townhouses at market rates

5. Incorporating Green Attributes in Real Estate Listings: Cynthia Adams, LEAP

The Local Energy Alliance Program (LEAP) promotes energy efficiency in buildings and is a DOE approved contractor for Northern Virginia area.

CEQ recently held a roundtable on real estate energy attributes and how to include these in appraisal & real estate listings.

- There is a catch 22 with this issue: builders want to sell homes for the same price as non-green homes to show that efficient is economical. However, if builders sell them for the same, why would appraisers value energy efficient homes higher than conventional homes?

VA housing stock:

- 3.35 million homes, average age = 34 years
- Most built to 1980 code, many do not have any insulation in external walls
- Many people do not understand value of air sealing

People want energy efficient homes

- 25% of new homes were energy star in 2012
- 50% of furnaces and heat pumps were energy star
- EE is one of the top 5 most sought after features for homebuyers

Virginians value energy efficient homes higher

- According to a LEAP survey, 89% of Virginians see EE homes as more valuable, 44% see as much more valuable
- There is an increased premium for third party certified homes (LEED, etc.)
    - In CA: 9% premium

How is EE incorporated into the value of a home?

- Real estate appraisal process
- Home lending process
- Data is key:
    - Performance test results, 12 month utility usage, scores on rating systems etc.
    - Put data in publicly accessible system (i.e. multiple listing service (MLS))
    - Enable it to be considered in home listing

Barriers to incorporating EE in home value:

- There are 850 local MLS, but only 10 data vendors supply them
    - Need to get data to these vendors
- Appraisers must be able to see and understand the features (may need specialized training) and must be paid for listing them
- Lenders use uniform residential appraisal reports, which lack the data fields for adding energy efficiency or green features

Developments in the field:

- Green and Energy Efficient Appraisal Addendum (Created by the Appraisal Institute)
    - Must be filled out by a certified appraiser or approved third party
- Green MLS
    - Real Estate Standards Organization/Real Estate Transaction Standard (RESO/RETS) has created a data dictionary to allow MLS operators to see all of the potential data that can be included for homes
    - Standardizing fields for MLS across regions
- Building Performance Institute, Inc. (BPI) 2100

    - Standard for home performance data transfer
    - If using a HP xml compliant modeling tool, data can feed directly into MLS, green appraisal addendum, etc.
- BPI Home Performance Certificate
    - Standard can be used for any home that has done EE upgrades
    - Project record maps to appraisal addendum

Progression: Traditional MLS (no green features) → Green Data Sets (some information on features) → Integrated Fields (allow comparison or performance) → Market impact

LEAP is looking at how this is working in Northern VA and how to improve it

- How compliant is the MLS for Northern VA with the RESO/RETS data dictionary?

Comment from Bill Updike: DC has announced 2 grants for greening the MLS and appraisal system

6. Roundtable Updates

Leslie Cook – EPA green building opportunities

- National Building Competition registration April 16 - May 16
- If benchmarking in EPA Portfolio Manager tool, have all the info you need to apply
- Anyone performing at any level can get recognition
- Recognition for teams (5 or more buildings)– COG could enter a group of buildings
- Recognition for 20% energy savings in 2013, or 20% water savings

Emilee Van Norden – MEA permitting efforts

- Developing a portal to streamline solar permitting process and allow developers to go to one place for any county participating
- Goal: to reduce time and cost, make it easier for permitting offices
- MEA is paying for the portal
- Looking for more counties to participate and give feedback to help develop the portal

Jeff King

- Solar Update: Participants in Rooftop Solar Challenge are choosing their goals for the year
- We are pursuing regional interest in community aggregation

Bill Eger – UASI & ESF12 Overview

- BEEAC serves as the ESF12 management entity
- Grant available through UASI – BEEAC is submitting 2 proposals
    - Energy Assurance Plan – comprehensive plan to assess energy security and reliability needs, improvements and priorities and how to best implement them
    - Microgrid project – proposes to do a microgrid design for three potential critical infrastructure sites in the region.
- Any members are invited to participate in developing the proposals or other energy security initiatives

Rachel Healy – WMATA

- WMATA is going to release its Sustainability Plan this week. She is happy to talk to anyone with questions about the plan, provide background before the plan is released.

Maia Davis – the Region Forward meeting in April is focused on sustainability. We will provide an update next meeting on how it went. Let us know if you have any suggestions.

Leah Boggs

- EV workgroup meeting next week to look at the 8 state zero emission vehicle goal, hoping that DC and VA will sign on at a later date
- EPA Portfolio Manager regional sharing workshop upcoming

Other updates:

- Arlington County lighting rebate program: phase 1 completed, will achieve 20-80% reduction in lighting energy use
- Green Jobs fair in Ward 8 on Saturday, April 5 – looking at low income solar PV installations
- COG Board Priority for 2014 is "Regional Infrastructure". We will be doing a session on energy infrastructure in May.

7. Next Meeting Date, Proposed Topics, Other Announcements and Adjournment

- CEEPC meeting – March 26 (focus on National Energy Efficiency Goals and Programs)
- EV Workgroup – March 28
- BEEAC planning call – April 3
- Next BEEAC meeting – April 17
- Region Forward – April 25 (Sustainability)