GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and Environment

BEPS Working Group Session # 2 – Program Implementation and Structure
July 16, 2019

Topic # 1 - Equivalent Metrics

Section 301(b)(1)(A): No later than January 1, 2021, and every 5 years thereafter, DOEE shall establish property types and building energy performance standards for each property type, or an equivalent metric for buildings that do not receive an ENERGY STAR score.

Scenario 1	Scenario 2	Scenario 3
DOEE will use **Weather-Normalized Source EUI** for buildings that cannot receive an ENERGY STAR Score.	DOEE will use **Greenhouse Gas Emission Intensity** for buildings that cannot receive an ENERGY STAR Score.	DOEE will use **Site EUI** for buildings that cannot receive an ENERGY STAR Score.

Scenario # 1 - Source

- Scenario 1 is fair because it is most similar to Energy Star Score
- Factors for source are national → can this be changed? Sounds like another bid for NY's custom equation – Some want their own source factor for DC, but it complicates the weather normalization
- NASEO prefers a local scoring
- Most generally likes scenario 1, though they are sad about not having RECs
- The benefit of weather normalized is that it matches energy star. The downside is how it treats natural gas versus electricity, we do not want to support the use of natural gas, limitations on source EUI for that reason
- Source EUI more appropriately addresses renewable energy? For buildings that use clean choice where a percentage is from renewables. Site or GHGs, the offsite renewables are not important because the entire grid is moving toward renewables as required by the Omnibus act
- from an asset level, scenario 1 would not help with comparison across a portfolio - the difference between site and source
- Concern that source would promote natural gas over electricity. Several people brought up the tradeoff between natural gas and electricity, but said weather normalized EUI because it is most like Energy Star score

Scenario # 2 - GHG

- NYC uses custom emission factors for GHG intensity. Concern that NYC adopted a custom standard and not Energy Star
- GHG intensity is unfair because it is a different metric than Energy Star score
- GHG intensity would better incorporate onsite renewables
- There is no need to do GHG if the grid is changing
- GHG is good because that is the purpose; the limitation is you could theoretically buy a ton of renewable energy credits which does not improve building performance
- Improving efficiency is helpful to local economic development perspective, RECs are not
- RECs would only affect scenario 2, so owners could skirt the law which is unfair to offices and such - It is unfair to buildings who get scores, and doesn't improve things in the District

Scenario # 3 - Site

- Perverse incentive to use natural gas instead of electricity – natural gas will improve site energy, discourages electrification
- Site EUI- ties to efficiency here in the city, controls for carbon neutrality goal, clearest way
- It is a decision between 1 and 3 plus how do we control for natural gas
- Edward- we don't want to shift to offsite, the goal is efficiency

Miscellaneous

- Will we eventually evolve into a different metric, away from Energy Star score?
- "as similar metric as possible" to Energy Star
- Note- avoid using acronyms in the materials like EUI
- Multifamily will never produce enough onsite, need to account for utility scale and community renewables - Affordable housing
- NASEO- national average might be too low

Key Takeaways

- Generally, people preferred the first scenario
- Concern about fairness to buildings who do get energy star scores
- Concern about incentivizing Natural Gas
- Local v. national metrics
- Whether or not RECs should affect metrics

Topic # 2 – Property Types

Section 301(b)(1)(A): No later than January 1, 2021, and every 5 years thereafter, DOEE shall establish property types and building energy performance standards for each property type, or an equivalent metric for buildings that do not receive an ENERGY STAR score.

Scenario 1	Scenario 2	Scenario 3
DOEE will establish standards for **4 major property types** in the District: • Office • K-12 • Multifamily • Hotel All other buildings will be grouped into an "Other" category	DOEE will establish standards for all **Energy Star Portfolio Manager building type** definitions and define all standards for all building types available in Portfolio Manager where sufficient local District data is available.	DOEE will start by classifying buildings by **EPA Portfolio Manager property types** and then sub-divide buildings based on **property use details** (i.e. Multifamily will be broken into low-rise, mid-rise, and high-rise groupings; K-12 school will be broken into elementary/middle school and high school). Then DOEE will establish standards for each cohort.

Scenario # 1

- **0 total votes**
- Too big picture - "other" category would lump too many different building types together and would be difficult to compare; big variety of use of different buildings that would be classified under the same type, making it unfair to compare; favors breaking things into more granular groups
- Simplicity is appealing – maybe best reaction from market due

Scenario # 2

- **20 total votes**
- Already defined, already in PM, less work
- PM already treats different buildings separately, does have a good amount of nuance already – don't need to over-engineer

Scenario # 3

- **33 total votes**
- Best to sub-divide as much as possible
- For buildings with ES score, smaller sub-group details are already being captured (high-rise, low-rise, elementary, high school, etc.), so is this break-down necessary?

- Data Concerns
    - What is the comparison and what is the dataset? Breaking up into too small of categories could yield very small groups that would be hard or unfair to compare to each other, compared to larger dataset groups
    - Worry that there isn't enough of critical mass to have a representative sample; Would need a minimum number of buildings to be in a category so that building median is still high energy efficiency
    - In the event of a small category (I.e. prison) what are they being compared to? May necessitate an "other" category still
    - What about using a national average for these wonky building types? And what about using a higher percentile for national average to account for DC's higher performance?
- Added benefit: market transformation to spark competition amongst similar property types, if they're all lumped together comparison would be difficult and buildings may not even try to "compete"
- Caution: property type could group together to NOT achieve high scores
- Is it possible to run analysis of energy use by building type before determining how we classify building types?
    - Yes, it's possible; what is the threshold for when buildings should be split, based on ES score? e.g. middle schools with 55, high school with 45 – is this enough of a difference to break into sub-categories?
- Would want to see what the data looks like within these different categories; e.g. hotels: how does a Motel 6 compare to a luxury hotel? Is it significant enough to parse into even smaller categories?

Miscellaneous

- Do we have to use PM? - yes it is in the law
- Where the sample set is large enough, use local data and median – where sample set is NOT large enough, use a national median. Thoughts on this from the group?
    - Worried the national average would skew too low for DC
    - Amendment could be using the top 25% rather than the top 50%, for example, to have a more stringent standard when using national comparison ; Lots of support for this suggestion from the group – add on as an "amendment" to scenario 2
    - If data is input properly, theoretically different energy users even within the same property type should be adjusted to be fairly compared
    - In DC we do not have the granularity in data to determine these different categories, may be difficult to run this comparison analysis
- All scenarios are too narrow for DC; most buildings are mixed-use due to density of the city so "other" category would be parsed out anyway - Would be more advantageous to streamline the PM building types rather than infinitely sub-divide
- What are exempt buildings? Embassies, federally-owned buildings, large multi-lateral buildings
- How would people feel about a mixed-use building having to comply with the predominant use of the building? (rather than a weighted average, which is more work)
    - Controls for similar building type energy uses in the ES score; this becomes more complicated when the other use is not classified under ES score

    - No issue using this method
- ES mixed-use scoring uses weighted average, how do people feel about the mixed-used building compared to similar buildings
    - Could create hybrid building type with its own standard in between the two types of use
    - Would not be comparing "hybrids" but comparing the office space to office space, and school space to school space
    - Some mixed-use can drag the scores of high performing spaces down (I.e. a restaurant uses a ton of energy and brings down the score of the office buildings) - in effect supporting a "hybrid" comparison
    - Concern about buildings without sub-meters
    - Can you make adjustments based on mixed-use energy use types
    - Even within a single building, treat separate spaces as separate property types – one could be in compliance and the other out of compliance
    - What if part of the building is small enough to preclude the space from having to meet BEPS? Legislation applies to the whole building not the different mixed spaces so as long as the building is subject to BEPS, the space is also subject to BEPS
    - Potential pushback from certain property types (office buildings wouldn't want to be impacted by other uses)
- How do these EPA categories align with DC building codes? A lot of correlation, not a perfect match; Scenario 4 likely the highest correlation due to the granularity of property types
- Do any scenarios consider the age? No, data shows there is no correlation between age and ES score; not a strong argument for separating by age
- How do we compare affordable housing vs. Market-rate; is it equitable to compare the two property types? --> some analysis has shown that this is not a driver of energy use

Key Takeaways

- Most liked Scenario #3 with multiple use breakdowns, but concerned that there is enough data to be able to breakdown properly
- Need to have some sort of robust grouping to spark competition amongst similar property types.
- Property type breakdown should be more granular than scenario #1
- DOEE should run analysis to determine how we should classify building types and present actual numbers with different breakdowns of property types
- Start with Portfolio Manager types for simplicity, but decide where to get more/less granular if/when statistical analysis shows significant differences

Topic # 3 - Data Verification

Section 301(b)(1)(B): DOEE shall establish reporting and data verification requirements for each 5-year compliance cycle.
Section 302(a)(2)(F): Every 3 years the owner, or the owner's designee, shall perform a third-party verification of its benchmark and ENERGY STAR statements in accordance with requirements specified by DOEE.

Scenario 1	Scenario 2	Scenario 3	Scenario 4
Reporters must **submit** the **ENERGY STAR Portfolio Manager Data Verification Checklist**, signed by a trained individual whose professional license or training program credential is recognized by the District. Data verifiers may **be in-house building staff members or 3rd party professionals**.	Reporters must **complete** the **ENERGY STAR Portfolio Manager Data Verification Checklist**, signed by a trained individual whose professional license or training program credential is recognized by the District. **Data verifiers may be in-house building staff members or 3rd party professionals**. The Data Verification Checklist will only need to be produced **on request** of the District; building owners must retain the most recent signed Data Verification Checklist for at least three years.	Reporters must **submit** the **ENERGY STAR Portfolio Manager Data Verification Checklist**, signed by a trained individual whose professional license or training program credential is recognized by the District. **Data verifiers must 3rd party professionals not affiliated with the owner or the property.**	Reporters must **complete** a **Data Verification form of DOEE's design**, signed by a trained individual whose professional license or training program credential is recognized by the District. **Data verifiers may be in-house building staff members or 3rd party professionals**. The Data Verification form will only need to be produced **on request** of the District; building owners must retain the most recent signed Data Verification Form for at least three years.

Data Verification Checklist

- Energy Star checklist is already developed, no need to recreate
- Portfolio Manager already being used, so stick with EnergyStar checklist
- EnergyStar already nationally recognized – ease of use because of familiarity
- EPA is aware that Portfolio Manager increasingly being used for local compliance
- EPA verification could change, at which point DOEE could reevaluate
- Good to follow Energy Star certification requirements to align the two and allow Energy Star Certification as alternative pathway
- QA needed to ensure accuracy/honesty - audit 5% annually with heavy fines?

In-house vs. 3rd Party

- Merit to 3rd party requirement protects against project teams gaming the system
- In-house supported – OK with Montgomery County model
- Owners prefer not to hire outside staff
- Prefer to have flexibility allowing in-house or 3rd party, though might be easier to outsource in practice
- If fines are significant enough, owners likely will outsource to 3rd party to ensure accuracy
- Budgets are being set now and would need to know ASAP if 3rd party needs to be budgeted for first year
- Paying to train people or paying for 3rd party - may not a big difference in the end
- Owners could get in-house verifier or 3rd party to rubber stamp false data anyway – neither option guarantees accuracy; More important to make an example of those who break the rules; Only way to avoid is if DOEE conducts internal verification
- Montgomery County has had trouble getting 3rd party verifiers??
- If allow in-house, employers might be willing to train staff which has trickle down benefits
- Spot audits could help ensure accuracy of either in-house or 3rd party
- Concern over in-house opportunity to massage the numbers, or miss inaccuracies
- Anecdotal evidence that 3rd party providers are less rigorous
- If allow in-house, require 100% audits. Much higher potential for intentional inaccuracies.
- Smaller buildings will have much higher burden for verifying; Allow different standards for smaller buildings? SEU assistance?

Scenario A	Scenario B (in addition to those in Scenario A)
• Building Operator Certification (BOC) - NEEC • Building Energy Assessment Professional (BEAP) - ASHRAE • Certified Energy Manager (CEM) - AEE • Professional Engineer (PE) - National Society of Professional Engineers • Licensed Architect - National Council of Architectural Registration Board	• Registered Architect (RA) - AIA • Certified Energy Auditor (CEA) - AEE • LEED-AP O+M – Operations + Maintenance specialty - USGBC • LEED-Fellow - For outstanding APs - USGBC • Building Energy Modeling Professional (BEMP) - ASHRAE • Commissioning Process Management Professional (CPMP) - ASHRAE • Operations and Performance Management Professional (OPMP) - ASHRAE • Certified Commissioning Professional (CCP) - BCA • Associate Commissioning Professional (ACP) - BCA • Sustainability Facility Professional (SFP) - IFMA • Certified Facility Manager (CFM) - IFMA • Certified Building Commissioning Professional (CBCP) - AEE • Certified Measurement and Verification Professional (CMVP) - AEE • Existing Building Commissioning Professional (EBCP) - AEE • RPA/FMA High Performance Designation (RPA/FMA-HP) - BOMI • Systems Maintenance Technician (SMT) - BOMI • Systems Maintenance Administrator (SMA) - BOMI • Real Property Administrator (RPA) - BOMI • Certified Property Manager (CPM) - IREM

Credentials

- PE and Cert Energy Manager is good start
- EPA only allows licensed architects or engineers to verify Energy Star certification; but only have to sign the sheet, and don't have to actually visit buildings.
- Important to have professional license at risk, list should be kept very short (Scenario A only). Don't allow DOEE training course to qualify.
- BEP or CEM training supported by DOEE would be more useful and robust than own data training program
- Concern about list being too restrictive and creating bottleneck

DOEE Certification Idea

- DOEE certification could be interesting addition, but shouldn't be the only option as many people already qualified
- District could offer more trainings for Cert Energy Manager which is more valuable instead

- District training program good for job training
- DC accreditation should only be in addition to other national certifications ("or" not "and"), otherwise will be onerous on national/regional owners
- DC accreditation likely cheaper for building owners because is expensive to hire PE for a simple task like this
- Additional credential (DOEE + PE) likely to receive pushback
- Don't worry about professional accreditations, instead create vetted list of preferred providers who can be kicked out of program if violating rules.
- Basic online training by DOEE in addition to professional accreditation to get on approved list

Key Takeaways

- Use Energy Star data verification checklist
- Who? No consensus on whether in-house or third party should be allowed.
- Lots of focus on how to enforce; mostly centered around need for DOEE to audit the verifiers and crack down on errors.
- DOEE accreditation could be valuable work force development tool, but shouldn't be required in addition to other qualified credentials as likely to receive pushback from market. May be better for DOEE to support more broadly applicable accreditation (CEM?) instead of own credential.
- Best to require teams to submit the verification checklist to DOEE at the same time as benchmarking data.

Topic # 4 - Enforcement

Section 301(g): Buildings failing to comply with the building energy performance requirements at the end of the 5-year compliance period shall pay an alternative compliance penalty established by DOEE. Penalties collected pursuant to this provision shall be deposited into the Sustainable Energy Trust Fund.
Section 301(i): DOEE may impose civil infraction penalties, fines, and fees as sanctions for a violation of this section or a regulation issued pursuant to this section, pursuant to the Department of Consumer and Regulatory Affairs Civil Infractions Act of 1985, effective October 5, 1985 (D.C. Law 6-42; D.C. Official Code § 2-1801.01 et seq.).

Scenario 1	Scenario 2	Scenario 3	Scenario 4
Fines based on **a building's relative distance from the standard** at the end of the compliance period. An office building that is **5 points below** the ENERGY STAR Score standard will be fined **5 times $x** for failure to comply with BEPS.	Fines based on a **building's relative distance from completing one of the pathways.** Each pathway would have its own fining schedule. • **Performance**: A building that **reduced their EUI by 18%** would be fined **2 times $x** for failure to meet the 20% reduction target. • **Prescriptive:** A building that implemented **3 out of 5** required efficiency measures will be fined **2 times $x** for failure to meet the prescriptive target.	**Flat fine** for failure to comply with BEPS. DOEE will set the fine at a level in which the relative cost of non-compliance is **higher than the cost of compliance.**	Fines based on **square footage. Larger buildings would face larger total fines than smaller buildings.** DOEE will set the fine at a level in which the relative cost of non-compliance is **higher than the cost of compliance.**

Scenario 1

- What if we spend thousands of dollars into making the building better but it doesn't help the score? Then Scenario 2 makes more sense
- Puts a price on it, like NYC carbon tax.
- What happens if EPA updates EnergyStar standards in the middle of the cycle? DOEE would recalibrate.

Scenario 2

- Weakness: On the list of prescriptive, most people will complete the cheapest, lowest-hanging fruit versus the more substantial ones. Assuming all the prescriptive items on the list are equal.

    - Weighted system = too complicated.
- Scenario 2 is only one that makes sense to motivate action.
- Puts a price on it, like NYC carbon tax.
- Likes this as it is an incentive to get people to make tangible steps. Makes it more realistic and attainable as oppose to giving up.

Scenario 3

- Does not make sense. You need to get WORST performers up.
- No, needs to be based on square footage.

Scenario 4:

- This makes a lot of sense. But also looking for a hybrid. Wants EUI
- Wants bigger buildings to pay more.
- Doesn't like it because there is no direct correlation between energy and square footage. Unfair.
    - But does square footage correlate to ability to pay? Larger buildings have larger capital.
- Distinction by building type is better than square footage
- Does not make sense. You need to get WORST performers up.
- Bigger buildings have sustainability teams so are least likely to be impacted by fines.

Other Scenarios

- Combo of 1 and 4
- Combo of 2 and 4
- Combo of 3 and 4
- Scenario where the fine is returned to building owner if they get back into compliance.
- Non- financial fines
    - Ex. Not being able to pull permits
    - Training school like driving school
    - Jail time
- Rewarding early adopters?
- Negotiate. We have a $1M fine over your head but show us your plan. If you show us a plan, then we will negotiate the fine back.

Miscellaneous

- Any distinction for type of building? Housing would have different rate than warehouse facility or offices. Like buildings are being compared to like buildings. Maybe have different tiers of fines?
- Tenant Issues
    - Don't want fine to be distributed to tenant. Make sure this is not passed on to tenants.
    - BIG Theme: Multifamily buildings to take into consideration tenant behavior. Tenant behavior can't be changed so don't punish building owner. Suggestion: educate tenants on energy efficiency
    - Green leases - sharing savings with tenants.
- Frequency/Timing
    - Would the fines be at the end of the 5 year period as a onetime thing? Or for each year

after that?
    - Is this a one-time fine? They feel like it should be annual or every 5 years.
    - They need to be able to calculate the fine years out in order to know how much
    - How frequent can the fines be revised in case we are setting the fines are the wrong level?
    - How frequent would we increase the fines? How often would we reset the fines if we are not seeing the energy savings we needed?
- Clarifying statement (important for education) - fines will not fund the DC Green Bank but will go back into the SETF.
- If a building knows the upcoming modifications but it's outside the period, they can ask for an extension from the Green building advisory council.
- No incentive for buildings who are already performing. Standard increase every five years. But will be publishing benchmarking data every year.
- In those 5 years buildings cycle through owners. We need transparent data in order to buy at good price. Data transparency when buying and selling.
- Word of caution: In New York there is a loophole in which if the profit/operating costs goes down on a building (because of a fine) then the building's tax goes down. Don't design a fine that saves on taxes.
- CRIAC bill - churches felt it the most
- What happens if they lie or be fraudulent?
- Pitfall = number of properties. Deep enough pockets. Ex. Billy owns 80 properties but only 1 is fined. Just pay it.
- DC versus non-DC; Local DC owner vs. international org who has a lot of properties in DC and around the world.

Key Takeaways

- Most preferred fines based on square footage
- Most preferred distance from standard in EUI terms to determine fine
- Tenant issues when it comes to behavior