

GOVERNMENT OF THE DISTRICT OF COLUMBIA

Department of Energy and Environment



BEPS Working Group Session # 4 - Energy Efficiency Strategies and the Prescriptive Path September 17, 2019

Working Principles based on best practices:

- Rule reminder – prescriptive pathway equal to 20% performance pathway
- Break down prescriptive list by
 - Minimum requirements (must-do's and same across all lists)
 - Operations & Maintenance strategies
 - Project-Based strategies
- Create prescriptive paths based on property types – probably 4-5 high level categories (will not match the 80+ property types available in Energy Star Portfolio Manager)
- Weighted values for each action item based on energy savings potential (DOEE or 3rd party)
- Present action items based on cost/time categories:
 - Easy – simple upgrades or operational changes
 - Medium – moderate renovations
 - Hard – substantial improvements

Energy Efficiency Strategies for the Prescriptive Pathway

Should we have minimum requirements or prerequisites?

Operations & Maintenance Strategies list (anything missing?)

- If the prescriptive pathway also equals 20%, why would anyone take the path if it's the same thing but more restrictive? *There isn't a required savings, and there isn't a check on the actual savings so it is a more assured way to comply with the law given the knowledge that doing set actions is compliance regardless of compliance.*
- Minimum requirements make sense
- What if you have old systems and can't meet prereqs?
 - Does not seem like all properties cannot do (Energy Efficiency Best Mgmt Practices)
 - Condos bypassing timing because they couldn't agree
 - Controls upgrade alone cost 100k
 - Should not be a prerequisite
 - Might be reading the line too literally (could be just manual)
 - If someone cannot do a best practice then there should be a system to document this and be exempted from that part of the prerequisite
- Weight things differently so that the prereqs are more incentivized and then remove them as

prereqs

- Level 1 ASHRAE should be prereq or should have some weight
 - Scope defined by DOEE. Have RFP to have company do it for a rate (could also be HUB)
 - An ASHRAE-level audit gives you an inventory of what's in the building, how it is operating/used, and can help breakdown energy use in the building as well as offer no-cost, low-cost, and capital measures so that you could implement.
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- Energy metering would be good as a prereq
 - For campuses
 - Submetering within office building is difficult
 - Might be tough the first round
- Existing Building Commissioning should be a minimum requirement
 - Not necessarily going to find savings opportunity
 - Lot of overlap with best practices
 - Everyone agrees
- These should be different depending on the type of building. A minimum requirement could be information gathering that can be used to design future strategies. Asset inventory and a survey that would be given to DOEE for future planning and programs.
- Wouldn't want to have an audit be a required prerequisite – the more sophisticated building managers know where the areas of weakness are in their buildings
- Carr: No, you're already requiring the improvement, this feels remedial
- Integral: Every building can benefit from retrocommissioning and lighting upgrades.
- SWA: Maybe an ASHRAE Level II would be good, the list of prescriptive measures are going to be based on the findings of an audit. Having an expert prioritize those for you and highlight the points for the DC law. It would be a head start into what should already be done.
- A well done ASHRAE II is "my MRI that tells me where my problem is" if I don't know where the problem is, I could just throw solutions at it and not solve the problem.
- Integral: Maybe you demonstrate that you have a plan and don't need an audit, you should be able to get exempted from the ASHRAE II requirement.
- If you're going to have minimum requirements, it should depend on how much they cost. Might be worthwhile to highlight the ones that you think will generate the most savings with an eye to recommending those without requiring them.
- Policy level items might be really onerous for implementation.
 - Hard to get written up, but even harder to get the operator to follow
 - LEED policies do not necessarily save energy and create a lot of headache
- How to influence actual operations
 - Providing incentives for building operators
- Hybrid between prescriptive and actual performance
 - But want to be able to underwrite these upgrades based on can savings
 - Don't have prereqs based on performance
- How do you document these items?
 - Will there be review fees?
 - Most verifiable:
 - Commissioning

- Weatherization
 - Training Plan (Certificates)
 - All these can have third party – market can determine the cost - DOEE should require that a third party (the implementing party) to verify the action
- Training
 - Staff Training is key. Yes to minimum prereq, it helps to have a baseline of training. Instead of saying “we need to be better” it’s “this is how we get better.” Operational training.
 - What kinds of training:
 - Equipment training
 - Company figures out what works for them
 - LEED training requirements will preclude smaller operators (equity)
 - Tenants need to be trained
 - Commercial and Residential
 - This is getting easier to do because of young employees
 - What if no one shows up?
 - Need something like residential engagement
 - What happens when there is staff turnover?
 - New staff needs to be required to trained
 - DOEE sponsored training will be helpful to reduce costs
 - Let training be of existing training
 - Training plan versus equipment management plan
 - Marry these two policy concepts. Let the training being learning those documents?
- How should this be verified? Should DOEE Require 3rd party commission?
 - DOEE should do random audits to hold people accountable
 - Let other property owner’s staff serve as the 3rd party for free
 - Have existing commissioning yearly but every couple years have a 3rd party
 - Would flag that ensuring O+M activities have happened is an issue – could be invoices, training certificates, onsite inspections
- =-
- Should we include audits if they aren’t included as a prerequisite?
- There are some tools out there that can separate heating and cooling loads from baseload, somewhat like a virtual energy audit
- Need to include tenant education around energy consumption (several affirmative statements from other attendees)
- Provide some sort of quiz or test that a building owner could give their staff to evaluate where they are so that they have some sort of sense of whether they need training or not?
- List of options of staff trainings that could qualify for staff (for example, some companies give a raise to staff who pass their BOC training)
- Green leases – percentage of tenants who sign green leases. (some support, some opposition, agreement that it would educate people on the fact that it is a potential option)
- Systems cleaning (like chiller)

Project-Based Strategies (anything missing?)

- Need to start with an audit
- If Retrocommissioning is a prereq
 - Buildings today might not be running a piece of equipment and running it won't save energy
 - Only hesitation is that this is money on soft costs not hard costs
 - DOE could maybe put out a SOW to keep work or provide some help
- DCRA code commissioning is getting better because DCRA is doing audits
- Off the shelf Scope of Work would be super helpful for all items
- Duct sealing needs to be in HVAC
- Plug load control with occupancy sensors
- Building automation systems needs training
- Direct outdoor air systems
- Fault detection
- Natural light as a lighting alternative
- Sensors on operable windows to control HVAC
- Points for certain things you need to have a third party (if you didn't meet 20%)
- Could this determine the fine?
- Shading from trees
- Economizer operation
- Heat pumps and fuel switching
- Smart thermostats for the residential space
- Glazing
- Water efficiency measures that also reduce energy, especially for residential
- Sector-specific strategies (restaurants and hotels) that apply to particular types of equipment
- Most of the list was Commercial buildings. Multifamily buildings are not represented on this list.
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Alternative Pathways (should we offer these pathways?)

- Certified ENERGY STAR score should not be part of this
- Audit recs should have some guideline of which recommendations
- Might not get at the goal of reducing GHG
- LEED Gold or Platinum but modifying the credit list for DC specific
 - MoCo does something similar to this
- Seems like a small list of people who would proceed with this
 - Paper work reduction plan
- Should folks be required to get certified?
 - For: How else would you verify they met the intent of the certification?
 - Against: Affordable housing might not have the funding. If someone else will pay for it then sure, but otherwise it's prohibitive.
 - Nonprofits/Affordable housing could receive benefits?

- Seems simpler to go down this route if you are already using these programs. Also makes sense if you just miss the threshold by a little bit, you wouldn't be stretching much to get one of these – would make sense for a building that is close. Also, with ASHRAE recommendations, there may be different options offered (like multiple chiller options) where you would choose one, so you wouldn't be able to do all of them.
- Make sure that the energy components of each of these are emphasized, there are ways to get certification for some (Petal) that don't include energy.
- Green Communities will be more stringent in 2020 for affordable MF housing
- Green Globes points can come from everywhere, that certification program isn't equivalent to the others
- Building operators: are doing LEED, ENERGY STAR, and ASHRAE II audits, aren't doing the others

Key Takeaways:

- Retro-commissioning should be a prerequisite
- Weight things differently so that the prereqs are more incentivized and then remove them as prereqs
- Need for DOEE support in training, off the shelf SOWs, and finding vendors
- DOEE should do random audits to hold people accountable
- Off the shelf Scope of Work would be super helpful for all items
- Alt Compliance pathways seem like a lot of extra work than just the normal prescriptive pathway
- Need to think more about Multifamily properties

Prescriptive Compliance Process

What can DOEE do to help out-of-compliance buildings stay on track and reach their goals? (Should they submit a 5-year plan? Have a 2-year check-in with DOEE? Other ideas?)

- Keep properties on track right out of the gate, so base that first score on verified data so that you don't get a surprise in year 3
 - Maybe first benchmarking report for buildings that haven't previously been required to do so, should be verified so that we start from a baseline that is more accurate and because they will likely be less experienced
- Voluntary 5 year plan is good idea. Useful as something to point to in order to pitch internally re: funding/planning. Could also help with early compliance to encourage getting ahead of it with currently planned capital projects (not to wait to be out of compliance but rather get ahead for marginal changes)
- Turnover is a concern. Having a plan on file could be a helpful backstop/resource in order to keep properties moving forward.
- 5 year plan would be optional but DOEE or partner review – maybe coaches – would provide feedback to assist the building to get on and stay on track
 - Lessons from GBAC: institutionalizing proactive planning piece (like DHCD requiring

charette to be eligible for funding) – for all sectors or those that will be particularly challenged

- Check-ins on how they're doing annually would also be helpful – like the scorecard – to give buildings feedback on how they're doing throughout the cycle
 - Could also be something a coach could help with
 - Get Green Button data feeding into it – could allow owners to opt-in so that all the data is in one place
- Give certainty – at least for the measures on the prescriptive path for the 1st cycle. Have it set and keep it set through that first period.
- Encourage thinking about deep green retrofits and offer flexibility to meet that with delayed compliance
- Identify a certified list of vendors who can actually do the work and offer some sort of specific training that owners could look for as a credential in choosing someone to do the work
- Resources for those who are least able to comply:
 - Energy coaches who can help navigate the process, incentives, etc. like NY retrofit accelerator. Could even help buildings who are struggling & getting caught in each cycle to set up something like a green revolving fund to pay for the strategies they'll need in the next cycle
 - knowing which things on the list require permits + realistic estimates of permitting times to aid in planning (plus smooth permitting process on the DC agency side because not all are DCRA-only)
- Ideally having an energy model for every building is a starting place for all the prescriptive paths because that will be the most helpful for actual building owners
- Have a personal conversation. Providing tailored information to the needs of specific projects.
 - Needs to have a comprehensive awareness of what is possible, and be comfortable advising projects in early planning phase without needing design schematics, etc.
 - Is this purely compliance related, or is there a desire/expectation that DOEE can provide TA?
- Should DOEE establish check-in points with deliverables or is it up to owner to meet the 5 year deadline?
- Provide a list of actionable items – this will essentially be the prescriptive path.
- Make sure that Construction Codes are aligned with BEPS requirements
 - Unclear – perhaps make sure that BEPS Prescriptive requirements are not contradicted by code?
- Show owners the opportunity cost of non-compliance. What will it cost if don't do anything.
- Mid-term progress reports sent to owners or check-in mid compliance pathway to ensure on track if benchmarking data doesn't show progress.
- Start with condos as they are likely to be the worst offenders for late compliance.
- Provide the actual kWh or therms to reduce to get into compliance (for performance pathway). Owners may not understand what 20% reduction means.
- Need to have an allowance for extenuating circumstances if tenants change mid-compliance pathway (ie data center moves in midway through)

What can DOEE do to encourage early compliance (first 2-3 years) within a certain compliance

cycle?

- Central plan study – doesn't look at envelope but looks at the other systems
- Solicit regular feedback from the buildings in between cycles to see what is working, not working, etc. so we can encourage innovation, troubleshoot, etc. and find ways to be able to share that information/facilitate those conversations throughout the cycles (maybe at the hub?)
- Strengthen incentives up front – like ITC that ramps down over the performance period
- Ensure that fund is available for specific ECMs called for in prescriptive pathway
- Allow early compliance savings to count towards future compliance periods
- Allow early compliance savings to count towards other buildings in your portfolio
- Provide bonus points in the weighting process for early compliance.
- Fast tracked permits for prescriptive measures.
- Bigger incentives for early compliance.

What can DOEE do to encourage going beyond the minimum requirements (planning beyond 5 years or higher % reduction) for a certain compliance cycle?

- Accept delayed compliance for those pursuing deep energy retrofits – might take longer than 5 years to demonstrate those savings. Would be great for DOEE to take that into account and accept that (delayed compliance, etc.) to encourage above-and-beyond behavior.
 - Delayed compliance would require a plan for how they'll come into compliance. Maybe require energy model in order to grant delayed compliance
- Coaches to help buildings make a plan for how they could think beyond one cycle – financing as well as the actions
- Though we're trying to encourage, enforcement processes have to be effective, efficient and **start from the beginning**
 - Could make fines lower if you made a good faith effort, but fined more if you didn't do anything (with the theory that we want everyone to do something, to try)
 - Possibility to tie fines to energy draw / energy use? Or like NY, where it is based on how far you are from where you need to be?
 - Coaches could be helpful in adjudicating what a good faith effort looks like
- Fast tracked permits for prescriptive measures.
- Deeper retrofit will have higher ROI – link with specific financial incentives for going deeper.
- Share savings across portfolios, will encourage deeper retrofits where appropriate.

Compliance submission? What kind of documentation should/could we collect?

- Receipts/invoices?
- DC SEU has very detailed records for those that they work with but would be resource intensive on this kind of scale
- USGBC: similar process?
- Look at what DCRA is already doing – they have done a lot to ensure quality work is getting done.
- Concern over as-built vs design – how to enforce
- Checklist with signed contract by vendor

- Engineer or vendor could sign off, especially if they have a professional authorization
- If the work goes through permits, DCRA could verify. Perhaps embed BEPS compliance within DCRA permit review process
- Use an approved verifier list.
- Third party reports attesting that work was completed.
- BEPS field inspectors – concerns over difficulty of field verification and challenges with scaling up the inspections to meet compliance.
- Keep documentation minimal to keep soft costs low and maximize budget for ECMs.

Do we count projects done 2019-2020 towards the prescriptive path? Any thoughts on allowing this?

- Yes – that would be helpful to encourage early compliance. Don't dis-incentivize good work just because it's done early.
- Would need to be verified.
- Consider projects completed in 2018
- Helps to reduce incentive to run a building poorly or delay improvements to set a lower baseline (perhaps not a big concern)
- Could get some lesser amount of points for things you've done in the preceding X years
- Yes, should allow because 2019 energy data used to determine the median
- Better Buildings Challenge allowed 3 years of work ahead of participation to count – good precedent. Shouldn't be 3 years, but shows a desire.

Does the 2nd compliance period list look different? Are they one-and-done or continuous types of processes?

- Yes – like audit + low/no cost measures in Round 1; then actually implement other strategies in Round 2
- Leave flexibility somehow to adapt prescriptive path to capture advances in the field (technologies, etc.) so that the list can evolve alongside the market.
 - Other ideas to encourage innovation
- Have a set list of prescriptive steps set by the start of the first year, and as suggestions come up, say they will be considered for the second (people need some degree of certainty)
- Perhaps require energy model every 2 cycles
- Projects shouldn't be able to do the same prescriptive measures each cycle. Will need to evolve.
- Require performance pathway for 2nd consecutive compliance cycle.
- What if ownership changes in between? Is that a reason to allow the flexibility of doing prescriptive again?

Other notes:

- How will this align with DCRA and indicate which ones will need permits? Potential to be burdensome (DCRA isn't the only one who might need to weigh in on a permit) so on the government side, need to get DC agencies aligned so that it is a smooth process to get permits through and facilitate communication.

- Cost inequity – is there a way to consider a financial metric too? (i.e. for buildings who are really below the standard, option to spend a certain amount of \$\$ but maybe that doesn't get them to the % reduction)
 - Perhaps delay in compliance is a way to address this: those who request it could be asked to work with an energy coach to chart their path
- Would the prescriptive list be static or be customized for the building (i.e. you just replaced a boiler so that's not on your list for options)
- Will owners be required to decide which way they plan to meet the standard from the start? -- consensus = no, flexibility is key
- How will DOEE assign what savings will come from each strategy?
 - Doing that by property type make sense, to tailor those options and weights
 - Interest in interactive tool?

Key Takeaways:

- Flexibility – to choose which pathway and change their mind during the cycle; to accept potentially delayed compliance for those who are pursuing deeper, more intensive strategies; to have the prescriptive path evolve each cycle – is key to encouraging people to comply and do more
- Certainty - for the first pathway, it is important to establish that before the first cycle and leave it static. Leave flexibility to adopt new things for 2nd cycle and beyond.
- Coaches or some sort of navigator to help offer tailored help to building owners, to identify not only strategies, but financing and encourage thinking beyond one cycle, would be really helpful.
- Continued communication throughout the compliance cycle.
- Alignment across DC agencies to ensure smooth permitting & other points of collaboration. Make sure that BEPS Prescriptive requirements are not contradicted by code.
- Incentivize or weight prescriptive path items for early compliance (2-3 years)
- Include ability to count 2019-2020 projects toward first compliance cycle.
- Yes to encouraging voluntary 5-year plan for compliance.
- Need vetted list of service providers/contractors/vendors.