



SIERRA CLUB

WASHINGTON D.C.

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Department of Energy and Environment
ATTN: Building Performance and Enforcement Branch
1200 First Street, N.E., 5th Floor
Washington, DC 20002

Submitted via email to info.BEPS@dc.gov

RE: Sierra Club DC Chapter Public Comments: BEPS

We appreciate the opportunity to provide comments on the Department of Energy and Environment (DOEE) proposed rulemaking establishing Building Energy Performance Standards (BEPS) program rules published in the DC Register on December 4, 2020.¹

The Sierra Club DC Chapter supports the BEPS program. BEPS is a ground-breaking program that has the promise to fulfill one of the Sierra Club DC Chapter's main goals: to achieve ambitious and just climate solutions through strategies such as maximizing energy efficiency in the buildings sector of Washington, DC. In its 2018 greenhouse gas (GHG) inventory, DOEE found that 73 percent of GHG emissions in DC came from the buildings sector.² Improving the efficiency of existing buildings through BEPS is an important step to meet Clean Energy DC's goal of reducing 797,000 tCO₂e/yr by 2032 through Existing Building Policies.³

We also express our appreciation to DOEE for releasing the 2021 BEPS standards emergency rule⁴ by its January 1, 2021, statutory deadline, as well as the work from the members of the BEPS Task Force.

¹ D.C. Register Vol. 67, No.50, pp. 14269-14280.

² <https://doee.dc.gov/service/greenhouse-gas-inventories>

³ https://doee.dc.gov/sites/default/files/dc/sites/ddoe/page_content/attachments/Clean%20Energy%20DC%20-%20Summary%20Report_0.pdf

⁴ D.C. Register Vol. 68, No. 1, pp. 161-170.

We are also taking this opportunity to share our visions for the future of BEPS. These comments are organized first by general comments, then comments relevant to specific sections.

An Appropriate Standard to Achieve Greenhouse Gas Savings

The Sierra Club is primarily interested in this rulemaking due to the potential for reductions to the District's greenhouse gas (GHG) emissions. To that extent, we support efforts to make this rule workable in reality. This includes sufficient incentives to comply and sufficient penalties to deter non-compliance. The BEPS standards should also be sufficiently stringent to achieve the energy efficiency goals set as part of the District's Clean Energy goals, including for the District's goal to reduce GHG emissions to 50 percent of its 2006 baseline by 2032, which would roughly coincide with the end of the second BEPS compliance cycle.

Furthermore, we believe that the "measuring stick" for this rule should have as close a relation to GHG emissions as possible. Sierra Club supports using GHG emissions as the direct measurement for the BEPS program, but we understand the challenges with this proposal given the constraints within the Clean Energy DC Omnibus (CEDC) Act. However, we are encouraged that the CEDC Act also requires DOEE to publish a report on potentially using GHG emissions as the measure for the BEPS program. We fully support that goal. DOEE should initiate work on this report as soon as practicable to begin this important study with a clear commitment to move towards GHG-based BEPS.

There are also opportunities to bring the BEPS program into closer alignment with the District's decarbonization strategy. Building decarbonization is only realistically achievable through electrification, and any BEPS requirements should be consistent with that goal. Accordingly, we fully support moving towards BEPS standards and energy reduction targets that are enumerated in site-energy terms. As DOEE staff is aware, source-energy measurements are calculated by a type-specific, site-to-source multiplier against the site (utility) energy use. The multiplier for electricity is currently 2.8, while those for fossil fuels are much closer to one. These multipliers mean that standards and savings targets based on source-energy will disincentivize electricity use, much to the detriment of the building electrification. While the CEDC Act initializes BEPS Standards around source-energy metrics like the ENERGY STAR Score, it requires >20 percent savings enumerated in terms of Site Energy Use Intensity (EUI). DOEE should not deviate from the principle of using site-energy savings targets in either its Prescriptive Pathway measures or in any alternative compliance pathways it creates. Unfortunately, the proposed Standard Target Pathway, in setting savings targets in terms of the BEPS standards (always source-energy terms), fails this test. We devote more attention to the problematic Standard Target Pathway in comments further below.

One alternative compliance pathway we are excited to learn more about is a "deep retrofit" option that would encourage large energy savings through expensive building envelope improvements by providing some relaxation of the compliance timeline. We await further details about this pathway, but we are encouraged by its development. It is important to

publish the details about this pathway to encourage its use by building owners.

Ultimately, there needs to be a fundamental tie-in between the BEPS program and the District's climate goals. We know that DOEE recognizes this and is somewhat limited by the current construct of the CEDC Act to define this for the Performance Pathway. However, DOEE owes building owners an honest picture of the progression of the BEPS program, as well as any other relevant industry trends. For example, a building owner falling into a BEPS compliance cycle might reasonably consider replacing an old, inefficient gas boiler with a condensing boiler. But DOEE knows that any boiler installed in the next 6 years could be operating until 2050 and beyond, by which point the District is supposed to become carbon neutral. It also knows that it will be considering using a GHG-based BEPS metric, perhaps in time for the next BEPS compliance cycle. The building owners deserve to know that sticking with gas or other fossil fuels will risk them falling into noncompliance quickly when compared to converting to an electric heat pump, especially as electricity becomes less carbon intensive. DOEE should use its authority to define the compliance terms of the Prescriptive Pathway, the Standard Target Pathway, and any alternative compliance pathways to prohibit investments in new fuel-burning equipment.

Likewise, DOEE should also make building owners aware of the recent Federal regulatory requirements related to the scheduled phasedown and likely prohibition in relevant applications of hydrofluorocarbon (HFC) refrigerants. By 2036, conventional HFC refrigerants that many buildings' HVAC equipment use will be in extremely limited supply, if not prohibited altogether.⁵ The U.S. Environmental Protection Agency is currently undergoing a rulemaking to schedule a phasedown of these HFC refrigerants according to the requirements of the American Innovation & Manufacturing Act.⁶ The Sierra Club DC Chapter is concerned that building owners may make deep retrofits to their HVAC systems to comply with the BEPS program without realizing the forthcoming phasedown of HFC refrigerants. The Sierra Club DC Chapter sees an opportunity for DOEE to work with building owners, Business Improvement Districts (BIDs) and the Apartment and Building Owners Association to educate them about which HVAC equipment they can purchase that will comply with Federal HFC prohibitions, provide greater energy efficiency savings, and limiting the climate damage from potential leaks by choosing equipment that use low-global warming potential refrigerants.⁷

Concerns With Process Regarding Prescriptive and Alternative Compliance Pathways

We appreciate the extended period, 90 days total, DOEE provided stakeholders to comment on this proposed rule.

⁵ <https://www.congress.gov/bill/116th-congress/house-bill/133/text>

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<https://www.federalregister.gov/documents/2021/02/11/2021-02774/notice-of-data-availability-relevant-to-the-united-states-hydrofluorocarbon-baselines-and-mandatory>

⁷ https://ec.europa.eu/clima/policies/f-gas/alternatives_en

However, we are concerned that we do not have adequate details on the Prescriptive Pathway and some of the alternative compliance pathways already identified by DOEE, such as the “deep retrofit” pathway mentioned during several BEPS Task Force meetings. This makes commenting on several portions of this rule difficult or impossible. For example, DOEE has proposed an alternative compliance penalty adjustment schedule in §3521.3 pertaining to the Prescriptive Pathway, referring to “points” that are to be assigned in a manner yet to be finalized. It is impossible to evaluate whether using points to adjust the compliance penalty is appropriate without knowing how points will be measured, determined, or assigned.

During several BEPS monthly update calls dating as far back as October 2020, DOEE staff has said that it would be publishing a Compliance Guidebook on its BEPS webpage that would contain the details of these compliance pathways, but as of February 28, 2021, it is still noted as “coming soon.” Furthermore, the BEPS Task Force continues to discuss the Prescriptive Pathway.⁸ We request an opportunity to provide comment on these pathways and relevant portions of this rule once we are given notice that the compliance details are fully drafted and published. A 30-day comment period would likely be sufficient, depending upon the level of detail. DOEE should also be willing to revise rules within this proposal if they are impacted by the details of the proposed pathways.

Lastly, there is no requirement within this proposed rule that DOEE publish any ad hoc alternative compliance plans it approves for a specific building owner(s), nor does it appear to do the same for exemptions or delays it may grant under § 3520. A subsection or two outlining DOEE’s commitments to transparency would be appreciated under principles of good governance and fair and equal treatment to all parties.

The Standard Target Pathway is Deeply Flawed

The Sierra Club DC Chapter sees no compelling reason to offer the Standard Target Pathway in the BEPS Program at this time. As described below, the proposed pathway is terribly problematic and may be fatally flawed.

The Standard Target Pathway is not specifically required by the CEDC Act like the Performance Pathway and the Prescriptive Pathway are. Instead, it is an apparent invention of the BEPS Task Force. Because the Standard Target Pathway requires improvements to the building’s Source EUI or ENERGY STAR Score, which is based on Source EUI, it significantly deviates from the pathways defined in the CEDC Act, which require reductions in Site EUI instead. Requiring a reduction in Source EUI to comply with BEPS would be problematic because it would incentivize building owners to replace electric appliances with gas appliances. This is due to the lower site-to-source multiplier for fossil fuels compared to electricity. This type of retrofit would make DC’s goal of being carbon-neutral and climate resilient by 2050 much harder to

⁸ BEPS Task Force Meeting Agenda, March 2, 2021. Item 2.
https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/BEPSTaskForce_MeetingAgenda_2021-3-2.pdf

achieve.⁹ The Sierra Club DC Chapter urges DOEE to base the BEPS compliance requirements in Site EUI or, better yet, direct GHG emissions. As noted previously, DOEE should also ban purchases of fuel-burning equipment for building owners using this measure or any other alternative compliance pathway.

We are also concerned that the Standard Target Pathway could set building owners up for failure. We have seen no suggestion from DOEE that the BEPS standards would stay stagnant in future cycles, nor should they. And nor could they, because ENERGY STAR Scores will shift over time as the building stock changes. Yet, this pathway inherently suggests that the building owner is on a path to future compliance. Furthermore, calculating savings needed to achieve a particular ENERGY STAR Score is far more complicated than prescribing a straight, Site-EUI savings. The ENERGY STAR Score is not linear to Source EUI, and it requires an analysis of building uses and expected energy use. Attempting to convert this to a Site-EUI equivalent to comply with the intent of the CEDC Act would further complicate a conversion. This sort of analysis would probably need to be invented and would come at significant cost. It begs the question -- just which type of building owner this option is intended to serve? The likely answer: not the ones who actually need flexibility and cost-effective options.

Another problem with the Standard Target Pathway is that it would reduce the energy savings that could be achieved through the BEPS program. Building owners would likely use this proposed pathway when its requirements are less stringent than any alternative, leading to lower compliance costs but also lower energy savings. Although using the Performance Pathway may result in higher costs, those costs may still result in a positive return on investment and could be worthwhile, especially considering the broader context of the District's climate goals. Furthermore, the reduction in energy savings is not limited to the first Compliance Cycle if DOEE continues using the statistical analyses (e.g. median) of existing building stock to set BEPS in future cycles. Reductions in energy savings in the first BEPS cycle will result in lower median scores of buildings in future compliance cycles, continuing to stymie energy savings through future iterations. This would be defensible if DOEE had completed an analysis charting out the path to a carbon-free, net-zero buildings sector and determined the final EUI/ENERGY STAR Score targets for its building stock, but this does not describe the BEPS of today.

If DOEE is intent on keeping some form of the Standard Target Pathway, then it should make this pathway only available to building owners that demonstrate, through an energy audit, that it would be cost-prohibitive to achieve a greater than 20 percent Site EUI reduction, i.e. to use the Prescriptive Pathway. This would limit the environmental damage from this provision while giving building owners flexibility when they can demonstrate a persuasive justification.

Subsection 3519.3 specifies that either a Performance Pathway or a Standard Target Pathway shall be assigned to building owners who do not select a compliance pathway. For the

⁹ <https://mayor.dc.gov/release/mayor-bowser-commits-make-washington-dc-carbon-neutral-and-climate-resilient-2050>

aforementioned reasons, the Standard Target Pathway should not be offered as a default pathway even if DOEE decides to maintain some version of the pathway.

Comments on Prescriptive Pathway Proposals

We support DOEE's proposal for the Prescriptive Pathway that the targeted energy savings exceed the nominal 20 percent target because of the typical gap between theorized and realized savings in real projects.¹⁰

However, we caution DOEE that the CEDC Act, Section 301(d)(2), requires that the Prescriptive Pathway achieve "savings comparable to the performance pathway," or 20 percent site-energy savings. We believe that this language supports DOEE's proposal to require a larger savings goal as necessary to realize energy savings of 20 percent, but DOEE should not pick this larger value arbitrarily. The value should have a defensible basis that is memorialized in a manner that would withstand a legal review.

We support DOEE's proposals requiring building owners to obtain an energy audit showing anticipated energy reduction from energy-efficiency measures, and also requiring these measures to exceed the savings requirement for the current compliance cycle.¹¹ As one suggestion, DOEE might require building owners that are likely to undergo multiple compliance cycles to propose measures that would save enough energy to achieve the BEPS standard or some value near it, e.g. five percent better than the BEPS standard. Any final requirements in this vein should be added to the text of § 3519.6(b).

Incentives for Early Implementation

The proposed rulemaking does not incentivize building owners to retrofit their building earlier than 5 years. However, earlier implementation of energy-efficiency measures would result in GHG reductions.

DOEE should consider awarding building owners a credit towards a future BEPS cycle or a financial reward that recognizes the additional energy saved from a building that was retrofitted earlier than required, as verified with building energy-use data (annual benchmarking) and the report of completed actions.

The building-owner representatives on the BEPS Task Force, and other industry representatives, might be best suited to determining which incentives, if any, would be most likely to result in early implementation of energy-saving measures.

¹⁰ BEPS Task Force Meeting Slides, pp. 15-16.

https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/BEPS_TaskForceMeeting_2-2-2021.pdf

¹¹ Ibid. at pp. 13-14.

Comments on Specific Subsections of the Proposed BEPS Rule

The comments preceding this section were separated by topic to discuss major concerns or general topics that do not neatly fit into the proposed text. This section contains comments listed in order by section. When proposed changes are shown, the additions are underlined and the deletions are ~~struck through~~.

§3518.1(e)

This section contains references to §3518.2(a) through (d). This appears to be a typo, and this should instead reference § 3518.1(a) through (d).

The subsection specifies the applicable EUI average for the period from 2018 to 2019 as the baseline. It is not clear if this is meant to establish the baseline as only the 2018 calendar year, or if it includes the 2019 calendar year. If the latter, it should specify "through 2019" as suggested below.

This subsection should specify "greater than" before the "twenty percent (20%) reduction" to be consistent with the performance pathway requirements.

Proposed changes:

Only for the BEPS Period beginning on January 1, 2021, buildings may follow a 2021 pathway option for each of the pathways described in § 3518.21(a) through (d) by using the applicable EUI average for the period from 2018 ~~to~~ through 2019 as the baseline to compare to the applicable EUI for 2026 in order to determine whether the greater than twenty percent (20%) reduction or comparable energy savings requirement has been met.

§3519.3

For reasons explained earlier, DOEE should only assign the Performance Pathway when the building owner fails to choose a pathway.

Proposed changes:

If a building owner does not select a compliance pathway as specified in § 3519.2 or does not receive DOEE approval for a pathway, DOEE shall assign a performance pathway for the building. ~~The assigned pathway shall be either a performance pathway or a standard target pathway.~~

§ 3520.6

There is a typo and use of an undefined term, when the defined term of “building owner” should be used instead.

Proposed changes:

For a ~~property to building~~ owner to demonstrate good cause for granting a delay of compliance under § 3520.5, the ~~property building~~ owner must provide substantial evidence that meeting the requirements of § 3518.1 is practically infeasible, including for any of the following reasons:

(remaining subsections unchanged)

§ 3521.1

This subsection should probably exclude building owners covered by § 3521.2. It may also be useful to clarify that the penalties assessed are “per non-compliance” so that a building owner can face penalties for multiple buildings they own.

Proposed changes:

A building owner that fails to demonstrate complete implementation of a compliance pathway as required by § 3518.1 at the end of a Compliance Cycle shall be assessed an alternative compliance penalty no greater than the following amounts per non-compliance, unless the non-compliance is covered under § 3518.2. The maximum penalty shall be reduced proportionally to the building’s performance relative to its pathway target as described in § 3521.3.

§ 3521.1(a) through (f)

The penalties should be assessed in a manner consistent with how the District values the damage caused to its citizens by non-compliance. The penalties should:

- Include the direct and indirect costs a complying building owner would have incurred from lost rent revenue, engineering costs, planning, etc.
- Include the cost of allowing greenhouse gas emissions into our atmosphere (Social Cost of Carbon).
- Be adjusted for inflation (Consumer Price Index) at the end of the BEPS cycle.

From our understanding, the current alternative compliance fee proposal only includes the first item, and perhaps only the direct costs.

To serve as an example on the second bullet point, our analysis of DOEE’s benchmarking data shows that the mean GHG emissions for a non-BEPS-compliant building between 100,000 and

200,000 ft² reported floor area is 972 tCO₂e/yr. Assuming that compliance with BEPS would result in a 20 percent GHG emissions reduction¹² for each year over the subsequent compliance period of six years, the GHG reduction would total 1,166 tCO₂e.

A recent meta-analysis of the social cost of carbon estimates this value at \$113/tCO₂e, with some estimates ranging over \$8,000/tCO₂e.¹³ Using the lower average value, the cost of non-compliance from the perspective of the social cost of carbon for the average non-compliant building in the 100,000-200,000 ft² floor area category is \$132,000. These social costs of carbon should be added to the compliance fees.

§ 3521.3

We recommend setting adjustment factors for the Prescriptive Pathway and, if kept, the Standard Target Pathway proportional to reductions towards a Site EUI target.

There is little reason to adjust the penalties on the Prescriptive Pathway to a proportion of the “points” achieved. The purpose of this pathway is to create a clear guideline to compliance. If the building owner is unable to follow this pathway into compliance, it is entirely fair to assess penalties based on actual performance, especially when facing the inherent uncertainty of the savings when implementing a series of prescribed measures.

While we are in favor of deleting the Standard Target Pathway, the adjustment factor proposal for this pathway would be problematic because the ENERGY STAR Score is not linear with EUI.¹⁴ This is another reason to base it on Site EUI savings instead. Furthermore, the text in the table would peg the energy-use baseline to the building’s 2019 ENERGY STAR Score, which would be inappropriate for future BEPS cycles (BEPS 2, BEPS 3,...). Lastly, the BEPS standard is defined for a specific building in terms of either Source EUI or ENERGY STAR Score,¹⁵ yet the Adjustment Factor for the Standard Target Pathway seems to only acknowledge the latter as a possibility. Unless the adjustment factor is converted to Site EUI as proposed, an equivalent adjustment for Source EUI would be needed for buildings unable to achieve an ENERGY STAR Score.

Harnessing BEPS Data to Transform Markets

We ask DOEE to consider potential ways it could use BEPS data to transform markets when it comes to energy efficiency. While the public benchmarking data is a great first step, this data is

¹² We acknowledge that GHG emissions likely will not be linear with EUI reductions, but this serves as a first-order estimate.

¹³ Pei Wang, Xiangzheng Deng, Huimin Zhou, Shangkun Yu. “Estimates of the social cost of carbon: A review based on meta-analysis,” *Journal of Cleaner Production*, Volume 209, 2019, Pages 1494-1507. <https://doi.org/10.1016/j.jclepro.2018.11.058>.

¹⁴ EPA. ENERGY STAR Portfolio Manager Technical Reference, “ENERGY STAR Score for Offices in the United States,” Figure 6, p. 11. This reference is used as an example to illustrate general methodology. https://www.energystar.gov/sites/default/files/tools/Office_August_2019_508.pdf

¹⁵ D.C. Register Vol. 68, No. 1, pp. 162-164, §3530.1.

only known by data and policy wonks, and it is difficult for lay-people to translate it into meaningful information. As one possibility, DOEE could assign grades to buildings and require the grades to be publicly displayed (much like food safety ratings in restaurants). Perhaps DOEE could initiate a voluntary program to highlight top-performing buildings in each category by issuing plaques or certificates for public display and for use in marketing materials.

This type of transformation would be especially useful in the residential rental and condo market, where ENERGY STAR Scores and/or DOEE grades, where applicable, could be a required disclosure with any rental application or condominium listing. This could be further refined to include information like average utility costs or GHG intensity. This information could be valuable to both prospective tenants and to the building sector by fostering demand for energy efficiency.

We would be interested in having further discussions on this point with DOEE and any other interested parties.

Conclusion

We sincerely appreciate the opportunity to submit these comments on the BEPS program rules. Please feel free to contact me with any questions.

Respectfully submitted,

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