

JULY 11TH 2024 - MEETING SUMMARY

Building Emissions Performance Standard (BEPS) Technical Rulemaking Working Group

Zoom Call 12-2pm

Present: Alistair Jackson, Caroline Traube, Edmée Knight, Gabriella Henkels, Ian Brown, Joe Malaspino, Luke Howard, Madeline Kostic, Mel Knox, Nina Olivier, Rebecca Becker, Srini Pendikarla.

Regrets: Evan Cobb, Steve Abercrombie.

City of Seattle BEPS and Facilitation Staff: Gemma Holt and Nicole Ballinger (OSE), Santiago Rodriguez-Anderson, Anna Kelly, and Faith DeBolt (SBW), Kirstin Pulles and Sepideh Rezania (Unrooz)

Additional City of Seattle Staff (Observing): Mike Roos (OSE) and Larrie Matthews-Couturier (Seattle IT)

Meeting slides are posted at: <https://www.seattle.gov/environment/climate-change/buildings-and-energy/building-emissions-performance-standard/beps-rulemaking>

Agenda:

Topic	Time
Welcome + Introductions	10 mins
Introduction to the Rulemaking Process <ul style="list-style-type: none">• OSE explained Seattle Municipal Code's rulemaking requirement, OSE goals for the process, the timeline and opportunities for stakeholder engagement.	10 mins
Introduction to Greenhouse Gas (GHG) Emissions Reporting and GHG Intensity Targets (GHGITS) <ul style="list-style-type: none">• OSE explained the GHG Reporting requirements stated in the BEPS ordinance and walked the group through the basics of GHGIT and GHGI calculations to set the stage for the ensuing discussions.	10 mins
Discussion: Adding additional building activity types	10 mins
Breakout Rooms: Breakout groups <ul style="list-style-type: none">• Gross floor area for calculating GHGITS• GHG Report Details	20 mins

Introduction to GHGIT Normalization Factors • OSE provided background on what the ordinance says about normalization factors for nonresidential and multifamily space uses.	15 mins
Breakout groups • Normalization factor for nonresidential hours of operation • Normalization factor for multifamily housing	15 mins
Review Emissions Factors and Reporting of Renewables.	10 mins
Wrap-up and next steps	10 mins

Working Group Discussions Summary:

1. Should three additional building activity types be added?

Topic: Three building types have enough available reported energy benchmarking data and unique energy usage to generate their own GHGI targets (GHGIT) - museum, medical office, and data centre. (These types are currently included in other target types.) Adding these additional building types would not change the targets for any other building activity type.

Discussion: The working group was polled and supports adding these three additional building activities and GHGITs. One member asked about how medical offices would be defined compared to things like urgent care clinics or outpatient rehab which are currently in the “other” category. Those building types may be moved from their current category (other) and into the medical office category. Another question clarified whether buildings in these categories have already been benchmarking in Seattle, which OSE confirmed they have been.

2. What should be the minimum space use size for calculating and/or prorating building activity GHGITs? (Discussion assumed an individual building).

Topic: OSE proposes aligning with existing Seattle Benchmarking guidelines for breaking out secondary building activity types or space uses (called “Property Use Types” in ENERGY STAR Portfolio Manager - ESPM) when calculating the building GHGIT. Under this proposal, all secondary space uses greater than 5000 square feet must be broken out separately. Space uses less than 1000 square feet should be combined with the largest space type. Space uses between 1000 and 5000 square feet can either be combined with the largest space use type or included as an additional space use type. Data centres, laboratories, and restaurants must be measured separately regardless of space use size because they tend to have high energy use and/or greenhouse gas emissions (GHG). OSE explained that while ESPM data will still be used, it will function like the base record that will be inputted into a forthcoming

BEPS reporting tool. Within the future BEPS reporting tool, persons reporting may make minor adjustments to calculate the building's GHGIT. OSE is currently reviewing reporting tools used by other BPS cities in collaboration with Seattle IT. OSE also maintains regular discussions with WA Department of Commerce staff to understand areas of overlap or inconsistency.

Discussion: The breakout room members generally support the plan although they had some concerns. The ability to break out high energy use/emissions spaces is a very helpful feature, and they appreciate the alignment with Seattle benchmarking requirements. One attendee asked how the square footage would be calculated, and OSE shared that it would be the GFA determined by a qualified person during the benchmarking process (following existing benchmarking rules). Another was concerned that this would create additional work for building owners if data from the statewide WA Clean Building Performance Standard can't be reused. OSE explained that the goal is to be able to reuse the data from Seattle benchmarking and is in discussion with Commerce about areas of alignment/overlap. Another concern was that it may be difficult to break out and define how a specific space is used, especially by individual tenants who may change their space use over time or have functions like data centres mixed into tenant spaces. Others expressed an inconsistency with how certain space uses are broken out in ESPM vs in Seattle's requirements. OSE explained that this is an ongoing conversation with ESPM. One proposal from the working group was to allow building owners to still combine space uses over 5000 square feet.

3. **What information should be necessary in the GHG Report to show that a building is on track for future compliance to meet the upcoming GHGIT? What's the right level of detail for mechanical equipment? What other information, if any, should be collected for the GHG report?** (Discussion assumed an individual building).

Topic: Building owners will be required to submit a GHG report as part of the compliance process and the group was provided with a list of the reporting requirements as listed in the legislation. OSE asked the working group to share ideas about what kind of information, and what level of detail, should be collected in that report.

Discussion: Working group members shared several ideas, including:

Documenting progress towards future targets:

- Analysis of electrical supply capacity in street, in vault, switchgear and panels - to ensure full assessment of supply and distribution before design decision start
 - Load analysis - how much space do they really have?
- Schedule of replacement – though how could that be done on a portfolio level?
- General plan and phasing of capital projects to meet targets, with projected reductions. Plan to include projected timeline with milestones
- Funding plan for those future projects to confirm moving forward

Documenting progress so far:

- Photo documentation
- Energy modelling report/deliverable
- Seattle City Light service request (if additional electrical service is needed)
- Documentation that doesn't require a third party, but can be provided by in-house engineering/energy staff - proof installation (photos, plans, etc.)
- M&V of the measures taken
- Actions should be represented in future data, forecast of energy/emissions reduced whether verified by third party or produced by internal staff
- Permits pulled from the City/County to show potential work in progress.

Major building mechanical equipment:

- Sizing assumptions and calcs and equipment capacity
- For heat pump domestic hot water (DHW) in multifamily, system design and controls set up is critical to operational energy efficiency
- Specs on the Refrigerant Type used in systems, particularly for HVAC
 - DHW will mostly be CO2 refrigerant
- Equipment type, manufacturer and year
 - Limit to equipment above a certain size/load (define major)
- Eventual plans for total electrification
- Space heat distribution type - steam/hydronic replacement is a big challenge

Any additional items:

- General Building Occupancy and Use Schedules

The working group then discussed the ideas. One member expressed that analysis of electrical capacity may be overly complicated. Another responded that it's important to ensure that electrical capacity planning is part of the process. Utilities also need to know about additional load needs well in advance. A proposed idea is to have the GHG report include a commitment to a timeline for analysis of electrical capacity. Members are also concerned about the administrative burden. Itemised lists of component replacements and their GHG reductions are complicated. Documentation that doesn't require third party verification is preferable.

4. Should BEPS include normalization factors for hours of operation in non-residential buildings?

Topic: The BEPS ordinance allows the City to specify normalization factors which would adjust the GHGI targets although to date no other BPS cities have created such factors for GHGI targets so there are no established formulae for doing so. For EUI targets, the WA CBPS has normalization factors for buildings based on their operating hours, following the ASHRAE 100 standard. Buildings are categorized in three bins of light occupancy (50 hours or less per week), medium occupancy (51 to 167 hours per week) and 24/7 occupancy of 168 hours per week. Occupancy factors in WA CBPS and ASHRAE 100 are based on average EUIs for different building types and are based on

buildings of all sizes and fuel mixes across the United States. The samples used for the ASHRAE 100 factors are not representative of the Seattle buildings (greater than 20,000 SF) used to generate the BEPS targets.

SBW Consulting analysed how using these factors could impact BEPS GHGITs. The ASHRAE 100 standard / WA CBPS normalization factors for each building type were applied to the existing GHGITs for the different bins of operating hours and presented by SBW consulting who explained the impacts and their observations. Working group members were asked to comment on whether these normalization factors should be adopted for BEPS or not, or if another method should be developed for consideration.

Discussion: Several workgroup members expressed concerns with normalization factors for non-residential buildings. In particular, members were concerned that normalization factors make GHGI targets more difficult for many buildings, the ranges for operating hour categories are too broad, and that defining their operating hours is challenging for building owners and managers. Members noted that occupancy hours have little bearing on energy use given tenants lease requirements and other factors like building start-up times. Including normalization factors would also increase the reporting burden. Within one building, different tenants may have different operating hours. One proposal suggested having smaller ranges for operating hour 'bins' and related GHGITs, but SBW explained that there is not enough data to support adding additional operating hour ranges. Another suggestion was to just have a normalization factor for 24/7 operating buildings, but that adjustment would impact the overall emissions reduction impact of the GHGITs. Overall, the workgroup does not support the ASHRAE Standard 100 normalization factors for hours of operation in Seattle's BEPS.

5. **Should BEPS include normalization factors for subsidised multifamily buildings?**

Topic: During BEPS stakeholder engagement, OSE heard that there may need to be normalization factors for multifamily housing based on density of persons living in the building or unit density. However, recent draft research by Pacific Northwest National Laboratory (PNNL) could not identify a reliable factor for an adjustment based on unit density that worked across the multifamily buildings. PNNL found that there was a stronger correlation for GHGI based on whether multifamily housing was subsidised or not. Working group members were asked to comment on the draft findings and consider if a multifamily normalization factor should be included in the standard.

Discussion: Multifamily building type (low-, mid-, high-rise) may have a bigger bearing on energy use, rather than subsidised vs unsubsidised. Occupancy type and building use is another measure to consider - permanently supported housing means residents are home more often compared to workforce housing, so can lead to higher energy use. There were some equity concerns. A density measure may be more closely related to equity, as larger apartments housing fewer people may be less energy intensive. Reducing GHGITs for subsidised housing may penalise unsubsidized low-rent or "naturally occurring affordable housing." OSE should ensure building owners and

managers are not discouraged from adding comfort for residents, such as by adding cooling systems. There was some uncertainty about how subsidised housing would be defined. Generally, the working group expressed that normalization factors for multifamily housing may be important, but additional work is needed to figure out what the right criteria is for normalization.

6. What renewable energy sources are building owners and managers using that might meet the requirements of the ordinance?

Topic: OSE presented the emissions factors for electricity, natural gas, and thermal energy. Emissions factors for renewables are dependent on the supply source. For example, the feedstock is important with renewable natural gas (RNG). Products need to be bundled products so they are not double counted or disaggregated. Building owners must provide an attestation which specifies the source and emissions factor.

Discussion: One member asked how RNG affects the GHG accounting. OSE explained that it would have a different emissions factor. Another member asked if biogas produced onsite from anaerobic digestion of food scraps would be counted as RNG.

Organized by:



Facilitated by:



Technical analysis by:

