BEUDO Procedures

Information and data contained in this document are in support of regulations pertaining to the Ordinance entitled “Building Energy Use,” Chapter 8.67 of the Municipal Code of the City of Cambridge.

This document follows the outline of BEUDO Regulations, and shall be amended as needed to include information required to comply with BEUDO.

Table of Contents

I. Definitions [this section intentionally left blank]

II. Reporting Process [this section intentionally left blank]

III. Third Party Verification

A. Individuals from the following organizations are accredited to serve as an Approved Verification Body when completing Third Party Verification of a Covered Property's energy data.

TABLE 1. APPROVED VERIFICATION BODIES FOR THIRD PARTY VERIFICATION

Organization	Profession	Credential
AABC Commissioning Group (ACG)	Commissioning Professional	Certified Commissioning Authority (CxA)
American Institute of Architects (AIA)	Architect	Registered Architect (RA)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)	Commissioning Professional	Commissioning Process Management Professional Certification (CPMP)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)	Energy Auditor	Building Energy Assessment Professional (BEAP)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)	Energy Auditor	Building Energy Modeling Professional (BEMP)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)	Energy Manager	Operations and Performance Management Professional (OPMP)
American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)	Commissioning Professional	Certified Building Commissioning Professionals (BCxP)
Association of Energy Engineers (AEE)	Commissioning Professional	Existing Building Commissioning Professional (EBCP)
Association of Energy Engineers (AEE)	Energy Auditor	Certified Energy Auditor (CEA)
Association of Energy Engineers (AEE)	Energy Auditor	Certified Measurement and Verification Professional (CMVP)
Association of Energy Engineers (AEE)	Energy Auditor	SEP Performance Verifier
Association of Energy Engineers (AEE)	Energy Manager	50001 Certified Practitioner in Energy Management Systems
Association of Energy Engineers (AEE)	Energy Manager	Certified Energy Manager (CEM)
Association of Energy Engineers (AEE)	Commissioning Professional	Certified Building Commissioning Professional (CBCP)
BREEAM USA	Building Operator	BREEAM USA In-Use Assessor
Building Commissioning Association (BCA)	Commissioning Professional	Certified Commissioning Professional (CCP)
Building Commissioning Association (BCA)	Commissioning Professional	Associate Commissioning Professional (ACP)
Energy Management Association (EMA)	Energy Manager	Energy Management Professional (EMP)
National Council of Architectural Registration Boards (NCARB)	Architect	Licensed Architect
National Society of Professional Engineers (NSPE)	Engineer	Professional Engineer (PE)
Northwest Energy Efficiency Council Midwest Energy Efficiency Alliance	Building Operator	Building Operator Certification (BOC) [Level 2 for Boston]

Organization	Profession	Credential
Passive House Institute US (PHIUS)	Commissioning Professional	Phius Certified Verifier
Passive House Institute US (PHIUS)	Energy Modeler	Phius Certified Consultant
Passive House Institute US (PHIUS)	Certified Passive House Consultant	Certified Passive House Consultant (CPHC) Training
U.S. Green Building Council (USGBC)	Energy Auditor	LEED Advanced Professional (AP) Building Operations & Maintenance
Building Owners and Managers Institute (BOMI) International	Energy Auditor	RPA/FMA High Performance Designation (RPA/FMA-HP)

B. Submittal Process for Third Party Data Verification
    i. [Section forthcoming]

IV. Property Ownership and Configuration

A. Change of Owner
    i. [Section forthcoming]

B. Requests to report and comply with an alternative configuration of a Covered Property (See Regulations Section IV.B.) must be submitted by December 31 of the first Compliance year of the property. The form may be found here.
    i. A Covered Property must meet criteria outlined in Regulations Section IV.B.iv in order to be approved for Alternative Configuration. Details and examples are outlined in the Technical Guide.
    ii. The City will approve requests for Alternative Configuration within 60 days of a complete submittal request.

C. Requests to comply as a Multi-Use Covered Property (See Regulations Section I.F.) may be approved only after any requests for Alternative Configurations of the default Covered Property have been approved by the City.

V. Baselines

A. Requests for an Alternative Baseline must be submitted by December 31 of the year prior to the first Compliance Year of the property. In order for an Alternative Baseline request to be processed, the Property Configuration Form must first be completed and approved.

Reduction Schedules

B. **Emissions Reduction Schedule for Covered Properties with Alternative Baselines**

A Covered Property that chooses an Alternative Baseline, once approved, will comply with the schedules in Table 2 and Table 3. Pursuant to 8.67.100(4), “A Covered Property that uses an alternative Baseline shall comply with performance requirements that include an additional 2.5% reduction for every year between the start of its Baseline and 2018.”

In the tables below, the percentages in each cell represent the reduction in emissions from the Baseline years that must be demonstrated for that compliance year.

TABLE 2. MAXIMUM ALLOWABLE EMISSIONS BY BASELINE YEAR FOR NON-RESIDENTIAL COVERED PROPERTIES 100,000+ COVERED SQUARE FEET (CSF).

	Max allowable emissions (as % of Baseline) for selected baseline years								
	Alternative Baseline								Default Baseline
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Compliance Period 1: 2026 to 2029	66.7%	68.1%	69.6%	71.1%	72.7%	74.4%	76.2%	78.0%	80%
Compliance Period 2: 2030 to 2034	33.3%	34.0%	34.8%	35.6%	36.4%	37.2%	38.1%	39.0%	40%
Compliance Period 3: 2035 onwards	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0%

TABLE 3. MAXIMUM ALLOWABLE EMISSIONS BY BASELINE YEAR FOR NON-RESIDENTIAL COVERED PROPERTIES 25,000 TO 99,999 COVERED SQUARE FEET (CSF)

	Max allowable emissions (as % of Baseline) for selected baseline years								
	Alternative Baseline								Default Baseline
	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019
Compliance Period 1: 2026 to 2029	83.3%	85.1%	87.0%	88.9%	90.9%	93.0%	95.2%	97.6%	100%
Compliance Period 2: 2030 to 2034	50.0%	51.1%	52.2%	53.3%	54.5%	55.8%	57.1%	58.5%	60%
Compliance Period 3: 2035 onwards	33.3%	34.0%	34.8%	35.6%	36.4%	37.2%	38.1%	39.0%	40%
Compliance Period 4: 2040 to 2044	16.7%	17.0%	17.4%	17.8%	18.2%	18.6%	19.0%	19.5%	20%
Compliance Period 5: 2045 to 2049	8.3%	8.5%	8.7%	8.9%	9.1%	9.3%	9.5%	9.8%	10%

C. **New Covered Properties**

The reduction schedules for a New Covered Property, as described in Regulations Section IV.B.v, are found below.
The percentages in each cell represent the reduction in emissions from the Baseline years that must be demonstrated for that compliance year.

TABLE 4. GHG EMISSIONS REDUCTION SCHEDULE (FROM BASELINE) FOR NEW COVERED PROPERTIES ≥ 100,000 SQUARE FEET

Year of COO	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	Baseline		--	--	--	--	--	80%	60%	60%	60%	40%	40%	40%	20%	20%	
2019		Baseline		--	--	--	--	80%	60%	60%	60%	40%	40%	40%	20%	20%	0
2020			Baseline		--	--	--	80%	60%	60%	60%	40%	40%	40%	20%	20%	0
2021				Baseline		--	--	--	80%	60%	60%	60%	40%	40%	40%	20%	0
2022					Baseline		--	--	--	80%	53%	53%	53%	27%	27%	27%	0
2023						Baseline		--	--	--	80%	53%	53%	53%	27%	27%	0
2024							Baseline		--	--	--	80%	53%	53%	53%	27%	0
2025								Baseline		--	--	--	80%	40%	40%	40%	0
2026									Baseline		--	--	--	80%	40%	40%	0
2027										Baseline		--	--	--	80%	40%	0
2028											Baseline		--	--	--	80%	0
2029												Baseline		--	--	--	0
2030													Baseline		--	--	0
2031														Baseline		--	0
2032															Baseline		0
2033																	0
2034																	0

TABLE 5. GHG EMISSIONS REDUCTION SCHEDULE (FROM BASELINE) FOR NEW COVERED PROPERTIES < 100,000 SQUARE FEET

Year of COO	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
2018												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2019												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2020												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2021												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2022												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2023												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2024												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2025												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2026												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2027												80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2028													80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2029														80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	20%	20%	20%	0%
2030															80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	20%	0%
2031																80%	80%	80%	80%	80%	60%	60%	60%	60%	60%	40%	40%	40%	40%	40%	20%	0%
2032																	75%	75%	75%	75%	75%	50%	50%	50%	50%	50%	25%	25%	25%	25%	25%	0%
2033																		75%	75%	75%	75%	75%	50%	50%	50%	50%	50%	25%	25%	25%	25%	0%
2034																			75%	75%	75%	75%	75%	50%	50%	50%	50%	50%	25%	25%	25%	0%
2035																				75%	75%	75%	75%	75%	50%	50%	50%	50%	50%	25%	25%	0%
2036																					75%	75%	75%	75%	75%	50%	50%	50%	50%	50%	25%	0%
2037																						75%	75%	75%	75%	50%	50%	50%	50%	50%	50%	0%
2038																							66%	66%	66%	66%	66%	33%	33%	33%	33%	0%
2039																								66%	66%	66%	66%	66%	33%	33%	33%	0%
2040																									66%	66%	66%	66%	33%	33%	33%	0%
2041																										66%	66%	66%	66%	33%	33%	0%
2042																											50%	50%	50%	50%	50%	0%
2043																												50%	50%	50%	50%	0%
2044																													50%	50%	50%	0%
2045																														50%	50%	0%
2046																															50%	0%
2047																																0%
2048																																
2049																																

VI. Campus Compliance

[Section forthcoming]

VII. Emission Factors

A. Emission Factor Methodology

i. Emissions Factors for **Grid Electricity** will be published for each compliance period by January 1 of the year prior to the start of each compliance period. These factors will be developed and published by the City using data published by ISO New England, NEPOOL, and any other relevant governmental sources as well as forecasted load and electricity generation. A residual methodology calculation method will be applied in order to account for Massachusetts renewable portfolio standards.

ii. In addition, annually, the City may publish Emission Factors for Grid Electricity per Regulations Section VII.D.3. These values will be published in this document and other relevant locations by April 1 of the year following the compliance year. Covered Property owners electing to use the higher of the two calculated values may do so. [Process for submission forthcoming.]

iii. Emissions Factors for **natural gas, propane, fuel oil, diesel oil, and kerosene** will be published for each compliance period by January 1 of the year prior to the start of each compliance period. These factors will be based on the standard scientific values utilized by ENERGY STAR Portfolio Manager at the time of publication.

iv. Emissions Factors for energy produced by **local Generation Facilities** (or District Energy Systems (DES) will be determined annually using the efficiency method of the World Resources Institute. Alternatively, owners of Local Generation Facilities may request to calculate Emission Factors for their energy outputs using the Energy Content Method per Regulations Section VII.E.iv.

B. Emissions Factors

TABLE 6. EMISSION FACTORS AND MULTIPLIERS FOR COMPLIANCE PERIOD 1: 2026-2029

Energy Source	Unit	Emission Factors and Multipliers				
		2018 and 2019: Default Baseline	2026	2027	2028	2029
Electricity						
Electric Grid Residual Factor	Kg CO2e/ MWh	379	418	427	435	444
Annual Renewable Portfolio Standard (RPS) Minimum	%	13	30	33	36	39
Other Fuel sources						
Natural Gas	Kg CO2e/ MMBtu	53.11	53.11	53.11	53.11	53.11
Propane	Kg CO2e/ MMBtu	64.25	61.95	61.95	61.95	61.95
Fuel Oil (No. 1)	Kg CO2e/ MMBtu	73.50	73.49	73.49	73.49	73.49
Fuel Oil (No. 2)	Kg CO2e/ MMBtu	74.21	74.20	74.20	74.20	74.20
Fuel Oil (No. 4)	Kg CO2e/ MMBtu	75.29	75.28	75.28	75.28	75.28
Fuel Oil (No. 5 & No. 6)	Kg CO2e/ MMBtu	75.35	74.26	74.26	74.26	74.26
Diesel	Kg CO2e/ MMBtu	74.21	75.16	75.16	75.16	75.16
Kerosene	Kg CO2e/ MMBtu	77.69	75.44	75.44	75.44	75.44

TABLE 7. EMISSIONS FACTORS AND MULTIPLIERS FOR YEARS 2010-2025

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Indirect GHG Emissions																
Electric Grid Residual Factor (kgCO2e/MWh)	443	399	365	353	366	392	377	379	379	334	372	405	401	429	409	412
Annual RPS Minimum	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	16%	18%	20%	22%	24%	27%
RPS-only Electric Emissions Factor (kgCO2e/MWh)	418	376	344	322	337	351	338	334	331	284	311	328	320	335	312	299
Direct GHG Emissions																
Natural Gas	53.07	53.07	53.07	53.07	53.11	53.11	53.11	53.11	53.11	53.11	53.11	53.11	53.11	53.11	53.11	53.11
Propane	61.50	61.50	61.50	61.50	61.50	64.25	64.25	64.25	64.25	64.25	64.25	64.25	61.95	61.95	61.95	61.95
Fuel Oil (No. 1)	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.50	73.49	73.49	73.49	73.49
Fuel Oil (No. 2)	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.20	74.20	74.20	74.20
Fuel Oil (No. 4)	75.29	75.29	75.29	75.29	75.29	75.29	75.29	75.29	75.29	75.29	75.29	75.29	75.28	75.28	75.28	75.28
Fuel Oil (No. 5 & No. 6)	75.35	75.35	75.35	75.35	75.35	75.35	75.35	75.35	75.35	75.35	75.35	75.35	74.26	74.26	74.26	74.26
Diesel	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	74.21	75.16	75.16	75.16	75.16
Kerosene	77.69	77.69	77.69	77.69	77.69	77.69	77.69	77.69	77.69	77.69	77.69	77.69	75.44	75.44	75.44	75.44
Locally Generated Outputs																
District Steam (Vicinity)																
Steam (MIT)																
Hot Water (MIT)																
Chilled Water (MIT)																
Electricity (MIT)																
Steam (Harvard)																
Hot Water (Harvard)																
Chilled Water (Harvard)																
Electricity (Harvard)																
Steam (Biogen)																
Hot Water (Biogen)																
Chilled Water (Biogen)																
Electricity (Biogen)																

This section to be filled in

C. Calculating Emissions

Electricity

For a covered property **with no qualifying additional Renewable Electricity purchases**:

$$\text{Electric Emissions [kg CO2e]} = \left(\text{Electricity consumed from the grid [MWh]} \times \text{[100\% - Annual RPS Minimum Requirement]}\right) \times \text{Electric Grid Residual Factor [kg CO2e/MWh]}$$

For a covered property that **does purchase additional qualifying Renewable Electricity** to apply to their emissions:

$$\text{Electric Emissions [kg CO2e]} = \left[\left(\text{Electricity consumed from the grid [MWh]} \times \text{[100\% - Annual RPS Minimum Requirement]}\right) - \text{voluntary RE purchases [MWh]}\right] \times \text{Electric Grid Residual Factor [kg CO2e/MWh]}$$

Other Fuels

$$\text{Fuel Source Emissions [metric tons CO2e]} = \text{Energy consumed [MMBTU]} \times \text{Fuel Source Emissions Factor}$$

D. Time of Use Methodology

The following steps describe how Covered Properties that choose to use a time-of-use electricity emissions factor may do so:

1. Identify the total amount of residual generation from unclaimed non-emitting and unclaimed emitting generators for the year, by resource type.
    - Source: NEPOOL (New England Power Pool) GIS residual mix by fuel report
    - Notes: Although NEPOOL GIS publishes some data on a quarterly basis, the residual mix by fuel report is only displayed at the end of Q4. This is because RPS-eligible and zero-emissions certificates are banked during Q1 to Q3. To see the total annual amount of unclaimed generation, pull the report from Q1 to Q4 of the given year.
2. Download the hourly generation profile for all resources in each hour of the year, by resource type.
    - Source: U.S. Energy Information Administration (EIA), Form 930
    - Notes: EIA collects hourly data from ISO New England's (ISO-NE) API and publishes it via its Form 930. Users can click "Download Data" and select "New

England" from the Balancing Authority/Region Files tab to retrieve hourly generation data dating back to 2015.

3. Calculate the hourly residual generation profile from unclaimed non-emitting and unclaimed emitting generators, by resource type. For each resource type with unclaimed generation reported by NEPOOL GIS, calculate the ratio of unclaimed to total generation by dividing the annual unclaimed generation reported by NEPOOL GIS by the annual total generation reported by EIA Form 930. Multiply this ratio by the corresponding resource type's hourly generation time series (downloaded in Step 2). The sum of this new hourly generation profile should equal NEPOOL GIS's reported annual unclaimed generation. The sum of the hourly generation across unclaimed emitting resources and unclaimed, non-emitting resources is the total hourly residual generation.

    - Sources: NEPOOL GIS, EIA Form 930
    - Notes: For the NEPOOL GIS resource types for which ISO-NE does not report hourly generation profiles (such as wood and biomass), use the hourly generation profile called "Other."

4. For each resource type, multiply the hourly residual generation profile with the associated emissions rate (zero for non-emitting resources). Sum up the hourly emissions across all resource types to estimate the unclaimed ("residual") emissions for that hour.

5. Account for imports. New England currently relies on imports for 15–20 percent of energy needs. To account for this:

    - Identify the total annual residual imported energy and associated residual CO_2 emissions from NEPOOL GIS.
        - Divide the Carbon Dioxide column by the percent of the residual mix made up by the Import System Mix row to get the residual CO_2 emissions rate from imports in pounds per MWh. Multiply the result by the number of certificates assigned to the Import System mix row to get the total residual CO_2 emissions in pounds from imports. This number purely represents CO_2 emissions, so further calculations would be needed to calculate a CO_{2eq} rate, such as scaling the CO_2 emission rate based on a national or grid-region-specific ratio of CO_{2eq} to CO_2 emissions.
    - Identify the hourly CO_2 emissions imported column from the EIA 930 data.
    - Distribute the annual CO_2 emissions on an hourly basis using the CO_2 emissions imported hourly shape from EIA 930.
    - Add the hourly residual import system mix generation to the results of step 3. Then, add the hourly residual CO_2 emissions from imports to the result of step 4.

- Note: This methodology does not need to account for exports. It must account for imports because the calculations are performed on a per-MWh basis and the import mix in a given hour is different than the ISO-NE mix. By contrast, the export mix from ISO-NE should approximately match the native generation mix staying in New England.

6. For each hour, divide the residual emissions by the residual generation to calculate the final residual emissions rate.

    - Note: The result should be in kg/kWh or similar units.

7. Apply the resulting residual time-of-use emission rate to individual buildings' time-of-use energy consumption after accounting for any BEUDO-qualified purchased renewables. To account for hourly profile of renewable generation:

    - Known generation profile: If the Property Owner can provide the hourly generation profile for any qualified renewables they purchase, first subtract that generation profile from the buildings' time-of-use energy consumption.

    - Unknown generation profile: If the Property Owner purchased additional qualified renewables for which they do not have the hourly generation profile, sum the annual generation from these resources with purchases by the supplier and any allowable banked excess hourly renewables. Subtract this sum from the total remaining grid electricity use. Scale the building's remaining time-of-use energy consumption by the following ratio: total non-qualified grid electricity use divided by total grid electricity use.

VIII. Renewable Energy Procurement

A. Per Regulations Section VIII.B.i., Covered Property Owners must submit information regarding their Renewable Electricity purchases (proposed or completed) to the City of Cambridge for approval.

    i. Information regarding approved procurement types must be submitted to the City by April 1 of the year following the first compliance year in which the resultant RECs are to be used for BEUDO compliance.

B. **Additional Approved Procurement Types**

    i. Renewable Electricity procurement structures which are not described in the BEUDO Regulations may be submitted for review to the City pursuant to Regulations Section VIII.B.iii.

ii. To submit a new procurement type for approval, information must be submitted to the City prior to any applicable contract signing and at least 90 calendar days prior to the intended use of the resulting Renewable Electricity for compliance.

C. Assignment and Retirement of RECs [Section forthcoming]

IX. Verified Carbon Credits [this section intentionally left blank]

X. Hardship Compliance Plans and Deferral Plans

A. Hardship Compliance Plan Submittal Requirements

i. Pursuant to Regulations Section X.D, Table 8 identifies the required submittals for a Hardship Compliance Plan, based on qualifying criteria. See below for explanations of these requirements.

a. **Narrative and Scope: All plans must include a description of the hardship and scope of the qualifying criteria.**

b. Relief Type: This column identifies the most appropriate relief type for each qualifying criterion. The Covered Property Owner may propose an alternative compliance mechanism or request alternative relief, which will be reviewed by the Review Board and approved at its discretion.

c. Applicable Plan Type and Minimum Level of Energy Audit:

i. The level of detail of the energy audit is based on plan type, and the audit type is not limited to the tools identified, but should meet the equivalent scope, as described in further detail in the Hardship Compliance Plan Guide. Utility scoping studies and/or building assessments are encouraged when project is planned for implementation.

ii. Campuses: In lieu of an energy audit for each Covered Property comprising the Campus, the Owner may provide relevant Campus-wide documentation.

d. Criteria Documentation: To support the claim of the qualifying criteria, demonstrate evidence for review by the Review Board. In the event that identified documentation types are not available, the Owner may submit equivalent materials with an explanation for why the required documentation could not be furnished.

e. Additional Submittal--Brief narrative considering additional compliance measures: Where required, plans should address how the Owner has used, planned to use, and/or considered the use of additional compliance measures prior to applying for a Hardship Compliance Plan, including Verified Carbon Credits, Alternative Compliance Credits, Renewable Electricity Certificates, and reporting as a campus.

f. Additional Submittal--GHG Emissions Reduction Schedule: This Schedule will replace the Covered Property's annual GHG emissions reduction targets in 8.67.100. Refer to guidance materials for a template of an annual schedule of anticipated emissions reductions through the Hardship Compliance Plan term.

TABLE 8. SUBMITTAL REQUIREMENTS FOR HARDSHIP COMPLIANCE PLANS

Qualifying Criteria	Relief Type	Criteria Documentation	Applicable Plan Type & Minimum Level of Energy Audit	Additional Submittals
Financial				
(a) Bankruptcy: Owner declared bankruptcy during all or part of a Compliance Year	Alternative Schedule	Bankruptcy court filings	Short or Long-Term: DOE BETTER + Asset Score, or Labs2Zero for labs	Brief narrative of additional compliance measures GHG Emissions Schedule
(b) Lack of capital: Cost of compliance exceeds funds the Owner can reasonably access or raise		Financial statements, capital reserve analysis, lender letters	Short-Term: DOE BETTER + Asset Score, or Labs2Zero for labs Long-Term (5+ yrs): ASHRAE Level 2, DOE MEASUR	
(c) Incentive Delays: Denial or material delays in utility/decarbonization incentive programs		Denial letters or status logs from utility/government programs		
Ownership				
(a) Individual Non-Res Condos: Multiple owners with separate units creating work/allocation constraints	Alternative Property Configuration	Deeds or ordinances showing ownership constraints	Administrative Modification: EnergyStar Portfolio Manager	GHG Emissions Schedule

Qualifying Criteria	Relief Type	Criteria Documentation	Applicable Plan Type & Minimum Level of Energy Audit	Additional Submittals
Regulatory / Contractual				
(a) Energy Contracts: Long-term contracts without reopeners for significant energy demand	Alternative Schedule	Signed energy supply contracts	Short-Term: DOE BETTER + DOE Asset Score, or Labs2Zero for labs Long-Term (5+ yrs): ASHRAE Level 2, DOE MEASUR	Brief narrative of additional compliance measures GHG Emissions Schedule
(b) Pre-existing Leases: Lease signed prior to 6/26/23 prohibits work; tenant is uncooperative		Lease agreement; proof tenant is unwilling to cooperate		
(c) Renewable Energy Delays: Delays in renewable credits under an executed Power Purchase Agreement		Power Purchase Agreement; official delay notice identifying cause and schedule; Owner's timeline for remedy		
(d) Grid/Permit Delays: Interconnection delays or government permit denials		Interconnection correspondence, permit logs, and/or agency responses		
(e) Conflicting Standards: Meeting other regulatory, accreditation, or certification requirements	Alternative Schedule *and/or* Energy Exemption	Evidence of conflicting regulations or standards		
Technical / Operational				
(a) Space Constraints: Physical building or parcel constraints prevent compliance work	Alternative Schedule	Engineering studies and site/floor plans	Short-Term: DOE BETTER + DOE Asset Score, or Labs2Zero for labs Long-Term (5+ yrs): ASHRAE Level 2, DOE MEASUR	Brief narrative of additional compliance measures GHG Emissions Schedule
(b) Manufacturing Loads: Hardship arises specifically from reducing manufacturing process load emissions	Alternative Schedule *and/or* Energy Exemption	Process load and energy use analysis		
(c) Historical Status: Property is a designated Historical Property under IECC 2021	Alternative Schedule	Historic designation records (IECC 2021)		
(d) Baseline Vacancy: Unoccupied or not fully operational during default baseline years	Alternative Baseline after 2019	Occupancy records, utility data, or lease-up schedules	Administrative Modification: EnergyStar Portfolio Manager	GHG Emissions Schedule

Qualifying Criteria	Relief Type	Criteria Documentation	Applicable Plan Type & Minimum Level of Energy Audit	Additional Submittals
Other				
(a) Delays due to natural disaster or state of emergency	Alternative Schedule	Disaster declarations, insurance claims, or contractor delays	Short-Term: DOE BETTER + DOE Asset Score, or Labs2Zero for labs Long-Term (5+ yrs): ASHRAE Level 2, DOE MEASUR	Brief narrative of additional compliance measures GHG Emissions Schedule
(b) The Owner has adopted a long-term, comprehensive decarbonization strategy for their Covered Property or Campus with annual emissions targets that demonstrate alignment with the greenhouse gas emissions reductions in BEUDO.	Alternative Schedule	Capital plan, net zero energy plan, roadmap, or other officially adopted decarbonization strategy committing to emissions targets in Covered Properties or Campus aligned with BEUDO Narrative justification of reasonable divergence from, and demonstrable progress toward, the standard GHG emission reduction schedule	Short-Term: DOE BETTER + DOE Asset Score, or Labs2Zero for labs Long-term: ASHRAE Level 2, DOE MEASUR	Brief narrative of additional compliance measures GHG Emissions Schedule
(c) Other circumstances	Board Discretion	Justification deemed relevant by the Board	Short-Term: DOE BETTER + DOE Asset Score, or Labs2Zero for labs Long-Term (5+ yrs): ASHRAE Level 2, DOE MEASUR	

A. **Deferral Plan Submittal Requirements**

i. Narrative: A brief narrative description of the reasons that a deferral is being sought, including, but not limited to, a description of other planned work at the Covered Property that is proposed to be undertaken in conjunction with planned emissions reduction activities. The narrative should demonstrate in detail why it is advantageous to defer emissions reduction activities based on a cost analysis and/or description of how the emission reduction activities are going to be combined with other work at the property

ii. Scope and length of the requested deferral, not to exceed five years.

iii. Brief narrative considering additional compliance measures: Plans should address how the Owner has used, plans to use, and/or considered the use of additional compliance measures, including Verified Carbon Credits, Alternative Compliance Credits, Renewable Electricity Certificates, and reporting as a campus.

iv. Alternative annual schedule of GHG emissions reduction demonstrating that total cumulative emissions do not exceed those of the standard schedule of 8.67.100. This Schedule will replace the Covered Property's annual GHG emissions reduction targets in 8.67.100.

XI. Review Board [this section intentionally left blank]