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Sec. 2. The Regulations of Connecticut State Agencies are amended by adding section 22a-174-31a as follows:

(NEW) Section 22a-174-31a. Greenhouse Gas Emission Offset Projects.

(a) Definitions and abbreviations. For the purposes of this section and section 22a-174-31 of the Regulations of Connecticut State Agencies:

(1) “Anaerobic digester” means a device that promotes the decomposition of organic material to simple organics and gaseous biogas products, usually accomplished by means of controlling temperature and volume, and including a methane recovery system.

(2) “Anaerobic digestion” means the degradation of organic material including manure brought about through the action of microorganisms in the absence of elemental oxygen.

(3) “Anaerobic storage” means the storage of organic material in an oxygen-free environment, or under oxygen-free conditions, including but not limited to, holding tanks, ponds, and lagoons.

(4) “ANSI” means the American National Standards Institute;

(5) “ASHRAE” means the American Society of Heating, Refrigerating and Air-Conditioner Engineers;

(6) “Biogas” means the gas, primarily methane and CO₂, resulting from the decomposition of organic matter under anaerobic conditions;

(7) “Boiler” means a fossil or other fuel fired device that produces steam or heats water or any other heat transfer medium;

(8) “Building envelope” means the elements of a building, including walls, windows, foundation, basement slab, ceiling, roof and insulation, that separate conditioned space from unconditioned space, or that enclose semi-heated space, through which thermal energy may be transferred to or from the exterior, unconditioned space, or conditioned space;

(9) “Certification” means an independent third-party verification that a CO₂ emissions offset project application and all measurement, monitoring or verification associated therewith meets the requirements of this section.

(10) “CO₂ offset allowance” means “CO₂ offset allowance” as defined in section 22a-174-31 of the Regulations of Connecticut State Agencies;

(11) “CO₂ emissions offset project” means a project to reduce or avoid atmospheric loading of CO₂, CO₂e or sequestered carbon where such project yields reduced or avoided emissions that are real, additional, verifiable, enforceable and permanent;

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(12) “CO₂e” means “carbon dioxide equivalent” as defined in section 22a-174-31 of the Regulations of Connecticut State Agencies;

(13) “Commercial building” means a non-residential building to which the provisions of ANSI/ASHRAE/IESNA Standard 90.1 apply;

(14) “Conflict of interest” means a situation under which an individual has a relationship with any specific project sponsor, CO₂ emissions offset project or category of offset projects, such that the individual’s other activities or relationships with other persons or organizations render or may render the individual incapable of providing an impartial certification opinion, or otherwise compromise the individual’s objectivity in performing certification functions;

(15) “Condensing mode” means the design and operation of furnaces or boilers in a mode that leads to the production of condensate in flue gases;

(16) “Cooperating regulatory agency” means a regulatory agency in a state or United States jurisdiction that is not a participating state that has entered into a memorandum of understanding with the commissioner to carry out certain obligations relative to CO₂ emissions offset projects in that state or United States jurisdiction, including but not limited to the obligation to perform audits of offset project sites, and report noncompliance with this section;

(17) “Energy conservation measure” (“ECM”) or “energy efficiency measure” (“EEM”) means an activity or a set of activities designed to increase the energy efficiency of a building or improve the management of energy demand and may include, but not be limited to, physical changes to facility equipment, modifications to a building, revisions to operating and maintenance procedures, software changes, or new means of training or managing users of the building or operations and maintenance staff;

(18) “Energy performance” means a measure of the relative energy efficiency of a building, building equipment, or building components, as measured by the amount of energy required to provide building services. For building equipment and components, a relative measure of the impact of equipment or components on building energy usage;

(19) “Energy services” means the provision of useful services to building occupants, such as heating and hot water, cooling, and lighting;

(20) “Forested condition” means land that is at least 1.0 acre in size and 120.0 feet wide measured stem-to-stem from the outer-most edge with forested strips that must be 120.0 feet wide for a continuous length of at least 363.0 feet, and meets one of the following stocking criteria:

- (A) The condition (land?) is at least 10-percent stocked by trees of any size or has been at least 10-percent stocked in the past, and the condition (land?) is not subject to non-forest use that prevent normal tree regeneration and succession such as regular mowing, intensive grazing, or recreation activities, or

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- (B) In several western woodland species where stocking cannot be determined (?), the condition has at least 5-percent crown cover by trees of any size, or has had at least 5-percent cover in the past, and the condition is not subject to non-forest use that prevents normal regeneration and succession such as regular mowing, chaining, or recreation activities;
- (21) “Furnace (residential)” means a self-contained, indirect-fired appliance with a heat input rate of less than 225,000 Btu/hr that supplies heated air to a residential or commercial building through ducts to conditioned spaces;
- (22) “HVAC system” means a system or systems that provide, either collectively or individually, heating, ventilation, or air conditioning to a building, including the equipment, distribution network, and terminals;
- (23) “IESNA” means the Illuminating Engineering Society of North America;
- (24) “Independent verifier” means an individual who has been approved by the commissioner to conduct verification activities;
- (25) “Market penetration rate” means a measure of the diffusion of a technology, product, or practice in a defined market, as represented by the percentage of annual sales for a product or practice, or as a percentage of the existing installed stock for a product or category of products, or as the percentage of existing installed stock that utilizes a practice. The commissioner may determine an appropriate market definition and market penetration metric for a category of technology, product or practice, and may issue guidance specifying the technologies, products or practices that meet a specified market penetration rate;
- (26) “Non-forested condition” means land that does not meet the definition of “forested condition” and any land that includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining rights-of-way, power line clearings of any width, and non-census (?) water. If intermingled in forested areas, unimproved roads and non-forest strips must be more than 120.0 feet wide, and clearings more than one acre in size, to qualify as non-forest land;
- (27) “Offset project” means all equipment, materials, items, or actions directly related to the reduction of CO₂ equivalent emissions or the sequestration of carbon specified in a consistency application submitted pursuant to this section;
- (28) “On-site combustion” means the combustion of fossil fuel at a building to provide building services, such as heating, hot water, or electricity;
- (29) “Passive solar” means a combination of building design features and building components that utilize solar energy to reduce or eliminate the need for mechanical heating and cooling and daytime artificial lighting;

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- (30) “Permanently retired” means a greenhouse gas allowance or credit has been placed in a retirement account controlled by the jurisdiction that generated the allowance or credit, or has been placed in an allowance retirement account controlled by the commissioner or is otherwise determined by the commissioner to be rendered unusable;
- (31) “Project commencement” means the date on which physical construction, installation of equipment or materials or other work at an offset project site began; or the date on which a management activity or protocol is first utilized for an offset project;
- (32) “Project sponsor” means any person who owns or operates an eligible CO₂ emission offset project or CO₂ emissions credit retirement;
- (33) “Regional-type anaerobic digester” means an anaerobic digester using feedstock from more than one agricultural operation, or importing feedstock from more than one agricultural operation. Also referred to as a community digester or centralized digester;
- (34) “Renewable portfolio standard” means the statutory requirement that a load-serving entity provide a certain portion of the electricity it supplies to its customers from renewable energy sources pursuant to (ref Conn. Gen. Stat. sec. 16-245?);
- (35) “Residential building” means a low-rise structure used as a single family home, a multifamily home of three or fewer stories above grade, or a modular or mobile manufactured home for which the provisions of ANSI/ASHRAE/IESNA Standard 90.1 do not apply;
- (36) “RESNET” means the Residential Energy Services Network;
- (37) “SF₆-containing operating equipment” means any equipment used for the transmission or distribution of electricity that contains SF₆;
- (38) “System benefit fund” means the monies collected directly from retail electricity or natural gas ratepayers pursuant to . . . (ref Conn. Gen. Stat. sec. 16-245?);
- (39) “Total solids” means the total of all solids in a sample, including total suspended solids, total dissolved solids, and volatile suspended solids;
- (40) “Transmission or distribution entity” means the assets and equipment used to transmit and distribute electricity from an electric generator to the electrical load of a customer, including all related assets and equipment located within the service territory of the entity, defined as the service territory of a load-serving entity specified by the applicable state regulatory agency. (ref Conn Gen Stat definition in title 16?);
- (41) “Verification” means the third-party verification by an independent verifier that certain parts of a CO₂ emissions offset project consistency application or measurement, monitoring and verification report conforms to the requirements of this section;

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- (42) “Volatile solids” means the fraction of total solids that is comprised primarily of organic matter;
- (43) “Whole-building energy performance” means the overall energy performance of a building, taking into account the integrated impact on energy usage of all building components and systems;
- (44) “Whole-building retrofit” means any building project that involves the replacement of more than one building system, or set of building components, and also requires a building permit; and
- (45) “Zero net energy building” means a building designed to produce as much energy, using renewable energy sources, as the building is projected to use, as measured on an annual basis.

(b) Applicability. This section applies to the sponsor of any CO₂ emissions offset project undertaken to create CO₂ offset allowances for sale or use in the State of Connecticut in accordance with the requirements of section 22a-174-31 of the Regulations of Connecticut State Agencies or in any other participating state.

(c) General Requirements for CO₂ Emissions Offset Projects.

- (1) The commissioner shall award CO₂ offset allowances to sponsors of CO₂ emissions offset projects that have reduced or avoided atmospheric loading of CO₂ or CO₂ equivalent or sequestered carbon as demonstrated in accordance with the applicable provisions of this section provided that such projects represent CO₂ or CO₂ equivalent reductions or carbon sequestration that are real, additional, verifiable, enforceable, and permanent. The use of such offset allowances for compliance purposes are subject to the provisions of section 22a-174-31 of the Regulations of Connecticut State Agencies.
- (2) Eligible CO₂ emissions offsets projects. The commissioner shall award CO₂ emissions offset allowances to the sponsor of any offset project who has met all applicable requirement of this section. Eligible offset projects may be located in any participating state or in any state or other U.S. jurisdiction that has entered into a memorandum of understanding with the commissioner to carry out certain obligation relative to CO₂ emissions offset projects in such state or U.S. jurisdiction, including but not limited to the obligation to perform audits of offset project sites, and report violations of this section to the commissioner or the commissioner’s designee.
- (3) Eligible CO₂ emissions credit retirements. The commissioner shall award CO₂ offset allowances to the sponsor of a CO₂ emissions credit retirement who has met all the applicable requirements of this section. CO₂ emissions credit retirements include the permanent retirement of greenhouse gas allowances or credits issued pursuant to any governmental mandatory carbon constraining program outside the United States provided such program

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places a specific tonnage limit on greenhouse gas emissions or certified greenhouse gas emissions reduction credits issued pursuant to the United Nations Framework Convention on Climate Change (UNFCCC) or protocols adopted through the UNFCCC process. The commissioner may award CO₂ offset allowances for CO₂ emissions credit retirements only after the occurrence of a stage two trigger event.

- (4) General Requirements. In addition to the requirements set forth in subsections (d) through (h) of this section, the following general requirements shall apply to each offset project:
- (A) CO₂ emissions offset allowances shall not be awarded for an offset project or CO₂ emissions credit retirement that is required pursuant to any local, state or federal law, regulation, or administrative or judicial order. If an offset project receives a **consistency determination** under this subsection and is later required by local, state or federal law, regulation, or administrative or judicial order, then the offset project shall only remain eligible for the award of CO₂ emissions offset allowances until the end of its current allocation period.
 - (B) If an offset project includes an electric generation component, the project sponsor shall transfer to the commissioner or the commissioner's designee the **legal** rights to all attribute credits generated from the operation of the offset project, other than CO₂ emissions offset allowances issued under this subsection, that may be used for compliance with a renewable portfolio standard or other regulatory requirement.
 - (C) Offset projects may not receive funding or other incentives from any systems benefit fund, or funds or other incentives provided through the consumer benefit or strategic energy purpose allocation described in section 22a-174-31(f)(3) of the Regulations of Connecticut State Agencies.
 - (D) CO₂ emissions offset allowances shall not be awarded to an offset project or CO₂ emissions credit retirement that is awarded credits or allowances under any other mandatory or voluntary greenhouse gas program or by any other carbon market.
- (5) Maximum allocation periods for CO₂ emissions offset projects. The commissioner or the commissioner's designee may award CO₂ offset allowances under this section as follows:
- (A) Maximum allocation periods. Except as provided in subparagraph (B) of this subdivision, the commissioner shall award CO₂ offset allowances under this subsection for any offset project for an allocation period not to exceed ten years. At the end of the initial 10-year allocation period and upon a demonstration by the project sponsor that the offset project continues to meet all applicable requirements of this section, the commissioner may award CO₂ offset allowances for a second 10-year allocation period. Prior to the expiration of the initial allocation period, the offset project sponsor must submit a consistency

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application pursuant to this section and receive a consistency determination from the commissioner.

- (B) Maximum afforestation crediting period. The commissioner shall award CO₂ offset allowances under this subsection for any afforestation offset project for an initial 20-year allocation period. At the end of the initial 20-year allocation period and upon a demonstration by the project sponsor that the afforestation offset project continues to meet all applicable requirements of this section, the commissioner may award CO₂ offset allowances for a second 20-year allocation period. At the end of the second 20-year allocation period and upon a demonstration by the project sponsor that the afforestation offset project continues to meet all applicable requirements of this section, the commissioner may award CO₂ offset allowances for a third 20-year allocation period. In no event shall an afforestation offset project be awarded CO₂ offset allowances for more than a total of 60 allocation years.
- (6) Timing of Offset Projects. The commissioner may award CO₂ offset allowances under this section only for offset projects that commenced on or after December 20, 2005.
- (7) Offset Project Audit. Project sponsors shall provide the commissioner or the commissioner's designee access to the physical location of the offset project in order to determine compliance with this section.
- (8) Ineligibility due to noncompliance. If at any time the commissioner or the commissioner's designee determines that a project sponsor has not complied with the requirements of this section, the commissioner may revoke and retire any and all offset allowances in the project sponsor's general account. If at any time the commissioner determines that an offset project does not comply with the requirements of this section, the commissioner may revoke any prior approvals issued to the sponsor of such offset project.
- (9) Application Process
- (A) Establishment of general account. The sponsor of an offset project or CO₂ emissions credit retirement shall establish a general account under section 22a-174-31(g)(2)(B) of the Regulations of Connecticut State Agencies. All submissions to the commissioner required for the award of CO₂ offset allowances under this subsection must be from the CO₂ authorized account representative for the general account of the sponsor of the relevant offset project or CO₂ emissions credit retirement;
 - (B) Application time frames.
 - (i) For offset projects commenced prior to January 1, 2009, the project sponsor shall submit the consistency application covering the pre-2009 period no later than June 30, 2009,

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- (ii) For offset projects commenced on or after January 1, 2009, the project sponsor shall submit the consistency application no later than the date that is six months after the offset project is commenced, and
 - (iii) The commissioner shall deny any application that fails to meet the time frames specified in this subparagraph;
- (C) Offset project application contents. The sponsor of an offset project shall provide the following information to the commissioner:
- (i) The project's sponsor's name, address, e-mail address, telephone number and facsimile transmission number, to the extent they are different from those of the project sponsor's CO₂ authorized account representative;
 - (ii) The offset project description as required by the relevant provisions of subsection (d) through (h) of this section;
 - (iii) The emissions baseline determination as required by relevant provisions of subsection (d) through (h) of this section;
 - (iv) An explanation of how the projected reduction or avoidance of atmospheric loading of CO₂ or CO₂ equivalent or the sequestration of carbon is to be quantified, monitored and verified as required by the relevant provisions of subsection (d) through (h) of this section;
 - (v) A completed application agreement that reads as follows: "The undersigned project sponsor recognizes and accepts that the application for, and the receipt of, CO₂ offset allowances under the CO₂ Budget Trading Program is predicated on the project sponsor following all the requirements of section 22a-174-31a of the Regulations of Connecticut State Agencies. The project sponsor holds the legal rights to the offset project, or has been granted the right to act on behalf of a party that holds the legal rights to the offset project. I understand that eligibility for the award of offset allowances under section 22a-174-31 of the Regulations of Connecticut State Agencies is contingent on meeting the requirements of this section. I authorize the commissioner or the commissioner's designee to audit this offset project, including the monitoring and verification plan, for purposes of verifying that the project has been implemented as described in this application. I understand that this right to audit shall include the right to enter the physical location of the offset project. I submit to the legal jurisdiction of the State of Connecticut.";
 - (vi) A statement and certification report signed by the offset project sponsor certifying that all offset projects for which the sponsor has received

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offset allowances under this section, under the sponsor's ownership or control (or under the ownership or control of any entity which controls, is controlled by, or has common control with the sponsor) are in compliance with all applicable requirements of the CO₂ Budget Trading Program in all participating states;

- (vii) A statement and certification report drafted and signed by an independent certifier accredited pursuant to this section indicating that the independent certifier has reviewed the entire application and evaluated the adequacy and validity of the following information in relation to the applicable requirements in this section: the demonstration that the offset project meets the applicable eligibility requirements of this section; baseline emissions in accordance with this section; the monitoring and verification plan submitted in accordance with this section; and such other statements as may be required by commissioner or the commissioner's designee;
 - (viii) Disclosure of any voluntary or mandatory programs, other than the CO₂ Budget Trading Program, to which greenhouse gas emissions data related to the offset project has been, or will be, reported;
 - (ix) For offset projects located in a state that is not a participating state, a demonstration that the project sponsor has complied with all requirements of the cooperating regulatory agency in the state where the offset project is located; and
 - (x) Any other information the commissioner or the commissioner's designee may require in order to evaluate the proposed offset project.
- (D) For a CO₂ emissions allowance retirement the owner or operator of a CO₂ budget source subject to this section, shall provide the following information on forms provided by the commissioner or the commissioner's designee:
- (i) The CO₂ budget source's company name, company address, site address, corporate name, corporate address, e-mail address, telephone number and facsimile transmission number, to the extent they are different from the CO₂ authorized account representative;
 - (ii) The calendar year of the data; and
 - (iii) An allowance use summary including the starting balance of CO₂ allowances, transactions concerning CO₂ allowances, ending balance of CO₂ allowances and serial numbers for allowances in specific transactions.

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(10) CO₂ emissions offset credit retirements. For a CO₂ emissions credit retirement, the application must include sufficient information to demonstrate that the CO₂ emissions credit is eligible pursuant to this section, was lawfully held by the applicant, and has been permanently and irrevocably retired.

(11) Place for filing.

- (A) For an offset project located in one Participating State in whole or in part, the application must be filed with the appropriate commissioner in that State.
- (B) For an offset project located wholly outside all Participating States, the application may be filed with the appropriate commissioner in any one Participating State.
- (C) For an offset project located in more than one Participating State, the application must be filed in the Participating State where the larger part of the emissions reduction or carbon sequestration due to the offset project activity is projected to occur.
- (D) For CO₂ emissions credit retirements, the application may be filed with the appropriate commissioner in any Participating State.

(12) Commissioner action on applications.

- (A) Completeness determination. Within 30 days following receipt of the application filed pursuant to subdivision (9)(B) of this subsection, the commissioner or the commissioner's designee will notify the project sponsor whether the application is complete. A complete application is one that is in an approved form and is determined by the commissioner or the commissioner's designee to be complete for the purpose of commencing review of the application. In no event shall a completeness determination prevent the commissioner or the commissioner's designee from requesting additional information in order to fully evaluate the proposed project in accordance with subparagraph (B) of this subdivision.
- (B) Consistency determination. Within 90 days of making the completeness determination under subparagraph (A) of this subdivision, the commissioner or the commissioner's designee will issue a determination as to whether the project sponsor's application is consistent with the requirements of this section and the requirements of the applicable offset project standard of subsection (d), (e), (f), (g) or (h) of this section. For any application found to lack consistency with these requirements, the commissioner or the commissioner's designee will inform the project sponsor of the application's deficiencies. The project

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sponsor may revise and resubmit the application within 30 days of a finding of inconsistency.

(d) Landfill Methane (CH₄) Capture and Destruction

(1) Eligibility. An offset projects that captures and thermally destroys methane from a landfill, through flaring, direct use by an industrial consumer, or combustion for electricity generation, may be eligible for certification as a CO₂ emissions offset, provided the proposed project meets the following requirements:

- (A) The offset project may only occur at a landfill that is not subject to the New Source Performance Standards for municipal solid waste landfills under subpart Cc and subpart WWW of 40 CFR 60, a non-NSPS landfill; and
- (B) Offset Project description. The project sponsor shall provide a detailed narrative of the offset project action(s) to be taken, including supporting materials as appropriate. The project narrative shall include the following:
 - (i) Owner and operator of the offset project;
 - (ii) Location and specifications of the landfill where the offset project will occur, including waste in place;
 - (iii) Owner and operator of the landfill where the offset project will occur; and
 - (iv) Specifications of the equipment to be installed and a technical schematic of the offset project.

(2) Emissions baseline determination. The emissions baseline shall represent the potential fugitive emissions, in tons of CO₂e, of the methane (CH₄) collected and metered for thermal destruction as part of the offset project. Baseline CH₄ fugitive emissions shall be calculated as follows:

$$\text{Emissions (tons CO}_2\text{e)} = (\text{V} \times \text{M} \times \text{GWP})/2000$$

Where:

- V = Volume of CH₄ collected (ft³)
- M = Mass of CH₄ per cubic foot (0.0416 lbs/ft³ default value at 1 atmosphere and 20° C)
- GWP = CO₂e global warming potential of CH₄ (23)

(3) Calculating emissions reductions. Emissions reductions shall be determined based on the difference between potential fugitive CH₄ emissions that would have occurred if metered CH₄ collected from the landfill for thermal destruction as part of the offset project was not

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collected and destroyed, as represented by the CH₄ collected and destroyed due to the offset project. CO₂e emissions reductions shall be calculated as follows:

$$\text{Emissions Reductions (short tons CO}_2\text{e)} = (\text{V} \times \text{M} \times (1 - \text{OX}) \times \text{C}_{\text{ef}} \times \text{GWP}) / 2000$$

Where:

V	=	Volume of CH ₄ collected (ft ₃)
M	=	Mass of CH ₄ per cubic foot (0.0416 lbs/ft ³ default value at 1 atmosphere and 20° C)
OX	=	Oxidation factor (0.10), representing estimated portion of collected CH ₄ that would have eventually oxidized to CO ₂ if not collected
C _{ef}	=	Combustion efficiency of methane control technology (0.98)
GWP	=	CO ₂ e global warming potential of CH ₄ (23)

(4) Monitoring and verification requirements. Offset projects shall employ a landfill gas collection system that provides continuous metering and data computation of landfill gas volumetric flow rate and CH₄ concentration. Annual monitoring and verification report required pursuant to subsection (j) of this section shall include annual volumetric flow rate and CH₄ concentration data, including documentation that the CH₄ was actually supplied to the combustion source.

- (A) The project sponsor shall submit a monitoring and verification plan as part of the certification application that includes a quality assurance and quality control program associated with equipment used to determine landfill gas volumetric flow rate and CH₄ composition. The monitoring and verification plan shall also include provisions for ensuring that measuring and monitoring equipment is maintained, operated and calibrated based on manufacturer recommendations, as well as provisions for the retention of maintenance records for audit purposes. The monitoring and verification plan shall be certified by an independent certifier accredited pursuant to subsection (i) of this section.
- (B) The project sponsor shall annually verify landfill gas CH₄ composition through landfill gas sampling and third party laboratory analysis using applicable U.S. Environmental Protection Agency laboratory test methods.

(e) Reduction in emissions of sulfur hexafluoride (SF₆).

(1) Eligibility. An offset project to reduce or eliminate SF₆ emissions through capture and storage, recycling or destruction, may be eligible for certification as CO₂ emissions offsets. Project based reductions may consist of actions or equipment replacement projects to reduce or eliminate SF₆ emissions from electric transmission and distribution equipment, provided that the project sponsor also demonstrates:

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- (A) Eligible offset projects shall consist of the incremental actions to be taken, beyond current actions, to achieve a reduction in emissions of SF₆ beyond the transmission and distribution entity’s emissions in the baseline reporting year. The identified actions to be taken shall be consistent with the guidance provided in International Electrotechnical Commission (IEC) 1634, “High-voltage switchgear and control gear – Use and handling of sulfur hexafluoride (SF₆) in high-voltage switchgear and control gear,” (CEI/IEC 1634, 1995-04), and Electric Power Research Institute (EPRI), “Practical Guide to SF₆ Handling Practices,” (TR-113933, 2002);
- (B) Except as provided in subparagraph (C) of this subdivision, eligible offset projects shall take place where the SF₆ entity-wide emissions rate for the baseline year is less than the applicable emissions rate in Table 31a-1B. The entity-wide SF₆ emissions rate shall be calculated as follows:

$$SF_6 \text{ Emissions Rate (\%)} = (\text{Total } SF_6 \text{ Emissions for Reporting Year}) / (\text{Total } SF_6 \text{ Nameplate Capacity at End of Reporting Year})$$

where:

SF₆ Nameplate Capacity refers to all SF₆-containing equipment owned and/or operated by the entity, at full and proper SF₆ charge of the equipment rather than the actual charge of the equipment, which may reflect leakage.

**Table 31a-1A and B
SF₆ Emissions Rate Performance Standards**

Table 31a-1A. Emission Regions

Region A	Region B	Region C	Region D	Region E
Connecticut	Alabama	Colorado	Arkansas	Alaska
Delaware	District of Columbia	Illinois	Iowa	Arizona
Maine	Florida	Indiana	Kansas	California
Massachusetts	Georgia	Michigan	Louisiana	Hawaii
New Jersey	Kentucky	Minnesota	Missouri	Idaho
New York	Maryland	Montana	Nebraska	Nevada
New Hampshire	Mississippi	North Dakota	New Mexico	Oregon
Pennsylvania	North Carolina	Ohio	Oklahoma	Washington
Rhode Island	South Carolina	South Dakota	Texas	
Vermont	Tennessee	Utah		
	Virginia	Wisconsin		
	West Virginia	Wyoming		

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Table 31a-1B. Emissions Rate Performance Standards

Region	Emission Rate ^a
Region A	9.68%
Region B	5.22%
Region C	9.68%
Region D	5.77%
Region E	3.65%
U.S. (National)	9.68%

^a Based on weighted average 2004 emissions rates for U.S. EPA SF₆ Partnership utilities in each region. If the weighted average emissions rate in a region is higher than the national weighted average, the default performance standard is the national weighted average emissions rate.

- (C) An SF₆ offset project located at a transmission or distribution entity serving a predominantly urban service territory shall be eligible even if the entity does not meet the emissions rate requirement at subparagraph (B) Table 31a- 1B of this subdivision, provided the commissioner or the commissioner's designee determines that two or more of the following factors functionally impede management of SF₆ and prevent such entities from meeting the entity-wide emissions rate requirement:
- (i) The entity is comprised of older than average installed transmission and distribution equipment in relation to the national average age of equipment,
 - (ii) A majority of the entity's electricity load is served by equipment that is located underground, and poor accessibility of such underground equipment precludes management of SF₆ emissions through regular ongoing maintenance,
 - (iii) The inability to take a substantial portion of equipment out of service, as such activity would jeopardize system reliability as set forth in applicable regulatory criteria documents, and
 - (iv) Required equipment purpose or design for a substantial portion of entity transmission and distribution equipment results in inherently leak-prone equipment.

(2) Offset Project description. The offset project sponsor shall provide a detailed narrative of the offset project actions to be taken, including supporting materials as appropriate. The offset project narrative shall include the following:

- (A) A description of the transmission or distribution entity specifying the service territory served by the entity.

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(B) The owner and operator of the transmission or distribution entity.

(3) Emissions baseline determination. Baseline SF₆ emissions shall be determined based on annual entity-wide reporting of SF₆ emissions for the calendar year immediately preceding the calendar year in which the consistency application is filed and such calendar year shall be designated as the baseline year. If the consistency application is filed prior to 2009, the baseline year may be 2005, but no earlier. The reporting entity shall systematically track and account for all entity-wide uses of SF₆ in order to determine entity-wide emissions of SF₆. The scope of such tracking and accounting shall include all electric transmission and distribution assets and all SF₆-containing and SF₆-handling equipment owned or operated by the reporting entity.

(A) Emissions (lbs.) shall be determined based on the following mass balance method:

$$\text{SF}_6 \text{ Emissions} = (\text{SF}_6 \text{ Change in Inventory}) + (\text{SF}_6 \text{ Purchases and Acquisitions}) \\ - (\text{SF}_6 \text{ Sales and Disbursements}) - (\text{Change in Total SF}_6 \text{ Nameplate Capacity of Equipment})$$

Where:

Change in Inventory is the difference between the quantity of SF₆ gas in storage at the beginning of the reporting year and the quantity in storage at the end of the reporting year.

The term “quantity in storage” includes all SF₆ gas contained in cylinders, including 115-pound storage cylinders, gas carts, and other storage containers. This term does not refer to SF₆ gas held in SF₆-using operating equipment. The change in inventory will be negative if the quantity of SF₆ gas in storage increases over the course of the year.

Purchases and Acquisitions of SF₆ is the sum of all the SF₆ gas acquired from other parties during the reporting year, as contained in storage containers or SF₆-using operating equipment.

Sales and Disbursements of SF₆ is the sum of all the SF₆ gas sold or otherwise disbursed to other parties during the reporting year, as contained in storage containers and SF₆-using operating equipment.

Change in Total SF₆ Nameplate Capacity of Equipment is the net change in the total volume of SF₆-containing operating equipment during the reporting year. The net change in nameplate capacity is equal to new equipment nameplate capacity, minus retired nameplate capacity. This quantity will be negative if the retired equipment has a total nameplate capacity larger than the total nameplate capacity of the new equipment. “Total nameplate capacity” refers to the full

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and proper SF₆ charge of the equipment rather than to the actual charge, which may reflect leakage.

- (B) Emissions shall be calculated as follows:

$$\text{Emissions (tons CO}_2\text{e)} = [(V_{\text{iby}} - V_{\text{iey}}) + (PA_{\text{psd}} + PA_{\text{e}} + PA_{\text{rre}}) - (SD_{\text{op}} + SD_{\text{rs}} + SD_{\text{df}} + SD_{\text{sor}}) - (CNP_{\text{ne}} - CNP_{\text{rse}})] \times \text{GWP}/2000$$

Where (all SF₆ values in lbs):

V_{iby}	=	SF ₆ inventory in cylinders (not equipment) at the beginning of the reporting year
V_{iey}	=	SF ₆ inventory in cylinders (not equipment) at the end of the reporting year
PA_{psd}	=	SF ₆ purchased from suppliers or distributors in cylinders
PA_{e}	=	SF ₆ provided by equipment manufacturers with or inside equipment
PA_{rre}	=	SF ₆ returned to the reporting entity after off-site recycling
SD_{op}	=	Sales of SF ₆ to other parties, including gas left in equipment that is sold
SD_{rs}	=	Returns of SF ₆ to supplier (producer or distributor)
SD_{df}	=	SF ₆ sent to destruction facilities
SD_{sor}	=	SF ₆ sent off-site for recycling
CNP_{ne}	=	Total SF ₆ nameplate capacity of new equipment at proper full charge
CNP_{rse}	=	Total SF ₆ nameplate capacity of retired or sold equipment at proper full charge
GWP	=	CO ₂ e global warming potential of SF ₆ (22,200)

- (C) As part of the project application required pursuant to subsection (c) of this section and in annual monitoring and verification reports required pursuant to subsection (j) of this section, the project sponsor shall provide the documentation required at subdivision (5)(A) through (C) of this subsection to support emissions calculations.

(4) Calculating emissions reductions. Emissions reductions shall represent the annual entity-wide avoided fugitive emissions of SF₆ for the reporting entity. Emissions reductions shall be determined as follows using the quantification method outlined in subdivision (3)(B) of this subsection to determine emissions in both the baseline year and reporting years:

$$\text{Emissions Reduction (short tons CO}_2\text{e)} = (\text{Total Pounds of SF}_6\text{ Emissions in Baseline Reporting Year}) - (\text{Total Pounds of SF}_6\text{ Emissions in Reporting Year}) \times \text{GWP}/2000$$

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Where:

GWP = CO₂e global warming potential of SF₆ (22,200)

(5) Annual monitoring and verification requirements. The annual monitoring and verification report shall include supporting material detailing the calculations and data used to determine SF₆ emissions reductions and shall also provide the following documentation:

- (A) The project sponsor shall identify all facilities managed by the entity from which all SF₆ gas is procured and disbursed and maintain an entity-wide log of all SF₆ gas procurements and disbursals. The entity-wide log shall include the weight of each cylinder transported before shipment from the facilities and the weight of each cylinder after return to the facilities. A specific cylinder log shall also be maintained for each cylinder that is used to fill equipment with SF₆ or reclaim SF₆ from equipment. The cylinder log shall be retained with the cylinder and indicate the location and specific identifying information of the equipment being filled, or from which SF₆ is reclaimed, and the weight of the cylinder before and after this activity. The cylinder log shall be returned with the cylinder to the facility when the activity is complete or the cylinder is empty.
- (B) A current entity-wide inventory of all SF₆-containing operating equipment and all other SF₆-related items, including cylinders, gas carts, and other storage containers used by the entity. The inventory shall be reviewed by an independent certifier accredited pursuant to subsection (i) of this section.
- (C) The project sponsor shall provide a monitoring and verification plan as part of the consistency application, which shall include an SF₆ inventory management and auditing protocol and a process for quality assurance and quality control of inventory data. The monitoring and verification plan shall be certified by an independent certifier accredited pursuant to subsection (i) of this section.

(f) Sequestration of Carbon Due To Afforestation.

(1) Eligibility. Offset projects that result in the conversion of land from a non-forested to forested state shall be eligible for certification as a CO₂ emissions offset, provided that projects meet the following requirements:

- (A) Eligible offset projects have been in a non-forested state for at least the ten (10) years preceding the commencement of the offset project.
- (B) Eligible offset projects shall be managed in accordance with widely accepted environmentally sustainable forestry practices and designed to promote the restoration of native forests by using mainly native species and avoiding the introduction of invasive non-native species. If commercial timber harvest activities are to occur, certification must be obtained, prior to any harvest activities at the site, through the Forest Stewardship Council (FSC), Sustainable

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Forestry Institute (SFI), American Tree Farm System (ATFS), or such other similar organizations as may be approved by the commissioner or the commissioner's designee.

(2) Offset Project description. The project sponsor shall provide a detailed narrative of the offset project actions to be taken, including supporting materials as appropriate. The offset project narrative shall include the following:

- (A) Owner of the land within the offset project boundary;
- (B) Detailed map of the land within the offset project boundary and areas adjacent to the offset project boundary;
- (C) A copy of the permanent conservation easement required pursuant to subdivision (6) of this subsection; and
- (D) Plant species to be planted or established via natural regeneration, and a forest management plan consistent with the requirements of subdivision (3) of this subsection.

(3) Carbon sequestration baseline determination. The existing sequestered carbon within the project boundary and the reserve set-aside boundary shall be calculated prior to commencement of the offset project. The carbon sequestration baseline shall be determined based on a sum of measurements, made no more than 12 months prior to offset project commencement, of the carbon content of the following carbon pools:

- (A) Carbon content shall be calculated for the following required carbon pools:
 - (i) Live above-ground tree biomass,
 - (ii) Live below-ground tree biomass, and
 - (iii) Soil carbon;
- (B) Carbon content may be calculated for the following optional carbon pools:
 - (i) Live above-ground non-tree biomass,
 - (ii) Dead organic matter, forest floor, and
 - (iii) Dead organic matter, coarse woody debris;
- (C) Carbon content shall be calculated individually for each carbon pool within the offset project boundary;

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- (D) To increase the accuracy of measurement and verification, the area within both the offset project boundary shall be divided into strata and sub-populations that form relatively homogenous units. When defining strata, the project sponsor shall consider vegetation and tree species, including existing vegetation and trees and those to be utilized as part of the offset project activity, and site factors such as soil type, elevation, slope and other factors as warranted;
- (E) Calculation of sequestered carbon for each carbon pool in each reporting stratum shall be based on the following:

$$C = A \times C/ha$$

Where:

- A = Area in hectares within each reporting stratum
- C = Carbon content (for each carbon pool)
- C/ha = Mean carbon content per hectare for each carbon pool

- (F) Total carbon contained within the offset project boundary and reserve set-aside boundary represented in tons of carbon shall be calculated as follows:

$$TC_{pb} = TC_{latb} + TC_{lbtb} + TC_s [+ TC_{lantb} + TC_{doff} + TC_{docwd}]$$

Where:

- TC_{pb} = Total carbon content within the offset project boundary (TC_{pb}) (sum of carbon content of all carbon pools in all reporting sub-populations)
- TC_{latb} = Sum of carbon content of live above-ground tree biomass in all reporting sub-populations
- TC_{lbtb} = Sum of carbon content of live below-ground tree biomass in all reporting sub-populations
- TC_s = Sum of carbon content of soil carbon in all reporting sub-populations
- TC_{lantb} [option]= Sum of carbon content of live above-ground non-tree biomass in each reporting sub-populations
- TC_{doff} [option]= Sum of carbon content of dead organic matter, forest floor in all reporting sub-populations
- TC_{docwd}[option] = Sum of carbon content of dead organic matter, coarse woody debris in all reporting sub-populations

- (G) Each individual carbon pool to be measured must be directly measured using a measurement protocol and sample size that achieves a demonstrated quantified

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accuracy such that there is 95% confidence that the resulting reported value is within 10% of the true value. Measurement and sampling practices shall meet the following requirements:

- (i) An adequate sample size that meets the requirements of subparagraph (ii) of this subparagraph shall be determined for each stratum.
- (ii) The minimum number of required sampling plots for each reporting stratum shall be determined based on the following:

$$n = (s \times 1.960) / (\text{mean} \times \text{re})^2$$

Where:

n	=	required number of sample plots for each reporting sub-populations
s	=	standard deviation
mean	=	mean reported carbon content for the sample population
re	=	reasonable level of sampling error (0.08) to assure a total maximum error of 10% for the 95% confidence interval, that assumes total error due to measurement error of 0.02

- (H) Direct measurement procedures shall be consistent with current forestry good practice and the guidance contained in U.S. Department of Energy, *Technical Guidelines Voluntary Reporting of Greenhouse Gases (1605(b)) Program; Chapter 1, Emissions Inventories; Part 1 Appendix: Forestry; Section 3: Measurement Protocols for Forest Carbon Sequestration* (March 2006).

(4) Calculating carbon sequestered. Carbon sequestration shall be determined using a base year approach, where the amount of carbon sequestered is measured as a net increase in carbon relative to the base year measurement. Carbon sequestration, represented in tons of carbon, shall be the amount of net additional carbon sequestered during each calculation period, based upon aggregate carbon uptake and carbon emissions for the sum of carbon pools, relative to the baseline carbon content or the carbon content as of the previous calculation period, if above the baseline carbon content, as applicable. CO₂ emissions offsets shall be issued based on the amount of net additional carbon sequestered within the offset project boundary during each reporting period, and represented in tons of CO₂ equivalent. Sequestered carbon shall be calculated using a stock-change approach as follows:

$$\text{NCS}_t = I_t - I_{t-1}$$

Where:

NCS _t	=	Net carbon sequestered in reporting period t
I _t	=	Inventory of carbon stock for all carbon pools in all

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reporting sub-populations within the offset project boundary in reporting period t

I_{t-1} = Inventory of carbon stock for all carbon pools in all reporting sub-populations within the offset project boundary in the reporting period immediately preceding reporting period t

- (A) Each of the carbon pools that were measured as part of the baseline determination must be re-measured using the same methodology, and to the same or better quantified accuracy consistent with the requirements of subdivisions (3)(G) and (H) of this subsection, as that used for the baseline determination.
 - (B) The net change in each pool's carbon stock in each reporting stratum is calculated by subtracting the baseline carbon stock (or stock at the previous monitoring) from the carbon stock at the time of the current monitoring. Determination of carbon stock shall be in accordance with the formulas and procedures in subdivision (3) of this subsection.
 - (C) Net carbon stock change for the offset project is the sum of the net changes in the carbon stock of all applicable pools in all reporting sub-populations within the offset project boundary, less ten percent (10%) to account for potential losses of sequestered carbon. This 10% discount shall not be required, provided the project sponsor retains long-term insurance, approved by the commissioner or their designee, that guarantees replacement of any lost sequestered carbon for which CO₂ allowances were issued pursuant to subsection (j) of this section.
- (5) Monitoring and verification requirements. Total carbon stock shall be calculated not less than every five years. Monitoring and verification is subject to the following requirements:
- (A) Monitoring and verification reports shall include data from direct measurement of carbon content for all plots used to determine baseline and reporting period carbon content.
 - (B) The consistency application shall include a monitoring and verification plan certified by the commissioner or their designee or an independent certifier accredited pursuant to subsection (p) of this section. The monitoring and verification plan shall include the following:
 - (i) Direct carbon measurement procedures consistent with the requirements at subdivision (3)(H) of this subsection,
 - (ii) The designation of sub-populations pursuant to subdivision (3)(D) of this subsection. The determination of the minimum number of sampling plots pursuant to subdivision (3)(G) of this subsection, and

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- (iii) If commercial timber harvest activities have occurred or will occur, assessment of management practices to ensure that the offset project has been managed in accordance with environmentally sustainable forestry practices consistent with the Forest Stewardship Council (FSC), Sustainable Forestry Institute (SFI), American Tree Farm System (ATFS), or such other similar organizations as may be approved by the commissioner or their designee;
 - (C) The applicant shall allow access to the project site and the reserve set-aside site to the accredited independent certifier, or as requested by the commissioner or the commissioner's designee.
- (6) Carbon Sequestration Permanence. The offset project shall meet the following requirements to address permanence of sequestered carbon:
- (A) The project sponsor shall place the land within the offset project boundary under a legally binding permanent conservation easement, approved by the commissioner or the commissioner's designee, which requires the land to be maintained in a forested state in perpetuity;
 - (B) The conservation easement shall include a requirement that the carbon density within the offset project boundary be maintained at long-term levels at or above that achieved as of the end of the CO₂ offset crediting period pursuant to subdivision (c)(5) of this subsection; and
 - (C) The conservation easement shall require that the land be managed in accordance with environmentally sustainable forestry practices.

(g) Reduced or Avoided CO₂ Emissions Due to End-Use Energy Efficiency

(1) Eligibility. An offset project that reduces CO₂ emissions by reducing on-site combustion of natural gas, oil, or propane for end-use in an existing or new commercial or residential building by improving the energy efficiency of fuel usage and the energy-efficient delivery of energy services may qualify for the award of CO₂ emissions offset allowances under this subsection, provided it meets the requirements of this subdivision. Eligible new buildings are limited to new buildings that are designed to replace an existing building on the offset project site, or new buildings designed to be zero net energy buildings. Eligible offset projects may include the following energy conservation measures (ECMs):

- (A) Improvements in the energy efficiency of combustion equipment that provide space heating and hot water, including a reduction in fossil fuel consumption through the use of renewable energy;
- (B) Improvements in the efficiency of heating distribution systems, including proper sizing and commissioning of heating systems;

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- (C) Installation or improvement of energy management systems;
 - (D) Improvement in the efficiency of hot water distribution systems and reduction in demand for hot water;
 - (E) Measures that improve the thermal performance of the building envelope and/or reduce building envelope air leakage;
 - (F) Measures that improve the passive solar performance of buildings and utilization of active heating systems using renewable energy; and
 - (G) Fuel switching to a less carbon-intensive fuel for use in combustion systems, including the use of liquid or gaseous renewable fuels, provided that conversions to electricity are not eligible.
- (2) Offset Project description. The project sponsor shall provide a detailed narrative of the offset project actions to be taken, including supporting materials as appropriate. The offset project narrative shall include the following:
- (A) Location and specifications of the building(s) where the offset project actions will occur;
 - (B) Owner and operator of the building(s);
 - (C) The parties implementing the offset project, including lead contractor(s), subcontractors, and consulting firms;
 - (D) Specifications of equipment and materials to be installed as part of the offset project; and
 - (E) Building plans and offset project technical schematics, as applicable.
- (3) Performance standards. For offset projects initiated on or after January 1, 2009, the project sponsor shall demonstrate, to the satisfaction of the commissioner or the commissioner's designee, that energy conservation measures implemented as part of eligible offset projects listed in subdivision (1) of this subsection have a market penetration rate of less than 5%. Offset projects initiated on or after January 1, 2009 shall also meet the applicable requirements set forth in subdivisions (3)(A)(iii) and (3)(C) of this subsection. For offset projects initiated prior to 2009, energy conservation measures implemented as part of eligible offset projects listed in subdivision (1) of this subsection shall meet the following performance or prescriptive criteria, as applicable:
- (A) Combustion equipment. Combustion equipment shall meet the following energy efficiency performance and other requirements, as applicable:

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- (i) Commercial boilers. Commercial boilers shall meet the following energy efficiency criteria set forth in Table 31a-2:

Table 31a-2

Minimum Commercial Boiler Energy Efficiency

<u>Technology</u>	<u>Size (Btu/hr)</u>	<u>Rating Method</u>	<u>Minimum Efficiency</u>
Gas-fired ^b	125,000-300,000	AFUE	> 88.0%
	300,000-12,500,000	Thermal Efficiency ^a	≥ 90.0%
Oil-fired	≥ 300,000	Thermal Efficiency	≥ 84.0%

^a Thermal Efficiency is defined as useful energy output (Btu) divided by energy input (Btu) and presented as a percentage. This shall be measured under steady state conditions, at full rated useful thermal output, 140°F supply from and 120°F return water temperature to the boiler.

^b Gas-fired boilers shall be installed with controls that allow the boiler to operate in condensing mode and installed with vents designed for positive vent static pressure and vent gas temperature that leads to condensate production in the vent.

- (ii) Residential combustion equipment. Residential combustion equipment, furnaces, boilers and water heaters, shall meet or exceed the following energy efficiency criteria set forth in Table 31a-3:

Table 31a-3

Minimum Residential Combustion Equipment Energy Efficiency

<u>Technology</u>	<u>Rating Method</u>	<u>Min. Efficiency</u>
Gas-fired furnace	AFUE	≥ 94%
Oil-fired furnace	AFUE	≥ 92%
Gas/oil-fired boiler	AFUE	≥ 90%
Gas/oil-fired water heater	Energy Factor ^a	≥ 0.62

^a Energy Factor is an efficiency ratio of the energy supplied in heated water divided by the energy input to the water heater, based on U.S. Department of Energy test procedure in accordance with subpart B, Appendix E of 10 CFR 430.

- (iii) Installation best practice. Combustion equipment and related air handling equipment (HVAC systems) shall be sized and installed in accordance with the following applicable requirements and

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specifications: Commercial HVAC systems shall meet the applicable sizing and installation requirements of ANSI/ASHRAE/IESNA Standard 90.1-2004: Energy Standard for Buildings Except Low-Rise Residential Buildings and ANSI/ASHRAE Standard 62.1-2004: Ventilation for Acceptable Indoor Air Quality; and residential HVAC systems shall meet the applicable sizing and installation specifications of “Specification of Energy-Efficient Installation and Maintenance Practices for Residential HVAC Systems,” Consortium for Energy Efficiency, 2000;

- (B) Non-combustion energy conservation measures. Energy conservation measures implemented as part of projects or actions pursuant to subdivision (1)(B) through (G) of this subsection shall meet the prescriptive requirements, as applicable, in *Energy Benchmark for High Performance Buildings, Version 1.1*, New Buildings Institute, 2005 (herein referred to as EBHPB), or state building energy codes, whichever are more stringent. Energy conservation measures without specified performance criteria in the referenced EBHPB shall meet the requirements of Federal Energy Management Program (FEMP) Product Energy Efficiency Recommendations, issued pursuant to Executive Orders 13123 and 13221, or Energy Star criteria issued jointly by the U.S. Environmental Protection Agency and U.S. Department of Energy, whichever result in better energy performance;
- (C) Whole-building energy performance. New buildings or whole building retrofits that incorporate offsets projects or actions shall also meet the following requirements:
 - (i) Commercial buildings. Commercial buildings shall exceed the energy performance requirements of ANSI/ASHRAE/IESNA Standard 90.1-2004: Energy Standard for Buildings Except Low-Rise Residential Buildings by 30%, and
 - (ii) Residential buildings. Residential buildings shall exceed the energy performance requirements of the 2004 International Energy Conservation Code by 30%.
- (4) Fuel switching offset projects. Offset projects that retrofit existing combustion equipment to use a fuel with a lower carbon intensity must result in an improvement in the overall thermal efficiency of the combustion equipment. The project sponsor must demonstrate that the retrofit is not being implemented at the end of the useful life of the existing combustion equipment. Offset projects that meet these requirements are subject to the applicable requirements set forth in subdivision (3) of this subsection, but are not subject to the requirements set forth in subdivision (3)(A) of this subsection.
- (5) Emissions baseline determination. Emissions baseline shall be determined based on energy usage (MMBtu) by fuel type for each energy conservation measure, derived using

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historic fuel use data from the most recent calendar year for which data is available, multiplied by an emission factor and oxidation factor for each respective fuel set forth in Table 31a-4:

Table 31a-4

<u>Fuel</u>	<u>Emission Factor (lbs. CO₂/MMBtu)</u>	<u>Oxidation Factor</u>
Natural Gas	116.98	0.995
Propane	139.04	0.995
Distillate Fuel Oil	161.27	0.99
Kerosene	159.41	0.99

(A) Isolation of applicable energy conservation measure baseline. The applicant shall isolate the baseline energy usage of the application to be targeted by the energy conservation measure, in a manner consistent with the requirements set forth in subdivision (7) of this subsection.

(B) Annual baseline energy usage shall be determined as follows:

$$\text{Energy Usage (MMBtu)} = \text{BEU}_{\text{AECM}} \times A$$

Where:

BEU_{AECM} = Annual pre-installation baseline energy use by fuel type (MMBtu) attributable to the application(s) to be targeted by the energy conservation measure(s). If applicable building codes or equipment standards require that equipment or materials installed as part of the offset project meet certain minimum energy performance requirements, baseline energy usage for the application shall assume that equipment or materials are installed that meet such minimum requirements. For offset projects that replace existing combustion equipment, the assumed minimum energy performance required by applicable building codes or equipment standards shall be that which applies to new equipment that uses the same fuel type as the equipment being replaced. Baseline energy usage shall be determined in accordance with the applicable requirements set forth in subdivision (7) of this subsection.

A = Adjustments to account for differing conditions during the two time periods (pre-installation and post-installation), such as weather and building occupancy. Adjustments shall be determined in accordance with the applicable requirements in subdivision (7) of this subsection.

(C) Annual baseline emissions shall be determined as follows:

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$$\text{Emissions (lbs. CO}_2\text{)} = \sum_{i=1}^n \text{BEU}_i \times \text{EF}_i \times \text{OF}_i$$

Where:

BEU_i = Baseline energy usage for fuel type i (MMBtu) demonstrated pursuant to the requirements at subdivision (5)(B) of this subsection.

EF_i = Emissions factor (lbs. CO₂/MMBtu) for fuel type i listed at subdivision (5), Table 31a-4 of this subsection.

OF_i = Oxidation factor for fuel type i listed at subdivision (5), Table 31a-4 of this subsection.

(6) Calculating emissions reductions. Emissions reductions shall be determined based upon annual energy savings by fuel type (MMBtu) for each energy conservation measure, multiplied by the emission factor and oxidation factor for the respective fuel type in subdivision (5), Table 31a-4 of this subsection.

(A) Annual energy savings shall be determined as follows:

$$\text{Energy Savings (MMBtu)} = (\text{BEU}_{\text{AECM}} \times \text{A}) - (\text{PIEU}_{\text{ECM}} \times \text{A})$$

Where:

BEU_{AECM} = Pre-installation baseline energy use by fuel type (MMBtu) calculated pursuant to subdivision (5)(B) of this subsection.

PIEU_{ECM} = Post-installation energy use by fuel type (MMBtu) attributable to the energy conservation measure. Post-installation energy usage shall be determined in accordance with the applicable requirements in subdivision (7) of this subsection.

A = Adjustments to account for any differing conditions during the two time periods, pre-installation and post-installation, including but not limited to weather and building occupancy. Adjustments shall be determined in accordance with the applicable requirements at subdivision (7) of this subsection.

(B) Annual emissions reductions shall be determined as follows:

$$\text{Emissions Reduction (lbs. CO}_2\text{)} = \sum_{i=1}^n \text{ES}_i \times \text{EF}_i \times \text{OF}_i$$

Where:

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- ES_i = Energy savings for fuel type i (MMBtu) demonstrated pursuant to the requirements at subdivision (7) of this subsection.
- EF_i = Emissions factor (lbs. CO_2 /MMBtu) for fuel type i listed at subdivision (5), Table 31a-4 of this subsection.
- OF_i = Oxidation factor for fuel type i listed in subdivision (5), Table 31a-4 of this subsection.

(7) Monitoring and verification requirements. As part of the consistency application, the project sponsor shall provide a monitoring and verification plan certified by an independent certifier accredited pursuant to subsection (i) of this section. Monitoring and verification reports shall be certified by an independent certifier accredited pursuant to subsection (i) of this section. Independent verifiers must conduct a site audit when reviewing the first monitoring and verification report submitted by the project sponsor, except for offset projects that save less than 1,500 MMBtu per year. For offset projects that save less than 1,500 MMBtu per year, the project sponsor must provide the independent certifier with equipment specifications and copies of equipment invoices and other relevant offset project-related invoices. All offset project documentation, including the consistency application and monitoring and verification reports, shall be signed by a Professional Engineer, identified by license number. Monitoring and verification shall also meet the following requirements:

- (A) General energy measurement and verification requirements. Monitoring and verification of energy usage shall be demonstrated through a documented process consistent with the following protocols and procedures, as applicable:
- (i) For existing commercial buildings, determination of baseline energy usage shall be consistent with the International Performance Measurement & Verification Protocol, Volume I: Concepts and Options for Determining Energy and Water Savings (IPMVP), “Option B. Retrofit Isolation” and “Option D. Calibrated Simulation.” If an offset project involves only energy conservation measures implemented as part of a CO_2 emissions offset project, a process consistent with IPMVP “Option C. Whole Facility” may be used, as applicable. Application of the IPMVP general guidance shall be consistent with the applicable detailed specifications in ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings.
 - (ii) For new commercial buildings, determination of baseline energy usage shall be consistent with the International Performance Measurement & Verification Protocol, Volume III: Concepts and Options for Determining Energy Savings in New Construction (IPMVP), “Option D. Calibrated Simulation.” Application of the IPMVP general guidance shall be consistent with the applicable detailed specifications in ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings.

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- (iii) For existing and new residential buildings, determination of baseline energy usage shall be consistent with the requirements of the RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).
- (B) Isolation of applicable energy conservation measure. In calculating both baseline energy usage and energy savings, the applicant shall isolate the impact of each eligible energy conservation measure (ECM), either through direct metering or energy simulation modeling. For offset projects with multiple ECMs, and where individual ECMs can affect the performance of others, the sum of energy savings due to individual ECMs shall be adjusted to account for the interaction of ECMs. For commercial buildings, this process shall be consistent with the requirements of ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2004: Energy Standard for Buildings Except Low-Rise Residential Buildings. For residential buildings, this process shall be consistent with the requirements of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards). Reductions in energy usage due to the energy conservation measure shall be based upon actual energy usage data. Energy simulation modeling shall only be used to determine the relative percentage contribution to total fuel usage (for each respective fuel type) of the application targeted by the energy conservation measure.
- (C) **Calculation of energy savings.** Annual energy savings are to be determined based on the following:

$$\text{Energy Savings (MMBtu)} = (\text{BEU}_{\text{AECM}} \times A) - (\text{PIEU}_{\text{ECM}} \times A)$$

Where:

BEU_{AECM} = Annual pre-installation baseline energy use by fuel type (MMBtu) attributable to the application(s) to be targeted by the energy conservation measure(s), based upon annual fuel usage data for the most recent calendar year for which data is available. For new buildings, baseline energy use for a reference building equivalent in basic configuration, orientation, and location to the building in which the eligible energy conservation measure(s) is implemented shall be determined according to ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings and ANSI/ASHRAE/IESNA Standard 90.1-2004, Section 11 and Appendix G. Where energy simulation modeling is used to evaluate an existing building, modeling shall be conducted in accordance with ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings, and

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ANSI/ASHRAE/IESNA Standard 90.1-2004, Section 11 and Appendix G. For existing and new residential buildings, energy simulation modeling shall be conducted in accordance with the requirements of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

$PIEU_{ECM} =$ Annual post-installation energy use by fuel type (MMBtu) attributable to the energy conservation measure, to be verified based on annual energy use after installation of the energy conservation measure(s), consistent with the requirements of ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings. Where energy simulation modeling is used to evaluate a new or existing building, modeling shall be conducted in accordance with ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2004, Section 11 and Appendix G. For existing and new residential buildings, energy simulation modeling shall be consistent with the requirements of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

A = Adjustments to account for any differing conditions during the two time periods (pre-installation and post-installation), such as weather (weather normalized energy usage based on heating and cooling degree days), building occupancy, and changes in building use or function. For commercial buildings, adjustments shall be consistent with the specifications of ASHRAE Guideline 14-2002, Measurement of Energy and Demand Savings, and ANSI/ASHRAE/IESNA Standard 90.1-2004, Section 11 and Appendix G. For residential buildings, adjustments shall be consistent with the specifications of RESNET National Home Energy Rating Technical Guidelines, 2006 (Chapter 3 and Appendix A of 2006 Mortgage Industry National Home Energy Rating System Standards).

- (D) Provision for sampling of multiple like offset projects in residential buildings. Offset projects that implement similar measures in multiple residential buildings may employ representative sampling of buildings to determine aggregate baseline energy usage and energy savings. Sampling protocols shall be approved by the commissioner or their designee. Any sampling plan shall be certified by an independent certifier, accredited pursuant to subsection (i) of this section.

DRAFT Do not cite or quote**(h) Avoided Methane (CH₄) Emissions from Agricultural Manure Management Operations**

(1) Eligibility. Offset projects that capture and destroy methane from animal manure using anaerobic digesters may qualify for the award of CO₂ emissions offset allowances under this Subpart, provided they meet the requirements of this subdivision.

- (A) CO₂ emissions offset allowances may be awarded for the destruction of that portion of methane generated by the anaerobic digester that would have been generated in the absence of the offset project through the anaerobic storage of manure, or organic food wastes that would have been stored under anaerobic conditions in the absence of the offset project.
- (B) Eligible offset projects shall employ only manure-based anaerobic digester systems using livestock manure as the majority of digester feedstock, defined as 50% or more of the mass input into the digester on an annual basis.
- (C) The provisions of subsection (c)(4)(B) and (C) of this section shall not apply to agricultural manure methane offset projects provided either:
 - (i) The offset project is located in a state that has a market penetration for anaerobic digester projects of 5% or less. The market penetration determination shall utilize the most recent market data available at the time of submission of the consistency application and shall be determined as follows:

$$MP (\%) = MG_{AD} / MG_{STATE}$$

Where:

MG_{AD} = Average annual manure generation for the number of dairy cows and swine serving all anaerobic digester projects in the applicable U.S. state at the time of submission of a consistency application pursuant to section XX-10.4.

MG_{STATE} = Average annual manure production of all dairy cows and swine in that U.S. state at the time of submission of a consistency application pursuant to subsection (j)(10) of this section.

or

- (ii) The project is located at a farm with 4,000 or less head of dairy cows, or a farm with equivalent animal units, assuming an average live weight for dairy cows (lbs./cow) of 1,400 lbs., or, if the project is a regional-type digester, total annual manure input to the digester is designed to be less than the average annual manure produced by a farm with 4,000 or less

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head of dairy cows, or a farm with equivalent animal units, assuming an average live weight for dairy cows (lbs./cow) of 1,400 lbs.

(2) Offset project description. The project sponsor shall provide a detailed narrative of the offset project, including supporting materials as appropriate. The offset project narrative shall include the following:

- (A) Owner and operator of the offset project;
- (B) Location and specifications of the facility where the offset project will occur;
- (C) Owner and operator of the facility where the offset project will occur;
- (D) Specifications of the equipment to be installed and a technical schematic of the offset project; and
- (E) Location and specifications of the facilities from which anaerobic digester influent will be received, if different from the facility where the offset project will occur.

(3) Emissions baseline determination. The emissions baseline shall represent the potential emissions of the CH₄ that would have been produced in a baseline scenario under uncontrolled anaerobic storage conditions and released directly to the atmosphere in the absence of the offset project.

- (A) Baseline CH₄ emissions shall be calculated as follows:

$$\text{CO}_2\text{e (tons)} = (\text{V}_m \times \text{M}) / 2000 \times \text{GWP}$$

Where:

CO₂e = Potential CO₂e emissions due to calculated CH₄ production under site-specific anaerobic storage and weather conditions

V_m = Volume of CH₄ produced each month from degradation of volatile solids in a baseline uncontrolled anaerobic storage scenario under site-specific storage and weather conditions for the facility at which the manure is generated (ft³)

M = Mass of CH₄ per cubic foot (0.04246 lb/ft³ default value) at X temperature and pressure

GWP = Global warming potential of CH₄ (23)

- (B) The estimated amount of volatile solids degraded each month under the uncontrolled anaerobic storage baseline scenario (kg) shall be calculated as follows:

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$$VS_{deg} = VS_{avail} * f$$

Where:

VS = volatile solids as determined from the equation:

$$VS = M_m \times TS\% \times VS\%$$

where:

M_m = mass of manure produced per month (kg)

$TS\%$ = Concentration (percent) of total solids in manure as determined through EPA 160.3 testing method

$VS\%$ = Concentration (percent) of volatile solids in total solids as determined through EPA 160.4 testing method (USEPA Method Number 160.4, Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/4-79/020))

VS_{avail} = Volatile solids available for degradation in manure storage each month as determined from equation:

$$VS_{avail} = VS_p + \frac{1}{2} VS_{in} - VS_{out}$$

where:

VS_p = Volatile solids present in manure storage at beginning of month (left over from previous month) (kg)

VS_{in} = Volatile solids added to manure storage during the course of the month (kg). The factor of $\frac{1}{2}$ is multiplied by this number to represent the average mass of volatile solids available for degradation for the entire duration of the month.

VS_{out} = Volatile solids removed from the manure storage for land application or export (assumed value based on standard farm practice)

f = Van't Hoff-Arrhenius factor for the specific month as determined using the equation below. Using a base temperature of 30° C, the equation is as follows:

$$f = \exp[E * (T_2 - T_1)] / [(GC * T_1 * T_2)]$$

Where:

f = conversion efficiency of VS to CH₄ per month

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$E =$ Activation energy constant (15,175 cal/mol)

$T_2 =$ Average monthly ambient temperature for farm (converted from ° Celsius to ° Kelvin) as determined from the nearest National Weather Service certified weather station (if reported temperature ° C > 5° C; if reported temperature ° C < 5° C, then $F = 0.104$)

$T_1 =$ 303.16 (30° C converted to °K)

$GC =$ ideal gas constant (1.987 cal/K mol)

(C) The volume of CH₄ produced (ft³) from degradation of volatile solids shall be calculated as follows:

$V_m = (VS_{deg} \times B_o) \times 35.3147$

Where:

$V_m =$ Volume of CH₄ (ft³)

$VS_{deg} =$ Volatile solids degraded (kg)

$B_o =$ Manure type-specific maximum methane generation constant (m³ CH₄/kg VS degraded). For dairy cow manure, $B_o = 0.24$ m³ CH₄/kg VS degraded. The methane generation constant for other types of manure shall be those cited at U.S. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2001*, Annex M, Table M-2 (U.S. EPA, 2002), unless the project sponsor proposes an alternate methane generation constant. If the project sponsor proposes to use a methane generation constant other than the one found in the above-cited reference, the project sponsor must provide justification and documentation to the commissioner or their designee.

(4) Calculating emissions reductions. Emissions reductions shall be determined based on the potential emissions (in tons of CO_{2e}) of the CH₄ that would have been produced in the absence of the offset project under a baseline scenario that represents uncontrolled anaerobic storage conditions, as calculated pursuant to subdivision (3) of this subsection, and released directly to the atmosphere. Emissions reductions may not exceed the potential emissions of the digester, as represented by the annual volume of CH₄ produced by the anaerobic digester, as monitored pursuant to subdivision (5) of this subsection. If the project is a regional-type digester, CO₂ emissions due to transportation from the site where the manure was generated to the anaerobic digester shall be subtracted from the emissions reduction calculated pursuant to subdivision (3) of this subsection. Transportation related CO₂ emissions shall be determined through one of the following methods:

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- (A) Documentation of transportation fuel use for all shipments of manure to the anaerobic digester during each reporting year and a log of transport miles for each shipment. CO₂ emissions shall be determined through the application of an emissions factor for the fuel type used. If this option is chosen, the following emission factors shall be applied as appropriate:
- (i) Diesel fuel: 22.912 lbs. CO₂/gallon,
 - (ii) Gasoline: 19.878 lbs. CO₂/gallon, or
 - (iii) Other fuel: submitted emission factor approved by the commissioner or the commissioner's designee.
- (B) Documentation of total tons of manure transported from off-site for input into the anaerobic digester during each reporting year, as monitored pursuant to subdivision (5)(A) of this subsection, and a log of transport miles for each shipment. CO₂ emissions shall be determined through the application of a ton-mile transport emission factor for the fuel type used. If this option is chosen, the following emission factors shall be applied as appropriate for each ton of manure delivered, and multiplied by the number of miles transported:
- (i) Diesel fuel: 0.131 lbs. CO₂ per ton-mile,
 - (ii) Gasoline: 0.133 lbs. CO₂ per ton-mile, or
 - (iii) Other fuel: submitted emission factor approved by the commissioner or the commissioner's designee.

(5) Monitoring and verification requirements. Offset projects shall employ a system that provides metering of biogas volumetric flow rate and determination of CH₄ concentration. Monitoring and verification reports shall include monthly biogas volumetric flow rate and CH₄ concentration determination. Monitoring and verification shall also meet the following requirements:

- (A) If the offset project is a regional-type digester, manure from each distinct supply source of manure to the anaerobic digester shall be sampled monthly to determine the amount of volatile solids present. Any emissions reduction will be calculated according to mass of manure (kg) being digested and percentage of volatile solids present before digestion, consistent with the requirements at subdivisions (3) and (5)(A) of this subsection, and apportioned accordingly. The project sponsor shall provide supporting material and receipts tracking the monthly receipt of manure (kg) used to supply the anaerobic digester from each manure supplier.

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- (B) If the offset project includes the digestion of organic food wastes eligible pursuant to subdivision (1)(A) of this subsection, organic food wastes shall be sampled monthly to determine the amount of volatile solids present before digestion, consistent with the requirements at subdivision (3) of this subsection, and apportioned accordingly. If the offset project is a community type digester, the offset project sponsor shall provide supporting material and receipts tracking the monthly receipt of organic food waste used to supply the anaerobic digester from each organic food waste supplier.
- (C) The project sponsor shall submit a monitoring and verification plan as part of the consistency application that includes a quality assurance and quality control program associated with equipment used to determine biogas volumetric flow rate and CH₄ composition. The monitoring and verification plan shall be specified in accordance with the monitoring requirements listed in Table 31a-5, Input Monitoring Requirements, as applicable. The monitoring and verification plan shall also include provisions for ensuring that measuring and monitoring equipment is maintained, operated, and calibrated based on manufacturer's recommendations, as well as provisions for the retention of maintenance records for audit purposes. The monitoring and verification plan shall be certified by an independent certifier accredited pursuant to subsection (i) of this section.
- (D) The project sponsor shall quarterly verify biogas CH₄ composition through gas sampling and third party laboratory analysis using applicable U.S. EPA test methods.

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**Table 31a-5
Input Monitoring Requirements**

Input Parameter	Measurement Unit	Frequency of Sampling	Sampling Method(s)
Influent flow (mass) into the digester	Kilograms (kg) per month (wet weight)	Monthly total into the digester	a) Average herd population and American Society of Agricultural and Biological Engineers (ASABE) standard (ASAE D384.2, March 2005) b) Digester influent pump flow c) Recorded weight
Influent total solids concentration (TS)	Percent (of sample)	Monthly, depending upon recorded variations	U.S. EPA Method Number 160.3
Influent volatile solids (VS) content of manure	Percent (of TS)	Monthly, depending upon recorded variations	USEPA Method Number 160.4, Methods for the Chemical Analysis of Water and Wastes (MCAWW) (EPA/600/4-79/020)
Average monthly ambient temperature	Temperature °C	Monthly (based on farm averages)	Closest National Weather Service-certified weather station

(i) Accreditation of Independent Certifiers

(1) Standards for Accreditation. Independent Certifiers may be accredited by the commissioner or the commissioner's designee in accordance with the requirements of this subsection. To be considered for accreditation, a person must submit an application to the commissioner. The application shall include sufficient information to demonstrate that the applicant meets all accreditation standards:

- (A) Persons selected to perform certification activities shall:
- (i) Possess at least two years experience in estimating and evaluating greenhouse gas emissions;
 - (ii) Demonstrate knowledge of engineering and accounting principles sufficient to quantify greenhouse gas emissions, develop and evaluate air

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emissions inventories and audit the work product of others engaged in similar activities;

- (iii) Demonstrate knowledge of auditing and accounting principles and information systems sufficient to carry out this section;
 - (iv) Demonstrate knowledge of information management systems;
 - (v) Demonstrate knowledge of the requirements of this section and section 22a-174-31 of the Regulations of Connecticut State Agencies;
 - (vi) Demonstrate that no direct or indirect financial relationship, beyond a contract for provision of verification services, exists with any offset project developer or sponsor;
 - (vii) Certify that such person holds a minimum of one million U.S. dollars of professional liability insurance;
 - (viii) Certify the truthfulness and accuracy of all documents, reports and conclusions submitted to the commissioner or the commissioner's designee;
 - (ix) Demonstrate that adequate protocols are established to avoid conflicts of interest with regard to an offset project, offset project developer, or project sponsor, or any other party with a direct or indirect financial interest in an offset project that is seeking or has been granted an approval under subsection (c) of this section; and
 - (x) Maintain records for a period of 10 years from the certification report which will be made available for audit by either the commissioner or its agent.
- (B) Applicants shall possess such other qualifications necessary to provide competent certification services as required for specific CO₂ emissions offset project types set forth in this section.

(2) Training workshop. The commissioner may require prospective independent certifiers to successfully complete a training workshop or workshops developed by the commissioner or the commissioner's designee.

(3) Conflict of interest requirements.

- (A) Prospective independent certifiers. Prior to accreditation, an applicant shall disclose all relevant information to the commissioner or the commissioner's designee to allow for a comprehensive conflict of interest assessment. The applicant shall disclose information concerning its ownership, past and current

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clients, related entities, as well as any other facts or circumstances that have the potential to create a conflict of interest.

- (B) Accredited independent certifiers.
 - (i) Prior to the commencement of any work related to certification of a specific offset project or projects, an independent certifier shall submit additional information to the commissioner to permit a conflict of interest assessment relative to the specific offset project or projects.
 - (ii) Independent certifiers shall have an ongoing obligation to disclose any facts or circumstances that may give rise to a conflict of interest with respect to an ongoing offset project or current project sponsor.

(4) Certification Statement. The independent certifier shall issue a verification report to the project sponsor upon completion of the certification. The certification report shall:

- (A) Be addressed to the project sponsor and describe the level of assurance of the certification;
- (B) Describe the objectives, scope and criteria of the certification;
- (C) Be accompanied by the project sponsor's **assertion**; and
- (D) Include the certifier's conclusion on the **assertion** including the qualifications or limitations. **- VERIFY Where this language originated**

(5) Appeals, complaints and audits. The commissioner or the commissioner's designee may develop processes for handling appeals and complaints, and shall maintain the authority to audit the independent certifiers, including on-site audits during certifications. Independent certifiers or project sponsors may be audited on either's premises.

(6) Independent certifiers accredited in participating states. Independent certifiers that have been accredited in other participating states shall be deemed accredited in Connecticut.

(7) Rejection of verification reports. The commissioner or the commissioner's designee may reject a verification report and certification statement from an accredited verifier, submitted as part of a consistency application required pursuant to subsection (c) of this section or submitted as part of a monitoring and verification report submitted pursuant to subsection (j) of this section, if the commissioner or the commissioner's designee determines that the accredited verifier has a conflict of interest related to the offset project, offset project developer, or project sponsor.

(8) Revocation of accreditation. The commissioner or the commissioner's designee may revoke the accreditation of a verifier at any time given cause, for any of the following:

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- (A) Failure to fully disclose any issues that may lead to a conflict of interest situation with respect to an offset project, offset project developer, or project sponsor;
- (B) The verifier is no longer qualified due to changes in staffing or other criteria;
- (C) Negligence or neglect of responsibilities pursuant to the requirements of this Subpart; and
- (D) Intentional misrepresentation of data or other intentional fraud.

(j) Award of CO₂ Offset Allowances

(1) Quantities of CO₂ offset allowances awarded for CO₂ emissions offset projects. Following the issuance of a consistency determination under subsection (c)(12) of this section and the approval of a monitoring and verification report under the provisions of subdivision (5) of this subsection, the commissioner or their designee will award one CO₂ offset allowance for each ton of demonstrated reduction in CO₂ or CO₂ equivalent emissions or sequestration of CO₂.

(2) CO₂ emissions credit retirement. If a project sponsor received a consistency determination pursuant to subsection (c)(12) of this section, one CO₂ offset allowance will be awarded for each ton of reduction of CO₂ or CO₂ equivalent or sequestration of CO₂, represented by the relevant credits or allowances retired. If a credit or allowance is represented in metric tons, 1.1023 tons will be awarded for every metric ton, provided that total CO₂ offset allowances awarded shall be rounded down to the nearest whole ton.

(3) Place for filing monitoring and verification reports. The monitoring and verification report must be filed with the same participating state that issued the consistency determination for the offset project pursuant to subsection (c)(12) of this section.

(4) Deadlines for submittal of monitoring and verification reports.

- (A) For CO₂ emissions offset projects undertaken prior to January 1, 2009, the project sponsor must submit the monitoring and verification report covering the pre-2009 period by June 30, 2009.
- (B) For CO₂ emissions offset projects undertaken on or after January 1, 2009, the monitoring and verification report must be submitted within 6 months following the completion of the last calendar year during which the offset project achieved CO₂ equivalent reductions or sequestration of CO₂ for which the project sponsor seeks the award of CO₂ emissions offset allowances.

(5) Contents of monitoring and verification reports. For an offset project, the monitoring and verification report shall include the following information:

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- (A) The project's sponsor's name, address, e-mail address, telephone number, facsimile transmission number, and account number;
- (B) The CO₂ emissions reduction or CO₂ sequestration determination as required by the relevant provisions of this section, including a demonstration that the project sponsor complied with the required quantification, monitoring, and verification procedures under this section, as well as those outlined in the consistency application approved pursuant to subsection (c)(12) of this section;
- (C) The following statement signed by the offset project sponsor:
- “The undersigned project sponsor hereby confirms and attests that the offset project upon which this monitoring and verification report is based is in full compliance with all of the requirements of Section 22a-174-31a of the Regulations of Connecticut State Agencies. The project sponsor holds the legal rights to the offset project, or has been granted the right to act on behalf of a party that holds the legal rights to the offset project. I understand that eligibility for the award of CO₂ emissions offset allowances under Section 22a-174-31a of the Regulations of Connecticut State Agencies is contingent on meeting the requirements of this section. I authorize the Connecticut Department of Environmental Protection or its agent to audit this offset project for purposes of verifying that the offset project, including the monitoring and verification plan, has been implemented as described in the consistency application that was the subject of a consistency determination by the Connecticut Department of Environmental Protection. I understand that this right to audit shall include the right to enter the physical location of the offset project. I submit to the legal jurisdiction of the State of Connecticut.”;
- (D) A certification signed by the offset project sponsor certifying that all offset projects for which the sponsor has received offset allowances under either this section or any similar provisions in the rules of other participating states that are under the sponsor's ownership or control, or under the ownership or control of any entity which controls, is controlled by, or has common control with the sponsor, are in compliance with all applicable requirements of the CO₂ Budget Trading Program in all participating states;
- (E) A verification report and certification statement signed by an independent verifier accredited pursuant to subsection (i) of this section documenting that the independent verifier has reviewed the monitoring and verification report and evaluated the following in relation to the applicable requirements of this section, and any applicable guidance issued by the commissioner or the commissioner's designee. Such verification report and certification statement shall also state:

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- (i) The adequacy and validity of information supplied by the project sponsor to determine CO₂ emissions reductions or CO₂ sequestration pursuant to the applicable requirements in this section,
 - (ii) The adequacy and consistency of methods used to quantify, monitor, and verify CO₂ emissions reductions and CO₂ sequestration in accordance with the applicable requirements of this section and as outlined in the consistency application approved pursuant to subsection (c)(12) of this section, and
 - (iii) Such other evaluations and verification reviews as may be required by the commissioner or the commissioner's designee to determine the adequacy and validity of information supplied by the project sponsor to demonstrate that the offset project meets the applicable eligibility requirements of this section;
- (F) Disclosure of any voluntary or mandatory programs, other than the CO₂ Budget Trading Program, to which greenhouse gas emissions data related to the offset project has been, or will be reported; and
- (H) For offset projects located in a state or United States jurisdiction that is not a participating state, a demonstration that the project sponsor has complied with all requirements of the cooperating regulatory agency in the state or United States jurisdiction where the offset project is located.
- (6) Commissioner action on monitoring and verification reports. The commissioner or the commissioner's designee will approve or deny, with or without conditions, a complete monitoring and verification report within 45 days following receipt of a complete report.

Statement of Purpose:

To adopt a new regulation to implement the provisions of the Regional Greenhouse Gas Initiative (RGGI) necessary to provide for the creation and use of carbon dioxide offset credits through five specific activities: landfill methane capture and destruction; avoided sulfur hexafluoride emissions; sequestration due to afforestation; end-use energy efficiency; and avoided methane.