

Background Information and Technical Support Document for

Proposed Amendments to

310 CMR 7.71

Mandatory Reporting of Greenhouse Gas Emissions to a Regional Registry

Regulatory Authority:

M.G.L. c. 111, Sections 142A through 142E

March 26, 2009

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## I. INTRODUCTION

Overwhelming scientific evidence suggests that a changing climate poses a serious threat to environmental resources as well as public health because it threatens the region's air quality, water quality, marine and freshwater fisheries, salt and freshwater wetlands, surface and subsurface drinking water supplies, river and stream impoundment infrastructure, forest species, and wildlife habitats.<sup>1</sup>

Chapter 298 of the Acts of 2008, the Massachusetts Global Warming Solutions Act (GWSA), was passed by the legislature and signed into law by Governor Patrick in August 2008 to begin to address the challenges of climate change. The Climate Protection and Green Economy Act (CPGEA)<sup>2</sup> is contained within the GWSA and requires the creation of enforceable state limits on greenhouse gas (GHG) emissions for the years 2020, 2030, 2040, and 2050. These limits are designed to address the Commonwealth's contribution to global climate change and to stimulate the green economy in Massachusetts.

One major provision of the Climate Protection and Green Economy Act requires the Department of Environmental Protection (MassDEP or Department) to "adopt regulations to require the reporting and verification of statewide GHG emissions."<sup>3</sup> MassDEP adopted 310 CMR 7.71: *Mandatory Reporting of Greenhouse Gas Emissions to a Regional Registry* on December 29, 2008, to comply with the requirements of the CPGEA. The statute explicitly states that the regulations require reporting of greenhouse gas emissions by facilities that: 1) emit in excess of 5,000 tons of greenhouse gases in carbon dioxide equivalents<sup>4</sup> (CO<sub>2</sub>e) per year, and 2) report any emissions pursuant to Title V of the Clean Air Act. Creation of an accurate inventory of statewide GHG emissions will enable effective planning, implementation and tracking of strategies to address the Commonwealth's contribution to climate change.

MassDEP is now proposing to amend 310 CMR 7.71 in order to address critical GHG reporting requirements that were not addressed in the 12/29/08 regulation. These requirements include the reporting of all GHG emissions associated with electricity sales in the Commonwealth by retail sellers, providing for voluntary reporting of GHG emissions, and requiring verification of reported GHG emissions.

### Process Overview

On December 29, 2008, 310 CMR 7.71: *Mandatory Reporting of Greenhouse Gas Emissions to a Regional Registry* was promulgated as an emergency regulation to meet the statutory deadline of January 1, 2009. Consistent with state law for promulgating emergency regulations, the public process occurred within 90 days of promulgation with a public hearing held on February 11, 2009 and closure of the public comment period on February 23, 2009. The public process for the emergency regulation will be completed by March 20, 2009, when the emergency regulations will be promulgated as final.

Several of the requirements of the CPGEA were expected to generate significant public interest and thus were not incorporated into the emergency regulation. These requirements relate to verification, voluntary reporting, and reporting of emissions by retail sellers of electricity. In order to incorporate these requirements, amendments to 310 CMR 7.71 are now being proposed with a separate public process,

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<sup>1</sup> <http://www.ipcc.ch/>

<sup>2</sup> The Climate Protection and Green Economy Act (CPGEA) is codified at MGL 21N. It can be found at: <http://www.mass.gov/legis/laws/seslaw08/sl080298.htm>

<sup>3</sup> See M.G.L. Chapter 21N, Section 2(a)

<sup>4</sup> Carbon dioxide equivalents (CO<sub>2</sub>e) means that for gases other than carbon dioxide, the number of tons of emissions is adjusted to account for differing global warming potentials.

pursuant to MGL Chapter 30A. This process will provide an opportunity to comment upon the proposed amendments and the entire content of 310 CMR 7.71, including text from the emergency rulemaking.

## **II. DESCRIPTION OF PROPOSED 310 CMR 7.71 AMENDMENTS: REPORTING OF GREENHOUSE GAS EMISSIONS**

### **Applicability**

310 CMR 7.71 outlines the mandatory reporting requirements for the following categories of facilities, as directed by the CPGEA:

#### *Title V Facilities (310 CMR 7:00: Appendix C)*

Facilities which are subject to 310 CMR 7.00: Appendix C for compliance with Title V of the federal Clean Air Act shall report as follows: Appendix C facilities with 5,000 tons per year (tpy) or less CO<sub>2</sub>e GHG emissions shall report “direct stack emissions”<sup>5</sup> which include emissions from stacks, processes, and vents, and fugitive emissions; Appendix C facilities with more than 5,000 tpy CO<sub>2</sub>e GHG emissions shall report all “direct emissions”, including those listed above and emissions from motor vehicles. A facility which has a restricted emission status, but has greater than 5,000 tpy of CO<sub>2</sub>e GHG emissions, is required to report under 310 CMR 7.71. These requirements are applicable for year beginning with 2010. For emissions occurring in 2009, the applicability and reporting requirements apply only to carbon dioxide emissions from fossil-fuel combustion.

#### *Other Facilities with GHG Emissions > 5,000 tpy*

All other stationary emission facilities which emit more than 5,000 tpy of CO<sub>2</sub>e GHGs shall report all “direct emissions”<sup>6</sup>, including fugitive emissions and emissions from stacks, processes, vents, and motor vehicles, as defined below. MassDEP is developing a simplified estimation form to aid facilities in determining their applicability status. The 5,000 tpy of CO<sub>2</sub>e GHGs threshold is applicable for years beginning with 2010. For emissions occurring in 2009, the applicability and reporting requirements apply only to carbon dioxide emissions from fossil-fuel combustion.

#### *Ongoing Reporting*

Facilities reporting air emissions data pursuant to 310 CMR 7.00: Appendix C and electricity sellers are subject regardless of their GHG emissions level. In addition, once any other source has reported under 310 CMR 7.71 solely because it exceeded the 5,000 tons per year threshold, it must continue to report its GHG emissions, i.e. “once in, always in” will apply. However, the Department wants to balance the need to collect long-term data to discern GHG emissions trends with an appropriate reporting burden. Therefore, MassDEP is seeking comment on criteria which may allow a previously subject source to become exempt. For example, if a non-Appendix C facility has more than five years of reported GHG emissions less than 5,000 tons per year, or if a facility has reported less than 1,000 tons per year of GHG emissions for three years, should this facility be required to continue reporting? Appendix C sources are not eligible for exemption because they are specifically listed in CPGEA as reporters, regardless of their GHG emission levels.

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<sup>5</sup> See M.G.L. Chapter 21N, Section 2(a)(2)

<sup>6</sup> See M.G.L. Chapter 21N, Section 2(a)(3)

## *Examples of Types of Sources Covered & Examples Generating 5,000 tpy CO<sub>2</sub>e Emissions*

310 CMR 7.71 sources may include, but are not limited to, the following types:

- electric generating units,
- emergency generators,
- industrial, commercial, and institutional boilers,
- wastewater treatment plants,
- municipal waste combustors,
- landfills,
- manufacturers,
- facilities using high global warming potential gases ,
- facilities using combined heat and power, and
- facilities burning biomass.

This list is not comprehensive and source categories which are not listed here, but trigger the thresholds, are subject to mandatory reporting.

Examples of fuel usage which would emit approximately 5,000 tpy of CO<sub>2</sub>e GHGs include:

- Combustion of 83,100,000 cubic feet of natural gas
- Combustion of 442,000 gallons of No. 2 fuel oil
- Operation of a 30% efficient natural gas-fired 1.0 MW electric generator run at 85% capacity

### **Selected Definitions in 310 CMR 7.71**

This section of the technical support document reviews several definitions and their origins. It also lists definitions which MassDEP proposes to incorporate into 310 CMR 7.71.

*Direct emissions* vs. *Direct stack emissions*: The term “Direct emissions” is defined in the CPGEA as “emissions from sources that are owned or operated, in whole or in part, by an entity or facility including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company owned or leased motor vehicles.”<sup>7</sup> MassDEP has clarified this definition in 310 CMR 7.71 to include fugitive and all process emissions. The intent of the CPGEA to include fugitive emissions is clear by the Act’s inclusion of the GHG sulfur hexafluoride (SF<sub>6</sub>), which is released largely as fugitive emissions. The difference between *Direct emissions* and *Direct stack emissions* is the inclusion of motor vehicle emissions in *Direct emissions* only. Thus, stack, process, vent, and fugitive emissions are included in both *Direct emissions* and *Direct stack emissions*.

*Facility* as defined in 310 CMR 7.71 means a building, structure or installation located on contiguous or adjacent properties of an entity. This definition is taken verbatim from the CPGEA<sup>7</sup> and is different from the definition in 310 CMR 7.00. In 310 CMR 7.00, FACILITY means any installation or establishment and associated equipment, located on the same, adjacent or contiguous property, capable of emissions; and, for the purpose of 310 CMR 7.12 (source registration), it means any structure, installation, building, equipment, or ship. As a practical matter, MassDEP considers the definitions of “facility” in 310 CMR 7.71 and 310 CMR 7.00 to be synonymous for the purposes of implementation.

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<sup>7</sup> See M.G.L. Chapter 21N, Section 1

*Motor vehicle* as defined in 310 CMR 7.71 means any equipment or mechanical device propelled primarily on land by power other than muscular power that is primarily designed or intended for operation on public roadways. *Motor vehicle* is also defined in 310 CMR 7.00: *Motor vehicle* means any equipment or mechanical device propelled primarily on land by power other than muscular power but does not mean railroad and railway engines and railway cars, vehicles operated by the system known as trolley motor or trackless trolley, or devices used for domestic purposes.

The Department believes that the definitions should be consistent; therefore, MassDEP is proposing to amend 310 CMR 7.71 to adopt the definition already in 310 CMR 7.00. The effect of this proposed change in the definition of motor vehicle is that emissions from non-road vehicles will need to be reported. This change is proposed in 310 CMR 7.71 (5)(n) and will become effective beginning with 2010 emissions reported in 2011. For 2009 only, the emissions from non-road vehicles will not be required to be reported. The voluntary inclusion of additional data elements at 310 CMR 7.71 (8)(b) will allow facilities who wish to report emissions from non-road vehicles in their 2009 reports to do so. Further clarification regarding the reporting of GHG emissions from motor vehicles is provided below and will be included in guidance MassDEP plans to issue before the end of 2009.

MassDEP proposes to add definitions to 310 CMR 7.71(2) for *Emissions source* and *Stationary emission source*.

### **Reporting to the Regional Registry**

The CPGEA charges MassDEP to “establish a regional GHG registry and reporting system for GHG emission sources; provided, however, that in establishing the GHG registry and reporting system, the department may collaborate with other states or a regional consortium.”<sup>8</sup> Massachusetts participated in the development of the Eastern Climate Registry (ECR) and The Climate Registry (TCR). TCR is a multistate organization that has devised a common standard for reporting GHG emissions and which evolved from collaboration between the ECR and the California Climate Action Registry. MassDEP seeks comments and suggestions on the use of specific registries. The Department has initiated a competitive procurement process to select the regional registry which will be used to support 310 CMR 7.71. Please see [www.mass.gov/compass](http://www.mass.gov/compass) for further information.

The CPGEA requires mandatory reporting of GHG emissions to a regional registry. In addition to implementing this requirement, MassDEP notes that 310 CMR 7.71 will provide the following benefits to Massachusetts and its GHG emissions sources:

- Establish a GHG emissions inventory for future climate strategies planning
- Establish an emissions baseline and document early action
- Encourage energy efficiency by documenting fuel use
- Provide information to stakeholders on GHG emissions across the Commonwealth
- Promote readiness for possible new federal reporting regulations
- Reduce the long-term costs of addressing climate change

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<sup>8</sup> See M.G.L. Chapter 21N, Section 2(a)(1)

## Reporting Methodology

Facilities subject to 310 CMR 7.71 are required to report electronically to the regional registry in accordance with all applicable requirements of the General Reporting Protocol issued by TCR. The reporting deadline is April 15 for the preceding year's GHG emissions; this date was selected to facilitate reporting by facilities required to report emissions pursuant to 310 CMR 7.12 Source Registration. MassDEP is proposing to amend 310 CMR 7.71 to clarify certain reporting requirements pertaining to: reporting biomass emissions; the use of data tiers; and simplified reporting methods for aggregated small emission units. MassDEP is also proposing language to clarify how emissions from a motor vehicle used to support multiple facilities should be assigned. Each of these proposed amendments is described below and comments are requested.

### *The Climate Registry's General Reporting Protocol*

TCR has developed technical guidelines for quantifying and reporting greenhouse gas emissions, termed the General Reporting Protocol Version 1.1. MassDEP is requiring use of the General Reporting Protocol to calculate and report GHG emissions.<sup>9</sup> MassDEP's goals are to: 1) use best practices for credible and consistent GHG emissions reporting, 2) provide an opportunity for reporters to establish an emissions baseline and document early action, and 3) promote full public disclosure of GHG emissions. These criteria are also important for establishing consistent national climate policies. MassDEP is using TCR's General Reporting Protocol because it is a generally accepted means among government agencies and facilities of calculating GHG emissions. The Western Climate Initiative, a consortium of seven western states and four Canadian provinces, has signaled its intent to use TCR and its protocols, and the US Environmental Protection Agency has a specific mandate to consider TCR's system in developing a reporting federal system. Several Canadian provinces and Mexican states have also joined TCR. Thus, TCR's General Reporting Protocol provides a consistent means of calculating GHG emissions in North America.

The General Reporting Protocol is available at: <http://www.theclimateregistry.org/downloads/GRP.pdf>. Chapter 12 describes how to calculate direct emissions from stationary sources and can be used to determine applicability of this regulation instead of, or in addition to, the MassDEP simplified estimation method currently under development.

### *Reporting in Accordance with the General Reporting Protocol*

MassDEP is requiring reporting in accordance with TCR's General Reporting Protocol, version 1.1. In several cases, MassDEP is proposing to require reporters to follow procedures that are optional, but not required, under the General Reporting Protocol. Reporters would be required to use accurate methodologies to the extent practicable, report certain material throughput data used to quantify emissions, report emissions from sources separately to the extent practicable, limit the use of simplified estimation methodologies to no more than 1,000 tons, and to retain records documenting the use of best practice quantification methods in cases where the General Reporting Protocol does not include relevant methodologies. The General Reporting Protocol was designed to support The Climate Registry's voluntary reporting program. MassDEP is proposing to include these additional requirements to ensure that, in cases where the General Reporting Protocol provides options that may be appropriate for use in a

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<sup>9</sup>. Note that the Secretary of State rules governing state regulation require that documents referenced in a regulation, such as the General Reporting Protocol, be referenced as of a specific date or version. If the General Reporting Protocol is revised in the future and the Department wants to incorporate these changes, then the regulation would have to be amended through the Chapter 30A public process.

voluntary program, the use of these options does not compromise the utility of the registry that will be created under 310 CMR 7.71. MassDEP is seeking comments on these refinements to the GRP.

### *Reporting Biomass Emissions*

The General Reporting Protocol requires the reporting of carbon dioxide GHG emissions from biomass combustion separately from the CO<sub>2</sub> emissions from the combustion of fossil fuels.<sup>10</sup> CO<sub>2</sub> emissions from biomass combustion are reported separately because the carbon in biomass is of a biogenic origin—meaning that it was recently contained in living organic matter—while the carbon in fossil fuels has been trapped in geologic formations for millennia. MassDEP is proposing to require the separate reporting of CO<sub>2</sub> emissions from the combustion of biomass at this time in order to collect the data necessary to devise policies pertaining to biomass emissions in the context of the overall GHG emissions reduction strategy.

Ongoing scientific research on the climate impact of biogenic emissions is showing that the accounting of net CO<sub>2</sub> emissions should include consideration of the source of the biomass feedstock, the supply chain for that feedstock, and the net impact of removing forest-derived feedstocks on a forest's carbon intake and sequestration. Creating a reporting mechanism that supports the differentiation between feedstocks based on criteria described above could support the development of a market for low carbon biomass fuels. MassDEP envisions that the registry could be configured to allow reporters to document the sources of biogenic fuels, or to document the extent to which any carbon credits or debits associated with a feedstock have been reported from earlier points in the supply chain. MassDEP requests comments on whether configuring the registry to support this type of differentiation between biomass fuels would be a good first step toward providing such support.

### *Data Tiers*

TCR's General Reporting Protocol defines several tiers of data quality, Tiers A-C (see the General Reporting Protocol, page 56). Data Tier A, which is the highest data quality tier, generally requires the use of direct emissions monitoring or the measurement of the fuel's carbon content. Tiers B and C provide several simpler alternatives, such as calculating emissions without direct fuel sampling. MassDEP is proposing that sources use Tier A data, to the extent practicable. If Tier B or Tier C data is used, the rationale should be retained at the facility. MassDEP is thus requiring facilities to make their best effort to use the most accurate tier they can in order to maintain a high data quality level; however, the Department recognizes that many facilities will report their emissions based upon their fuel use. For facilities that use emissions factors to calculate emissions based upon fuel consumption (Tiers B or C), MassDEP is proposing to require the reporting of the quantity and the characteristics of the fuel needed to determine the correct emission factor. The Department is seeking comments on these requirements and alternatives that would provide similar data quality.

### *Reporting of Individual Source Emissions by a Facility*

MassDEP is proposing to amend 310 CMR 7.71 to require separate reporting for each stationary emissions source at a facility, to the extent practicable and consistent with the simplified estimation methods for aggregated sources described below. The rationale for requiring separate reporting for each stationary emissions source at a facility is that emissions are typically calculated for each emissions source independently, and thus should be reported independently to ensure the highest level of data accuracy and completeness. Separate reporting also will enable reporters to identify opportunities for energy-efficiency or other opportunities to reduce GHG emissions. For sources at a facility which share a

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<sup>10</sup> For the other types of GHGs, including methane and nitrous oxide, emissions from biomass can be combined with emissions from other sources for reporting.

single stream of fuel or other material that would be difficult to apportion, and that are using fuel utilization rates to calculate emissions, the reporter is allowed to document the rationale for aggregated emissions reporting.

### *Simplified Estimation Methods*

MassDEP is proposing to allow  $\leq 1,000$  tons per year of GHG emissions at a reporting facility to be estimated and reported in aggregate, as described in Chapter 11 of the General Reporting Protocol. This should greatly ease the burden of reporting, particularly for reporters with low GHG emissions. Examples of emissions sources which could potentially have emissions small enough to be estimated and aggregated include process ovens, industrial kilns and dryers, furnaces, ovens, turbines, and roof top heaters. The Department is seeking comment of whether 1,000 tons per year is an appropriate threshold for estimated, aggregated reporting. Examples of emissions sources which may have emissions low enough to be aggregated are also sought.

MassDEP considered source aggregation for sources under a certain percentage of the facility's emissions, such as the 5% estimation allowed by the General Reporting Protocol for entity-wide reporting. One problem with a percentage allowance for estimating emissions from facilities in a mandatory reporting regulation is that it allows large facilities to estimate emissions from an emission source that would need to be independently reported by a smaller facility. The Department believes this would place an unfair burden on reporters with low GHG emissions.

MassDEP also considered a suggestion to develop a list of "insignificant" sources which would not be required to report emissions. MassDEP does not intend to maintain a list of "insignificant" sources because it is important to gather the most accurate and complete GHG emissions data that is available. At a future time, it may be possible for MassDEP to create a list of "insignificant" sources that would be allowed to report estimated and/or aggregate emissions. This would be based upon the Department's experience in collecting and analyzing GHG emissions data; however, the Department does not believe it is appropriate at this date.

The Department is seeking comments on these proposals for simplified estimation methods and source aggregation.

### *Assigning Motor Vehicle Emissions*

Facilities that emit greater than 5,000 tons per year of GHGs from stationary sources are required to report emissions from motor vehicles. MassDEP proposes to amend 310 CMR 7.71 to specify the reporting of emissions from "motor vehicles that entity or its affiliate owns or leases and that were assigned to that facility. Motor vehicles are considered to be assigned to a facility if they operate in support of that facility more often than they operate in support of any other facility."<sup>11</sup>

This approach would simplify the reporting of motor vehicle emissions. For example, facilities would not need to split motor vehicle emissions between facilities based on operating hours. The proposed amendment would also clarify that only the emissions from motor vehicles owned or leased by the entity, the facility, or its affiliate, should be reported. Emissions from privately-owned motor vehicles driven by employees commuting to and from the facility would not be required to be reported. Similarly, if employees use their private motor vehicle for business travel and are reimbursed, the emissions would not be required to be reported.

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<sup>11</sup> See proposed 310 CMR 7.71(5)(b)

The proposed amendment clarifies how to assign and report the emissions from a motor vehicle used to support multiple facilities. If a motor vehicle is used to support more than one reporting facility, its associated emissions should be assigned to whichever facility it most supports most often. That is, the emissions from a motor vehicle supporting multiple reporting facilities should typically not be split, but should be assigned to one facility. However, in order to keep reporting simple, the Department proposes that motor vehicle emissions may be split between multiple facilities if those emissions are based upon fuel use and a fuel supply or pump at multiple facilities are utilized by that motor vehicle.

The Department is seeking comments on the clarity of assigning motor vehicle emissions.

### **Certification, Recordkeeping, and Public Release of Facility Reports**

MassDEP is proposing to amend 310 CMR 7.71 to incorporate requirements pertaining to certification, recordkeeping, and the public release of facility reports. These amendments are consistent with other MassDEP reporting programs. If a facility needs to correct data at any time, MassDEP is proposing to require that the corrected data be submitted with a certification statement. This proposal parallels the process required under the source registration program at 310 CMR 7.12.

### **Verification**

The CPGEA requires that MassDEP “adopt regulations to require the reporting and verification of statewide GHG emissions.”<sup>3</sup> Verification is a process to ensure the most highly accurate and complete data are reported. MassDEP considered a number of options for verification. These options are presented below, as is MassDEP’s proposed amendment. MassDEP is seeking comment on all of these options, as well as other suggestions for verification.

#### *Option 1: Third-Party Verification*

One option MassDEP considered is to require third-party verification that is similar to The Climate Registry’s verification process. TCR’s voluntary reporting program requires that each reporter hire an accredited, TCR-approved, third-party verifier. The process for verification under TCR is: 1) the reporter enters the data electronically into TCR’s database, 2) the reporter then has a TCR-approved verifier inspect their facilities and records and verify the report, and 3) the verifier informs TCR that the report has been verified. Six Verification Bodies have been accredited by the American National Standards Institute (ANSI) and thirty more firms are in the process of becoming accredited. Resources such as TCR’s General Verification Protocol and TCR’s accreditation program for verifiers could be adapted to support a mandatory program.

Verification costs are determined by the verifier. A document that lists examples of costs for verifying reports submitted to the California Climate Action Registry, which is similar to TCR’s third-party verification system, cites costs ranging from \$500 to \$17,000 for verifying entity-wide reports that include multiple facilities, indirect emissions, and emissions from mobile sources.<sup>12</sup>

The Climate Registry has adopted a risk-based approach to verification. This approach directs Verification Bodies to focus their attention on those data systems, processes, emissions sources, and calculations that pose the greatest risk of generating a material discrepancy in an effort to locate systematic reporting errors. A material discrepancy is defined as a reporting error that is greater than five percent of actual emissions and the errors must be corrected before the report can be verified. Reporting

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<sup>12</sup> See [http://www.theclimateregistry.org/downloads/Sample\\_Verification\\_Costs.pdf](http://www.theclimateregistry.org/downloads/Sample_Verification_Costs.pdf)

errors that are less than five percent of actual emissions will not prevent verification of the report. Thus, a Verification Body's risk assessment of a facility's emissions will focus on large reporting errors. The fewer the high risk data systems, processes, emissions sources, and calculations that a facility reports, the simpler the verification process will be - which may lower the costs associated with verification.

To reduce the transaction costs associated with verification, The Climate Registry also offers a modified version of its standard verification process referred to as "batch verification." Reporters are eligible for batch verification if they have relatively simple GHG emissions of not more than 1,000 metric tons total CO<sub>2</sub>e emissions (per emissions year). In addition, emissions must only originate from indirect emissions from electricity consumption, direct emissions from stationary combustion for heating or cooling, or direct emissions from mobile sources. Although "batch verification," as currently implemented, would not be an option for the majority of the facilities subject to this regulation due to the 1,000 metric ton CO<sub>2</sub>e emissions threshold, the Department is seeking comments on providing (certain facilities) an option for batch verification.

The TCR web site lists 33 firms that are participating in a pilot verification project. RGGI requires third party verification for offset projects, but not for early reduction credits or emissions reports. The Western Climate Initiative (WCI), a 7-Western states and 4-Canadian provinces GHG reduction program, is proposing to require third-party verification to support the WCI cap and trade program. The California regulation governing mandatory reporting of GHG emissions requires third-party verification every three years.

#### *Option 2: Self-Certification*

Another option MassDEP considered is for verification to be defined as the self-certification of reported emissions, subject to potential MassDEP audits. MassDEP does not currently require third-party verification for reporting other air pollutants, as current reporting rules require self-certification by facilities that their reported emissions are, "true, accurate, and complete" under pains of perjury. Massachusetts sources subject to source registration at 310 CMR 7.12 and federally-regulated Title V sources currently report their air emissions to MassDEP using self-certification.

#### *Option 3: Verification Exemptions for Specific Types of Sources*

A final option MassDEP considered is the possibility of exempting specific categories of sources for which a sufficient verification process already exists. One such category consists of units that report CO<sub>2</sub> emissions subject to the provisions of the Continuous Emissions Monitoring Rule (40 CFR Part 75). These emissions and the associated calculation methodologies are subject to extensive review and validation by the U.S. Environmental Protection Agency (EPA). Arguably, such have already been verified and do not require additional third-party verification. However, CO<sub>2</sub> emissions from biomass combustion are not required to be tracked separately under 40 CFR Part 75, as is [would be?] required by 310 CMR 7.71. These requirements mean that the CO<sub>2</sub> emissions from biomass combustion would need to be separately verified despite being subject to 40 CFR Part 75.

One subgroup of facilities reporting CO<sub>2</sub> emissions subject to 40 CFR Part 75 includes the EGUs subject to the Regional Greenhouse Gas Initiative (RGGI). RGGI requires fossil-fuel-fired electric generators >25 MW to report CO<sub>2</sub> mass emissions. The monitoring provisions of 310 CMR 7.70 (RGGI) include deadlines and procedures for the initial certification of, and, under certain circumstances, the recertification of the CO<sub>2</sub> monitoring approach. In addition, the monitoring section establishes procedures to apply conservative missing data routines in the event that a monitoring system fails to meet quality assurance and quality control requirements. These procedures are required by 40 CFR Part 75.

The stringency of the 40 CFR Part 75 requirements could be used to argue that sources reporting CO<sub>2</sub> emissions in accordance with 40 CFR Part 75 should not be subject to third-party verification requirements. On the other hand, it could be argued that third-party verification of facilities using 40 CFR Part 75 is not a burdensome requirement because the verification would be a simple, inexpensive process.

***Proposed Amendment: Triennial Third-Party Verification with an Exemption for Sources Reporting CO<sub>2</sub> Emissions under 40 CFR Part 75***

MassDEP is proposing to amend 310 CMR 7.71 to require third-party verification of reported GHG emissions data every three years. The Department believes the third-party verification of reported GHG emissions is necessary in order to:

- Provide the most accurate and complete data possible for emissions inventory and planning processes
- Ensure consistency with other GHG reporting programs, such as TCR and WCI
- Improve the credibility of GHG programs, such as early reduction credit programs, that may be implemented in the future under GWSA
- Build confidence in any market-based system that extends beyond the already well-monitored electricity generators that are included in RGGI
- Demonstrate a commitment to addressing climate change to the public and stakeholders
- Provide better consistency of reporting across all reporters.

Verification will be phased in over three years, with the facilities reporting the largest GHG emissions being the first subject to this requirement. Verification will require the use of TCR-approved verifiers and will only be required for emissions reported in the verification year. Verifying emissions every third reporting year should minimize the costs associated with verification while still fulfilling the requirements of the CPGEA. Requiring verification every three years, as opposed to every two or five years, is being proposed because the CPGEA requires the triennial publication of a state GHG emissions inventory. Thus, reported GHG emissions from each source will have been verified for one year in each state GHG emissions inventory.

Facilities would be assigned to one of three groups for verification, depending partly upon the amount of their reported GHG emissions. The groups are as follows: a) facilities reporting > 25,000 tons per year of CO<sub>2</sub> in 2009, b) facilities reporting > 10,000 tons per year of CO<sub>2</sub>e in 2010, and c) all other reporters. The first group would verify 2010 emissions data reported in 2011; the second group would verify 2011 emissions data reported in 2012; and the third group would verify 2012 emissions data reported in 2013 (see table below). The cycle would then repeat. Facilities reporting for the first time in 2011 or 2012 would verify their 2012 emissions in 2013 and every third year thereafter. Facilities reporting for the first time in 2013 or thereafter would verify their emissions in their initial reporting year and every third year thereafter.

### Verification Schedule

2009	2010	2011	2012	2013	2014	2015	2016	2017 & beyond
> 25,000 tpy CO <sub>2</sub>		Verify 2010 emissions			Verify 2013 emissions			Continuing triennial verification
< 25,000 tpy CO <sub>2</sub>	> 10,000 tpy CO <sub>2e</sub>		Verify 2011 emissions			Verify 2014 emissions		
< 25,000 tpy CO <sub>2</sub>	< 10,000 tpy CO <sub>2e</sub>			Verify 2012 emissions			Verify 2015 emissions	
		New reporter		Verify 2012 emissions			Verify 2015 emissions	
			New reporter	Verify 2012 emissions			Verify 2015 emissions	
				New reporters verify in their initial reporting year and every 3 <sup>rd</sup> year thereafter.				

Notes: “Verify” means third-party verification of the previous year’s reported GHG emissions. “New reporter” means a facility that begins reporting under 310 CMR 7.71 because it has exceeded 5,000 tpy CO<sub>2e</sub> or has been issued a new Appendix C permit for that calendar year.

The initial verification phase is being proposed for 2010 emissions, rather than 2009 emissions, because all six types of GHGs will be reported for 2010 emissions, whereas only CO<sub>2</sub> emissions will be reported in 2009. This delay also allows for sufficient notice to reporters of the verification requirement. Finally, initiating the verification requirement for 2010 emissions allows time for additional verifiers to be certified by TCR. MassDEP will closely monitor the number of available verifiers to ensure sufficient availability at a reasonable cost.

Because triennial, rather than annual, third-party verification is being required, a possibility exists in which verification may uncover a reporting error pertaining to reported emissions from preceding, unverified years. In this case, the entity reporting the emissions to the registry will be required to correct said errors, and any corresponding errors in the previous two annual reports, and re-certify said reports. Verification is not required for the previous two annual reports.

Finally, MassDEP proposes that sources reporting CO<sub>2</sub> emissions subject to 40 CFR Part 75 requirements be exempt from the third-party verification requirements for those CO<sub>2</sub> emissions. Other GHG emissions from such a source, such as methane or nitrous oxide emissions, would still be subject to the third-party verification requirement because these emissions are not reviewed under 40 CFR Part 75. CO<sub>2</sub> emissions from biomass combustion also are still subject to the third-party verification requirement because they are not reported separately under 40 CFR Part 75; this should be a simple and inexpensive process because biomass emissions may be calculated based upon fuel use and an appropriate emissions factor. The

Department is not proposing to exempt sources that utilize Continuous Emissions Monitoring, but are not subject to 40 CFR Part 75 requirements, from third-party verification.

Specific proposed provisions exempting data that has been verified pursuant to 40 CFR Part 75, TCR's voluntary program, or the RGGI offsets program<sup>13</sup> are included in the proposed amendments to 310 CMR 7.71. The Department requests comments on whether other categories of emissions sources which have established independent verification procedures should be exempt from the third-party verification requirements.

### **Voluntary Reporting**

The CPGEA requires MassDEP to “provide for the voluntary reporting of emissions of GHGs to the regional GHG registry by entities and facilities that are not required to submit information.”<sup>14</sup> Voluntary reporting of GHG emissions by facilities not required to report under the mandatory reporting rule may provide an opportunity for such facilities to establish an emissions baseline and document early action. In addition, facilities voluntarily reporting their GHG emissions may find the process useful for other reasons, including: the opportunity to improve energy efficiency; for recognition as an environmental leader; to provide information to stakeholders; and to prepare for federal programs.

MassDEP is proposing to include voluntary reporting by facilities not required to report under 310 CMR 7.71. The Department is also proposing to include a provision for voluntarily including additional data elements by facilities which are required to report under 310 CMR 7.71. The voluntary reporting of additional data elements could include, but is not limited to, indirect emissions due to electricity consumption at any facility, motor vehicle emissions from a facility that emitted less than 5,000 tons of greenhouse gas emissions in a particular year, and emissions of gases other than carbon dioxide that occurred in 2009.

A primary goal of 310 CMR 7.71 is to have all data contained in the registry be credible, accurate and consistent. Therefore, MassDEP believes that voluntary reporters should be subject to the same requirements as mandatory reporters because they both will be reporting to the same registry. Voluntary reporters will use TCR's General Reporting Protocol, will report to a regional registry, and will be required to perform third-party verification every three years, as described above. However, voluntary reporters will not be subject to the “once in, always in” provision in 310 CMR 7.71. Voluntary reporters can elect to use the Massachusetts mandatory reporting program or TCR's broader reporting program, which includes facilities outside of Massachusetts and indirect emissions resulting from purchased electricity. Massachusetts facilities may find voluntary reporting under 310 CMR 7.71 (rather than to TCR) to be advantageous because 310 CMR 7.71 provides for reporting at the facility (rather than entity) level and requires third-party verification only triennially (rather than annually).

The Department is seeking comment on whether voluntary reports should be identified as voluntary by the registry, or whether, given the fact that voluntary reporters are required to comply with all provisions of the regulation, it would be preferable to have no distinction between voluntary and mandatory reports.

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<sup>13</sup> See 310 CMR 7.70(10) or corresponding provisions in the CO<sub>2</sub> Budget Trading Program regulations of any other state

<sup>14</sup> See M.G.L. Chapter 21N, Section 2(a)(4)

## Retail Sellers of Electricity

The CPGEA requires “reporting of greenhouse gas emissions from generation sources producing all electricity consumed, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth; provided, however, that this requirement shall apply to all retail sellers of electricity, including electric utilities, municipal electric departments and municipal light boards...”<sup>15</sup>

The amount of electricity generated each year by power plants located inside of Massachusetts is 75-80% of the amount of electricity consumed in Massachusetts. The remaining 20-25% of electricity is generated outside of Massachusetts and imported into the state. Thus, the GHG emissions from the power plants located in Massachusetts do not represent the total GHG emissions associated with consumption of electricity in Massachusetts. The CPGEA directs MassDEP to require reporting that reflects the emissions characteristics of the electricity consumed in the state. MassDEP will therefore calculate GHG emission factors (EFs) in pounds of CO<sub>2</sub>e per megawatt hour (MWh) that represent the average GHG emissions associated with generating the electricity consumed in Massachusetts. These EFs will change annually because the quantity and source of electricity imported into and generated within Massachusetts changes annually.

In proposing an approach to implement this provision, MassDEP has tried to balance the level of data precision needed against the availability of data, so as to take advantage of existing data sources. The overall approach MassDEP is proposing is:

1. Each year, MassDEP will draft, and post on its website, GHG EFs for both biogenic and non-biogenic emissions.
2. Interested parties will have the opportunity to review and comment on MassDEP’s methodology, data sources and calculation.
3. MassDEP will post a final annual EF.
4. A month after MassDEP has posted the final annual EFs, retail sellers will report their GHG emissions, by multiplying the final annual EFs by the number of MWh the retail seller provided their customers.

Calculating the EFs requires electric-generating sector GHG emissions<sup>16</sup> data in each of the six New England states and in each of the control areas adjacent<sup>17</sup> to New England that may send power to New England. GHG emissions data for the United States can be found in the annual EPA CO<sub>2</sub> emission report, which is used in combination with EPA-published emission factors for methane and nitrous oxide. For the Canadian provinces, Environment Canada publishes GHG data in an annual national inventory report. In addition to state- and province-level GHG emissions, calculating the EFs requires the MWh of electricity generated and consumed in each New England state, and imported from adjacent control areas, which is available from the region’s independent system operator, ISO New England. At present, the most recent year for which all this data is available to calculate the EFs is 2005. In other words, there is currently about a 2-3 year lag time between the year the electricity was consumed and the year emissions data is available. The methodology and data sources used in determining the EFs and the timing of the website posting are expected to change as data quality and data sources improve over the years.

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<sup>15</sup> See M.G.L. Chapter 21N, Section 2(a)(5)

<sup>16</sup> The GHGs emitted from power plant smokestacks are carbon dioxide, methane and nitrous oxide.

<sup>17</sup> The control areas adjacent to New England that could send power to New England are New York, Quebec and New Brunswick.

In order to obtain an estimate of current GHG emissions resulting from electricity consumption sooner than 2013, MassDEP is proposing that retail sellers submit an initial report in 2010. MassDEP intends to post a draft of the first annual EFs on its website for comment by March 15, 2010, based on the most recent year of data available, which will be no earlier than 2006. Regular, annual reporting will begin with 2010 emissions, for which MassDEP expects to be able to publish draft EFs no later than early in 2013. The Department will send notice of the posting of the EFs to the most recent e-mail address it has for each retail seller each year.

In implementing the basic approach of reporting GHG emissions based on multiplying EFs by the MWh supplied by a retail seller, MassDEP is proposing that retail sellers rely on existing sources of MWh data. In particular, retail sellers subject to the Massachusetts Department of Energy Resources' (DOER) Renewable Portfolio Standard (RPS) regulations at 225 CMR 14.00 and 15.00 are required to use the same MWh for their compliance with RPS and for reporting their GHG emissions. This value is already reviewed by DOER, and it makes sense for retail sellers and MassDEP to rely on the efforts already put into verifying this value, rather than replicating work by re-verifying the value. Similarly, the 40 Massachusetts electric departments and light boards, while not subject to RPS, are already required to report the MWh they supply their customers in an "annual return" to the Massachusetts Department of Public Utilities (DPU). MassDEP proposes to require these retail sellers to use the MWh they report in their "annual return" on page 57, line 15 to calculate their reported GHG emissions. CPGEA requires that GHG reporting by electricity sellers include "transmission and distribution line losses"<sup>15</sup>; these line losses are included in the MWh that MassDEP is proposing be used to calculate GHG emissions (i.e., MWh reported to DOER for the RPS and to DPU for the annual return).

MassDEP is proposing to allow a number of adjustments to the basic approach in order to account for the ownership and use of non- or low-emitting generation sources by certain retail sellers. MassDEP has attempted to keep this adjustment process simple in order to encourage providing credit to electric sellers for their clean electricity purchases. Certain quantities of MWh may be deducted from the total MWh delivered to customers, prior to multiplying by the GHG EFs, as follows:

Retail sellers subject to DOER's RPS may deduct:

1. non-emitting MWh used to comply with RPS;
2. non-emitting MWh that were in excess of the amounts needed to comply with RPS; the renewable energy certificates used to track ownership of the non-emitting attribute of the MWh must also be retired from the retail seller's account in the regional certificate tracking system<sup>18</sup>;
3. non-emitting MWh that were not eligible to be used for compliance with RPS, but for which the retail seller provides a contract showing that they bought the non-emitting power from the particular power plant that generated it; the certificates used to track ownership of the non-emitting attribute of the MWh must also be retired from the retail seller's account in the regional certificate tracking system; or
4. low-emitting MWh whose emissions are documented through the facility reporting portion of 310 CMR 7.71 or are verified by an approved verification body; the certificates used to track ownership of the emitting attribute of the MWh must also be retired from the retail seller's account in the regional certificate tracking system; the retail seller must provide a contract showing that

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<sup>18</sup> The regional certificate tracking system is called the New England Power Pool Generation Information System (GIS). The Operating Rules governing the tracking system can be found at [http://www.nepoolgis.com/GeneralDoc/NEPOOL%20GIS%20Rules%20-%201\\_1\\_09.DOC](http://www.nepoolgis.com/GeneralDoc/NEPOOL%20GIS%20Rules%20-%201_1_09.DOC).

they bought the non-emitting power from the particular power plant that generated it, if the retail seller does not own the plant.

Municipal retail sellers may deduct certain MWh, to the extent they:

1. own non-emitting generation; the certificates used to track ownership of the non-emitting attribute of the MWh in the regional certificate tracking system must be shown not to have been used by another party<sup>19</sup>;
2. provide a contract showing that they bought non-emitting power from the particular power plant that generated it<sup>20</sup>; or
3. document low-emitting MWh emissions through the facility reporting portion of 310 CMR 7.71 or by an approved verification body; the certificates used to track ownership of the emitting attribute of the MWh in the regional certificate tracking system must be shown not to have been used by another party ; and the retail seller must provide a contract showing that they bought the emitting power from the particular power plant that generated it, if the retail seller does not own the plant.

The Department is proposing to require retail sellers to provide a contract for certain non- or low-emitting power they choose to deduct in calculating GHG emissions, to prevent “cherry-picking” of clean power generated throughout New England, since other New England states do not have a retail seller GHG reporting requirement like Massachusetts.

Allowing individual retail sellers to make the above adjustments in their GHG reporting affects the EFs representing the remaining MWh consumed in Massachusetts. Specifically, once individual retail sellers “take credit” for non- or low-emitting MWh, EFs must be recalculated based on the emissions of the remaining MWh consumed in Massachusetts, to ensure accuracy. The EFs to be used by retail sellers who do not choose to make the above adjustments will likely increase, since presumably most retail sellers choosing to make adjustments will make that effort only for electricity with lower EFs than the overall Massachusetts EFs, effectively removing clean MWh from the calculation of the EFs for the remaining MWh consumed in Massachusetts. In order for the Department to take these adjustments into account in calculating draft EFs, the proposed regulation requires the reporting of such adjustments by July 1 after the calendar year in which the MWh were generated, beginning with a July 1, 2011 report based on 2010 generation. The process for the initial report to be submitted in 2010 will be slightly different, to accommodate reporting based on the most recent year of data available at that time: first, the Department will release draft EFs, then retail sellers will report any MWh adjustments they choose to make, after which the Department will release amended draft EFs for public comment.

MassDEP has developed a spreadsheet to simplify reporting for retail sellers, which is attached as Appendix A to this Technical Support Document. Retail sellers who choose the simplest reporting approach (not adjusting for ownership and use of non- or low-emitting generation sources), need only enter the total MWh they supply their customers, and the spreadsheet will calculate the associated GHG emissions. Retail sellers qualifying and choosing to make adjustments for the use of non-emitting MWh, must enter the total and non-emitting MWh they supply their customers, and the spreadsheet will calculate the associated GHG emissions. Lastly, retail sellers qualifying and choosing to make adjustments for the

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<sup>19</sup> While municipal electric departments and light boards document MWh generated by large and small stations they own on pages 58-59 line 12 and page 66 column (e), respectively, of the “annual return” they provide to the DPU, the values listed on the “annual return” can include MWh for which the municipality has sold the certificates representing the “clean” attribute of the power. Therefore, the Department cannot rely solely on the annual return to document such MWh.

<sup>20</sup> While municipal electric departments and light boards document purchases of electricity on page 55 column (k) of the “annual return” they provide to the DPU, it is not obvious in all cases whether this electricity is from emitting or non-emitting electricity generators. Therefore, the Department cannot rely solely on the annual return to document such MWh.

use of emitting MWh, must enter the total and emitting MWh they supply their customers, and the GHG emissions associated with the emitting MWh, and the spreadsheet will calculate the total GHG emissions.

MassDEP believes this approach will achieve a sufficient level of accuracy for reporting purposes, by relying on verification of MWh already occurring under other state regulations, and on verification of certain power plant-specific GHG emissions under the facility reporting provisions in 310 CMR 7.71(5) and (8) or by an approved verification body.

MassDEP requests comments and suggestions for revisions to the regulatory language on the following issues: 1) whether the methodology above is appropriate, 2) whether it is appropriate to allow MWh of certain non-emitting resources to be subtracted from the calculation of a retail seller's GHG emissions, and 3) whether it is appropriate to allow retail sellers to adjust GHG emissions for unit-specific emissions associated with certain emitting resources.

### **Early Reduction Credits**

The CPGEA states<sup>21</sup> that, "The secretary shall monitor the implementation of regulations relative to climate change and shall, every 5 years, publish a report which shall include recommendations regarding such implementation. The report shall include, without limitation: (i) whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to the commonwealth and encourage early action to reduce greenhouse gas emissions; ... (iii) whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this chapter receive appropriate credit for early voluntary reductions..."

MassDEP is not proposing amendments to 310 CMR 7.71 to establish early action credits at this time because there is not currently a program in which early action credits could be used. However, it is possible that MassDEP may propose such regulations in the future due to the CPGEA's provision to, "encourage early action to reduce greenhouse gas emissions."<sup>21</sup> MassDEP encourages facilities regulated under 310 CMR 7.71 to consider if they would be interested in an early action credit program and, if so, to begin to take action to demonstrate this interest. The first step in establishing an early action credit program is to establish a baseline for each facility using the most accurate data available. MassDEP encourages facilities interested in a potential early action credit program to keep careful records and to consider the use of annual third-party verification for their reported emissions. MassDEP is seeking comments on the structure, requirements, and timeframe for possible early action credit programs.

### **Consistency with Future Federal GHG Reporting Programs**

In its Fiscal Year 2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110-161), Congress directed the Environmental Protection Agency (EPA) to "publish a draft rule not later than 9 months after the date of enactment of this Act [January 4, 2007], and a final rule not later than 18 months after the date of enactment of this Act, to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy..."<sup>22</sup> Furthermore, the Agency shall "use its existing authority under the Clean Air Act to develop a mandatory GHG reporting rule." The rule will require mandatory reporting of GHG "above appropriate thresholds in all sectors of the economy." EPA is responsible for determining those thresholds, as well as the frequency of reporting.

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<sup>21</sup> See M.G.L. Chapter 21N, Section 5

<sup>22</sup> See <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>

EPA released a draft GHG reporting rule on March 10, 2009<sup>23</sup>, with a final rule expected this year. Upon publication of a final GHG reporting rule by EPA, MassDEP will determine if amendments to 310 CMR 7.71 are necessary or desirable for consistency with the federal program.

### III. IMPLEMENTATION

#### Reporting Schedule

Eligible facilities are required to register with MassDEP in the first year of the program, as described above. Facilities are required to report CO<sub>2</sub> emissions from calendar year 2009 by April 15, 2010. For 2010 emissions and beyond, reporting will be required for all GHGs by April 15 of the following year. The GHGs required to be reported are: carbon dioxide, methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>).

Only facilities reporting more than 5,000 tpy of GHGs are required to report emissions from motor vehicles. This requirement will apply to emissions from on-road vehicles for 2009, but will apply to emissions from on-road and non-road vehicles for 2010 and beyond.

			FACILITIES REQUIRED TO REPORT		
Emissions Year	Gases/Motor Vehicles	Reporting Deadline	Appendix C (Title V) ≤ 5,000 tpy GHGs	> 5,000 tpy GHGs (including Appendix C)	Electricity Sellers
			Is this source type required to report emissions from the gases or motor vehicle categories listed at left?		
2009	CO <sub>2</sub>	April 15, 2010	Yes	Yes	No
	On-road only	April 15, 2010	No	Yes	No
2010 and beyond	CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub>	April 15, 2011	Yes	Yes	Yes
	On-road and non-road	April 15, 2011	No	Yes	No

#### Fees for Mandatory Reporting

Using authority provided to MassDEP under M.G.L. c.21A §18, MassDEP intends to propose fees for facilities subject to 310 CMR 7.71. The proposed fees will cover a portion of the Department's costs and provide for the orderly and efficient administration of the GHG Program. These fees may be calculated on a per ton basis or may be assigned based on a tiered system. MassDEP expects to propose fees for 310

<sup>23</sup> As of public release of this document on March 27, 2009, the federal GHG reporting rule had not yet been published in the Federal Register. See EPA's website for more information at: <http://www.epa.gov/climatechange/emissions/ghgrulemaking.html>

CMR 7.71 during the fall of 2009. Notice of that proposal will be provided to all parties who are included in the Department's GHG stakeholder process, or according to the Department's records, are expected to be subject to 310 CMR 7.71.

#### **IV. IMPACTS AND PUBLIC PARTICIPATION**

##### **Economic Impacts**

MassDEP expects that 310 CMR 7.71 will not cause significant hardship to facilities required to report, although it does expect an increase in the general cost of reporting. This is because of the need to gather additional data, the time to become familiar with the General Reporting Protocol, and the requirement to report to a regional registry (rather than to an existing reporting system). Verification will also add a cost, but this cost has been minimized because it will only be incurred every third year. MassDEP expects that with time, these reporting and verification costs will turn into an opportunity for Massachusetts businesses to decrease their operating costs by enhancing energy efficiency efforts and by creating an emissions baseline which potentially could be used in the future to create offsets or to qualify for early reduction credits.

##### **Agricultural Impacts**

Pursuant to Massachusetts General Laws, Chapter 30A, Section 18, state agencies must evaluate the impact of proposed programs on agriculture within the Commonwealth. 310 CMR 7.71 requires facilities emitting >5,000 tons/year of CO<sub>2</sub>e GHGs to report their emissions; some agricultural facilities may meet this applicability standard. However, MassDEP expects that 310 CMR 7.71 will not cause significant hardship to agricultural facilities which are required to report. It does expect a cost associated with reporting because of the need to gather data, the time to become familiar with the General Reporting Protocol, and the cost of triennial verification. One advantage for agricultural facilities reporting under 310 CMR 7.71 may be the establishment of an emissions baseline which potentially could be used in the future to qualify for early reduction credits. Additionally, climate change is expected to cause a number of negative impacts on agricultural production. Therefore, any mitigation of these impacts that results from the implementation of these regulations would benefit the agricultural sector in Massachusetts.

##### **Impact on Massachusetts Municipalities**

MassDEP expects that 310 CMR 7.71 will not cause significant hardship to facilities required to report, including Massachusetts municipal facilities such as municipal light and power companies. It does expect a cost associated with reporting because of the need to gather data, the time to become familiar with the General Reporting Protocol, and the requirement to report to a regional registry (rather than to an existing reporting system). MassDEP believes that Massachusetts municipalities subject to 310 CMR 7.71 are already reporting under source registration (310 CMR 7.12) and therefore the additional burden from 310 CMR 7.71 is small. Third-party verification will also add a cost, but this cost has been minimized because it will only be incurred every third year. MassDEP expects that with time, these reporting and verification costs will turn into an opportunity for Massachusetts municipalities to decrease their operating costs by enhancing energy efficiency efforts and by creating an emissions baseline which potentially could be used in the future to create early reduction credits.

##### **Massachusetts Environmental Policy Act**

These proposed regulations are "categorically exempt" from the "Regulations Governing the Preparation of Environmental Impact Reports," 301 CMR 11.00, because this regulation, will not result in increased levels of emissions. Indeed, the GWSA, which mandated the promulgation of 310 CMR 7.71, calls for the

establishment of enforceable state limits on GHG emissions. All reasonable measures have been taken to minimize adverse impacts.

### **Impacts on Other Programs – Air Toxics**

Air toxics are a group of chemical air contaminants that are associated with significant environmental impacts or adverse health effects such as cancer, reproductive effects and birth defects. The federal Clean Air Act requires EPA to promulgate source-specific controls based on Maximum Achievable Control Technologies (MACT) for air toxics. MassDEP implements MACT standards as EPA promulgates them. In addition, MassDEP controls air toxics through reductions of criteria pollutants and through its Toxics Use Reduction Program. Toxics use reduction is a MassDEP priority. Toxics use reduction is defined as in-plant practices that reduce or eliminate the total mass of contaminants discharged to the environment. The proposed regulation will promote toxics use reduction by encouraging the generation of renewable energy and promoting fuel and energy efficiency at existing electric generating units and other facilities. The resulting reduction in combustion of fossil fuels will reduce the release of air toxics.

### **Request for Comments**

MassDEP solicits comments on any of the provisions set forth in 310 CMR 7.71 or on any of the proposed amendments.

### **Public Participation**

MassDEP now gives notice and is providing the opportunity to review 310 CMR 7.71: *Mandatory Reporting of Greenhouse Gas Emissions to a Regional*, the proposed amendments, the background document, and any technical information. A public hearing is scheduled for April 27, 2009, which will be held in accordance with the procedures of MGL Chapter 30A.

A copy of 310 CMR 7.71 and this background document are available on MassDEP's website at: <http://www.mass.gov/dep/>. Copies can also be obtained at MassDEP's headquarters at One Winter Street, Boston.

Please send comments to: [climate.strategies@state.ma.us](mailto:climate.strategies@state.ma.us)

If there are any questions regarding this document, please contact William Space at:

MassDEP  
Bureau of Waste Prevention  
1 Winter Street  
Boston, MA 02108  
617-292-5610

# APPENDIX A



Retail Seller Reporting.xls

## Retail Seller GHG Emissions Report

### STEP 1: MANDATORY

Retail Sellers must report all MWh Sold From RPS RECs or Municipal Annual Return

As reported to DOER or DPU		As developed annually by MassDEP			
Electricity Consumed (MWh)		Emission Factor (lb CO <sub>2</sub> e/MWh)		CO <sub>2</sub> e Emissions (short tons)	
100,000	x	950	=	95,000,000	Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
100,000	x	10	=	1,000,000	Biogenic CO <sub>2</sub> only

### STEP 2: OPTIONAL NON-EMITTING GENERATION

Enter Non-Emitting MWh From RPS RECs or Municipal Annual Return Required supporting documentation, if any, is specified in regulation

As reported to DOER or DPU or regional tracking system		As developed annually by MassDEP			
Electricity Consumed (MWh)		Emission Factor (lb CO <sub>2</sub> e/MWh)		CO <sub>2</sub> e Emissions (short tons)	
1,000	x	0	=	0	Non-Emitting
99,000	x	950	=	94,050,000	Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
99,000	x	10	=	990,000	Biogenic CO <sub>2</sub> only

### STEP 3: OPTIONAL EMITTING GENERATION

Enter Emitting MWh, Fuel Type, Biogenic and Non-biogenic Emissions Required supporting documentation, if any, is specified in regulation

Both biogenic CO<sub>2</sub> and non-biogenic CO<sub>2</sub>e emissions must be reported for the following fuel types:  
 Biomass  
 Landfill Gas  
 Digester Gas  
 Municipal Waste

Biogenic CO<sub>2</sub>e emissions for the following fuel types must be zero:  
 Fossil Fuels

As reported to DOER or DPU or regional tracking system		see table at left for guidance on emission value			
Electricity Consumed (MWh)	Fuel Type			CO <sub>2</sub> e Emissions (short tons)	
Source Specific MWh - Must Identify Source (Facility Name, ID#, Location)					
1,000 (Enter MWh)	Biomass (Enter Fuel Type)			3	Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
1,000	Biomass			600	Biogenic CO <sub>2</sub> only
Source Specific MWh - Must Identify Source (Facility Name, ID#, Location)					
500 (Enter MWh)	Natural Gas (Enter Fuel Type)			225	Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
500	Natural Gas			0	Biogenic CO <sub>2</sub> only
Source Specific MWh - Must Identify Source (Facility Name, ID#, Location)					
0 (Enter MWh)	Biomass (Enter Fuel Type)				Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
0	Biomass				Biogenic CO <sub>2</sub> only
1,500	MWh			228	Unit-specific Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
1,500	MWh			600	Unit-specific Biogenic CO <sub>2</sub> only
98,500	x	950	=	93,575,000	Non-unit-specific Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
98,500	x	10	=	985,000	Non-unit-specific Biogenic CO <sub>2</sub> only
				93,575,228	Total Non-biogenic CO <sub>2</sub> and All CH <sub>4</sub> and N <sub>2</sub> O
				985,600	Total Biogenic CO <sub>2</sub> only

Guidance for Step 3 GHG emissions	Retail seller using all MWh from stationary emission source, and source not Combined Heat and Power?	
	yes	no
Stationary emission source reporting under 310 CMR 7.71(5) or (8)?	yes	use a portion GHG emissions reported under 310 CMR 7.71(5) or (8)
	no	use a portion of GHG emissions verified by an approved verification body

### SUMMARY of CO<sub>2</sub>e Emissions

Non-biogenic CO <sub>2</sub> e Emissions From Mandatory Reporting	=	95,000,000	short tons
Biogenic CO <sub>2</sub> e Emissions From Mandatory Reporting	=	1,000,000	short tons
Non-biogenic CO <sub>2</sub> e Emissions Saved From Non-Emitting MWh	=	950,000	short tons
Biogenic CO <sub>2</sub> e Emissions Saved From Non-Emitting MWh	=	10,000	short tons
Non-biogenic CO <sub>2</sub> e Emissions Difference From Emitting MWh	=	1,424,772	short tons
Biogenic CO <sub>2</sub> e Emissions Difference From Emitting MWh	=	14,400	short tons
<b>Total Non-biogenic CO<sub>2</sub>e Emissions</b>	=	<b>92,625,228</b>	<b>short tons</b>
<b>Total Biogenic CO<sub>2</sub>e Emissions</b>	=	<b>975,600</b>	<b>short tons</b>