Massachusetts
Renewable Energy Portfolio Standard

ANNUAL RPS COMPLIANCE REPORT FOR 2008

JULY 29, 2010

Department of Energy Resources
Executive Office of Energy and Environmental Affairs
Commonwealth of Massachusetts

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EXECUTIVE SUMMARY

The Massachusetts Renewable Energy Portfolio Standard (RPS) is a statutory obligation that Retail Electricity Suppliers (both regulated distribution utilities and competitive suppliers) obtain for their retail customers an annually increasing percentage of electricity from sources that qualify as New Renewable Generation Units (termed "RPS Class I Renewable Generation Units" as of 2009). The RPS began with an obligation of one percent in 2003, then increased by a half percent annually, and was three and a half percent in 2008. Since reaching four percent in 2009, the RPS annual increase has been one percent, pursuant to the Green Communities Act of 2008. Thus, the 2010 obligation is five percent, and the 2020 obligation will be 15%. The 2008 Act also established energy portfolio standards for pre-1998 renewable resources and for alternative energy resources, which will be reported in future annual reports.

The supply of MA RPS-qualified Renewable Energy Certificates (RECs) for 2008 RPS compliance exceeded demand for the second consecutive year, following the supply shortages of the first four years of RPS, 2003-2006. The total retail load obligation in 2008 was 50,322 GWh, of which the three and a half percent RPS obligation was 1,761 GWh. The total supply of RECs generated in 2008 was 1,896 GWh. In addition to the RECs generated in 2008, another 81 GWh of RECs banked from 2006 and 2007 were available for compliance.

Twenty-six Retail Electricity Suppliers had RPS obligations in 2008. The overall supply surplus notwithstanding, three Suppliers did not acquire quite enough RECs for their compliance and used the Alternative Compliance mechanism to cover their shortfall, which amounted to less than a tenth of one percent of their requisite total RECs. The REC surplus totaled almost 217 GWh, of which almost 211 GWh were banked forward by twenty-one Suppliers for use towards their compliance in 2009 or 2010.

The major supplies of electricity from New Renewable Generation Units continued to come from biomass and landfill methane powered plants, at 39% and 35% respectively. Wind powered electricity continued to be the fastest growing resource, with its share rising to almost 25% of the supply in 2008. The remaining supply, less than 2%, came from anaerobic digester plants and solar photovoltaic arrays. Geographically, New York resources (landfill methane plants and wind farms) were the largest single source of RPS-qualified electricity, at 27% of the total, closely followed by 26% from Maine (mostly biomass), 14% from New Hampshire (mostly biomass), 13% from wind farms in adjacent Canadian provinces, and 10% from Massachusetts (mostly landfill methane).

The continued, steady growth of electricity supply from new renewable sources in Massachusetts has been exceeded, thus far, by the faster growth of imports from new wind farms and landfill gas projects in neighboring New York and southeastern Canada. Meantime, supplies from northern New England biomass plants began to decline in 2008. Looking ahead, more rapid growth in Massachusetts located resources is especially promising in onshore and offshore wind farm development.

The RPS obligation has continued providing an incentive for the accelerated development of New Renewable Generation Units since 2002. Beginning in 2009, Massachusetts RPS resources, as well as renewable energy development in the entire nation, has been stimulated by federal recovery funds.

MA RPS in 2009 featured the entry of hydroelectric as an RPS eligible resource and the launch of RPS Class II for pre-1998 plants. In addition, the Massachusetts Green Communities Act of 2008 established the new Alternative Energy Portfolio Standard (APS) for combined-heat-and-power (CHP), flywheel storage, and other technologies. The 2009 Annual Report will encompass these new standards. Beyond 2009, the program will be altered by the 2010 launch of the new Solar Carve-Out and by future changes in the eligibility of woody biomass.

BRIEF INTRODUCTION TO THE RENEWABLE ENERGY PORTFOLIO STANDARD

This section briefly describes the Massachusetts Renewable Energy Portfolio Standard (RPS) as it was structured in 2008.[1] The last paragraph summarizes some major changes that took effect on January 1, 2009, pursuant to the Green Communities Act, which was enacted in July 2008.[2]

The original RPS (since renamed RPS Class I) is a statutory obligation that Retail Electricity Suppliers (both regulated distribution utilities and competitive suppliers) obtain for their retail customers a small but growing percentage of electricity from sources that qualify as New Renewable Generation Units. The RPS began with an obligation of one percent in 2003, increased by a half percent annually through 2009, when it reached four percent, and since 2009 increases by one percent annually, so that it is five percent in 2010 and will be fifteen percent in 2020. The RPS obligation in 2008, the subject of this report, was three and a half percent.

Retail Electricity Suppliers ("Suppliers") meet their annual RPS obligations by acquiring a sufficient quantity of MA RPS-qualified Renewable Energy Certificates ("RECs") that are created and recorded at the NEPOOL Generation Information System ("GIS").[3] The NEPOOL GIS tracks all electricity generated within the ISO New England ("ISO-NE") control area and fed onto the New England grid, as well as electricity exchanged between ISO-NE and adjacent control areas.[4] For each megawatt-hour (MWh) of electricity, whether renewable or not, one serially-numbered, electronic certificate is created and added to the NEPOOL GIS account of the facility that generated or imported the MWh. Certificates representing renewable generation are coded accordingly and known as RECs.[5] A Supplier purchases RECs from a generator, either directly or via a broker, and the RECs are then electronically transferred from the generator's GIS account to the Supplier's GIS account.

The supply of electricity that currently earns MA RPS-qualified RECs comes from facilities that began commercial operation after 1997[6] and that use any of the following[7]:

- Solar photovoltaic;

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[1] The RPS provisions of the Electricity Restructuring Act of 1997, later replaced by provisions of the Green Communities Act of 2008, were incorporated in Massachusetts law at M.G.L., c. 25A, §11F, which is available at www.mass.gov/legis/laws/mgl/25a-11f.htm.

[2] DOER's actions pursuant to the 2008 Act can be accessed via the DOER homepage at http://www.mass.gov/doer.

[3] See www.nepoolgis.com.

[4] The ISO-NE control area, covering most of New England, is a geographic region in which a common control system is used to maintain scheduled interchange of electrical energy within and without the region. ISO New England Inc. is the independent system operator for the ISO-NE control area, operating the New England electric power grid. See http://www.iso-ne.com/aboutiso/index.html.

[5] Not every REC is qualified for MA RPS. Each REC is encoded to indicate the Generation Unit name, location, and fuel from which the electricity was generated, as well as the state(s) for which the Generation Unit and its RECs are RPS qualified. A MA qualified REC that is also qualified or RPS in another New England states can be sold, transferred, and used to meet either state's RSP obligation. By the end of each REC trading year, each REC can be located in only one GIS state-specific sub-account, so double-counting of RECs is not possible. Each state's RPS statute and regulations define the RPS eligibility of generation a bit differently, and those definitions can change over time. Finally, note that what does and does not qualify for MA RPS *changed* on January 1, 2009, under the 2008 Green Communities Act's revision of the RPS.

[6] In addition to the electricity output from new, i.e., post-1997, renewable facilities, DOER also has qualified as "new" the outputs each year of some pre-1998 renewable facilities that exceed those facilities' "historical generation rates," defined as their average annual output during 1995-97. The latter facilities are qualified as New Renewable Generation Units under a Vintage Waiver, per the RPS Regulations at 225 CMR 14.05(2). The Vintage provision also changed in 2009.

[7] Several additional *types* of renewable energy resources also qualify but were not yet developed in New England by 2008.

- Wind energy;
- Landfill methane; and
- Eligible biomass fuel (including anaerobic digester gas) in units that employ "low-emissions, advanced biomass power conversion technologies."

The current RPS requirements are further detailed in the RPS Regulations, which also explain how facilities become qualified and how Retail Electricity Suppliers demonstrate their compliance with RPS.[8] Note that the list of RPS-eligible technologies expanded as of January 1, 2009.[9]

New RPS Regulations became effective on an "emergency" basis on January 1, 2009, and the subsequent, formal rulemaking process concluded with the promulgation of final revised Regulations effective on June 12, 2009.[10] The new Regulations expanded the list of RPS-eligible sources to include hydroelectricity plants of small size and minimal environmental impact, as well as geothermal and "marine and hydro-kinetic" facilities. The original RPS was renamed RPS Class I, which is for post-1997 Generation Units (but with some grandfathered Vintage Generation Units still partially qualified), and an RPS Class II was established for pre-1998 Generation Units. Waste-to-Energy, which was listed as "renewable" but not "eligible" under RPS, is now eligible under a "Waste Energy" subclass of RPS Class II; however, its eligibility is conditioned on Massachusetts recycling and other Massachusetts-specific regulatory criteria. Behind-the-Meter Units now can be qualified anywhere in ISO-NE (formerly in Massachusetts only), but with metering restrictions. Note that the term "New Renewable Generation Unit" used in this report was replaced in 2009 by "RPS Class I Generation Unit." The above does not describe all of the changes that have occurred; more can be found at the DOER/RPS website.

SUMMARY OF RPS COMPLIANCE IN 2008

The total supply of electricity from New Renewable Generation Units (represented by RECs) exceeded demand in 2008 for the second consecutive year, following the supply shortages of the previous four years of RPS, 2003-2006. The RPS obligation for 2008 for each Supplier was three and a half percent (3.5%) of its retail load obligation at the NEPOOL GIS. The total retail load obligation in 2008 was 50,321,635 MWh, for which the 3.5% RPS obligation was 1,761,271 MWh.[11] The total REC supply was 1,976,613 MWh, which consisted of 1,896,008 RECs from 2008 generation plus 80,605 MWh of surplus banked from 2006 and 2007. In addition, 1,208 MWh of obligation were met through Alternative Compliance Payments made by three Suppliers that were individually short of RECs (see below). The resulting total of 1,977,821 MWh yielded a surplus of 216,550 MWh, of which 210,580 MWh were eligible to be banked for compliance use in 2009 and 2010. See Table 2 for a comparison of these figures with those of previous years.

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[8] The Regulations for RPS, at 225 CMR 14.00, are available via the DOER homepage, http://www.mass.gov/doer. A direct link is not provided in this report because the Regulations are currently being revised in a public rulemaking process under M.G.L. Chapter 30A. See footnote 9.

[9] DOER is currently engaged in revising the RPS regulations pursuant to RPS-related provisions of Green Communities Act of 2008, which is available at www.mass.gov/legis/laws/seslaw08/sl080169.htm. DOER's actions pursuant to the Act can be accessed via the DOER homepage at www.mass.gov/doer.

[10] Still more changes are found in the more recent Emergency Regulation for RPS Class I, the subject of a formal public rulemaking in the first half of 2010, which mainly adds new provisions to implement the Solar Carve-Out, effective January 1, 2010, pursuant to the 2008 Green Communities Act.

[11] Compliance is calculated separately for each Supplier, with fractions always rounded upwards. The figure given here is the total of those individual obligations, which is slightly higher than 3.5% of 50,321,635 MWh.

The Massachusetts RPS has a flexibility provision under which a Supplier can "bank" towards its RPS compliance in the next year or two a quantity of RECs that does not exceed 30% of its RPS obligation in the year when the RECs were generated.[12] Given a REC surplus in 2008 and low REC prices during the 2008 REC trading year, 21 of the 26 Suppliers acquired more RECs than they needed for 2008 compliance, possibly as a hedge against any anticipated or potential supply shortages and price increases for RECs in 2009 or 2010. It is also possible that some Suppliers anticipated a need for more RECs in 2008 than proved to be required to cover their obligations.

While most of the Suppliers acquired surplus RECs for banking forward, three Suppliers were short of RECs and had to meet a portion of their compliance obligations by making Alternative Compliance Payments (ACPs) to the Massachusetts Technology Collaborative.[13] Two of the three were small, and one of those two was new to the RPS. Each of the two small Suppliers met more than 5% their obligations with ACPs, while the third, much larger Supplier met less than 1% of its obligation with an ACP. The ACPs in 2008 totaled only 1,208 MWh, which cost $70,764.64 at a rate of $58.58 per MWh – much less than 2007's 10,920 MWh of ACPs, which cost $623,750.40.[14]

The supply of RECs from New Renewable Generation in Massachusetts continued a slow, but steady annual increase. However, the rate of that increase was below the overall rate of increase for the northeast region as a whole, mostly from New York and Quebec. As a result, the *percentage* of total REC supply coming from in-state projects continued to decline. This percentage decline is part of a larger trend in which the supply of electricity and RECs from New Renewable Generation *outside* of the ISO-NE control area (the New England grid) continued to increase at a faster rate than those from within ISO-NE. However, all figures regarding the quantities and percentages of RECs from different jurisdictions must be understood in the context of a regional RPS market in which most, but not all, RECs can be used for RPS compliance in multiple New England states, as well as in the context of a regional surplus of RECs. Thus, many more RECs are actually created than are reflected in the MA 2008 RPS Compliance Filings. RECs that were not used for MA RPS presumably were used for RPS compliance in other states, were used for voluntary "green product" sales, or went unsold by the generators.

DETAILS OF THE QUANTITY AND MANNER OF RPS COMPLIANCE IN 2008

DOER received filings from 26 Retail Electricity Suppliers, entities that served retail load in Massachusetts during 2008. These included four investor-owned, distribution companies that are regulated by the Massachusetts Department of Public Utilities (DPU) and twenty-two competitive

[12] For example, if a Supplier had a 2008 Massachusetts retail load obligation of one million MWh, then its 3.5% RPS obligation would be 35,000 MWh, and, if it acquired more RECs than it needed to meet the RPS obligation, it could bank up to 10,500 MWh (30% of 35,000 MWh) of 2008 RECs to use towards its RPS obligations in 2009 and 2010.

[13] See the RPS Regulations at 225 CMR 14.08(3) regarding the procedures for ACP and the use of ACP funds. Note that, as of 2009, with the 2008 Green Communities Act's transfer of the Massachusetts Renewable Energy Trust from the Massachusetts Technology Collaborative (MTC) to the Massachusetts Clean Energy Center (CEC), ACPs are remitted to the CEC instead of the MTC.

[14] The announcement and calculation of the annual ACP rate can be accessed at the RPS News and Timeline page via the RPS page, via the Renewable Energy page, via the DOER homepage at www.mass.gov/doer.

suppliers that are licensed, but not regulated by the DPU. [15] In Table One, five competitive suppliers new to the Massachusetts RPS market are listed in italics.

Table One
2008 Massachusetts Retail Electricity Suppliers

Distribution Utilities	
Fitchburg Gas & Electric Co., d/b/a Unitil	NSTAR Electric Co.
Massachusetts and Nantucket Electric Companies, d/b/a National Grid	Western Massachusetts Electric Co.
Competitive Suppliers[16]	
Consolidated Edison Solutions, Inc.	Horizon Power and Light LLC
Constellation NewEnergy, Inc.	Integrys Energy Services, Inc.[17]
Direct Energy Business, LLC[18]	*Liberty Power Holdings*
Direct Energy Services, LLC	MXenergy Electric, Inc.
Dominion Retail, Inc.	Pepco Energy Services, Inc.
Easy Energy of MA	Sempra Energy Solutions LLC
Gexa Energy, LLC	*South Jersey Energy*[19]
Glacial Energy of Massachusetts, Inc.	Spark Energy, LP
Hampshire Council of Governments	Suez Energy Resources NA, Inc.
Harvard Dedicated Energy, Ltd.	TransCanada Power Marketing Ltd.
Hess Corporation	*WFM Intermediary NE Energy*

All of the Suppliers complied with their RPS obligations, with about 99.9% of the compliance met by New Renewable Generation, and nearly all of the compliance (94.4%) being from 2008 generation, as opposed to using RECs banked from 2007 compliance surplus (4.6%). Only one tenth of one percent (0.1%) of the 2008 compliance obligation was met using the Alternative Compliance mechanism, that is, by making Alternative Compliance Payments (ACPs) to the Massachusetts Technology Collaborative (MTC).[20] The 2008 ACPs totaled only $70,764.64 (1,208 MWh at $58.58/MWh). About 11% of the RECs from 2008 generation were qualified to be banked forward for use towards RPS Compliance in 2009 or 2010; the comparable figure in 2007 was about 5%.

[15] Regulated distribution utilities provide electricity under "Basic Service" to those customers in their franchise territories who do not purchase electricity from competitive suppliers. Competitive suppliers compete for and supply electricity to retail customers in any or all of the distribution utility territories.

[16] Two of the suppliers listed in 2007 are not listed in 2008: Mirant Energy Trading, LLC, and Freedom Partners, LLC (d.b.a. Freedom Energy, LLC). In addition, Strategic Energy LLC became part of Direct Energy Business, which is related to Direct Energy Services, and WPS became part of Integrys Energy Services.

[17] Integrys Energy Services includes the former WPS.

[18] Direct Energy Business includes Energy America and the former Strategic Energy LLC.

[19] South Jersey Energy is listed as Emera in the NEPOOL GIS and as Halifax American Corporation in the MA DPU list of licensed retail suppliers.

[20] See footnote 13 regarding the ACP mechanism.

The detailed compliance figures for all six of the RPS compliance years are in Table Two, with more detail for 2008 in Appendix Two. The changes in compliance during the first six years of the program, 2003-08, are illustrated in Figure One. Note that in 2002, when New Renewable Generation Units first became RPS qualified, Suppliers could purchase the RECs from those Units to bank for use in 2003, the first year of RPS compliance obligation. Those "Early Compliance" RECs jump-started the program when the financial incentives of RPS had not yet resulted in a sufficient supply of RECs. The initial shortage of qualified generation and RECs is evident in the high reliance on ACPs during 2004-06, a trend that was reversed in 2007. The RPS obligation clearly has demonstrated its success in providing incentive for accelerated development of New Renewable Generation Units during the seven years (through mid-2009) since the original RPS regulations were promulgated in April of 2002.

Table Two
Aggregated Information from the RPS
Annual Compliance Filings, 2003-2008 (MWh)[21]

	2008	***2007***	***2006***	***2005***	***2004***	***2003***
CY Retail Sales (load obligation) [22]	**50,321,635**	*50,978,101*	*50,143,130*	*51,558,778*	*50,063,092*	*49,834,324*
CY calculated RPS Obligation[23]	**1,761,257**	*1,529,343*	*1,253,578*	*1,031,176*	*750,946*	*498,343*
Total RECs from CY Generation	**1,896,008**	*1,599,533*	*938,772*	*644,849*	*444,680*	*304,112*
***minus* CY total surplus RECs**	**(216,550)**	*(87,957)*	*(9,458)*	*(739)*	*(20,297)*	*(60,837)*
Net CY RECs for CY Obligation	**1,679,458**	*1,511,576*	*929,314*	*644,110*	*424,383*	*243,275*
***plus* banked from pre-CY surpluses**[24]	**80,605**	*6,863*	*1,661*	*19,531*	*61,147*	*255,069*
Total RECs used for CY Obligation	**1,760,063**	*1,518,439*	*930,975*	*663,641*	*485,530*	*498,344*
***plus* total ACP credits**	**1,208**	*10,920*	*322,625*	*367,858*	*265,424*	*181*
Total for Compliance Obligation	**1,761,271**	*1,529,359*	*1,253,600*	*1,031,499*	*750,954*	*498,525*
Surplus Attributes banked forward[25]	**210,580**	*80,743*	*9,458*	*739*	*20,297*	*61,314*
ACP proceeds (rounded)	**$70,765**	*$623,750*	*$17,786,316*	*$19,566,367*	*$13,645,448*	*$9,056*

[21] Note that this table is arranged differently from the equivalent table in the previous annual compliance reports. CY is the abbreviation for Compliance Year, which is coterminous with a calendar year. Also, note that these are aggregated figures. However, compliance is calculated separately for each Supplier, with fractions always rounded upwards. Therefore, the "CY calculated RPS Obligation" is always less than the "Total for Compliance Obligation."

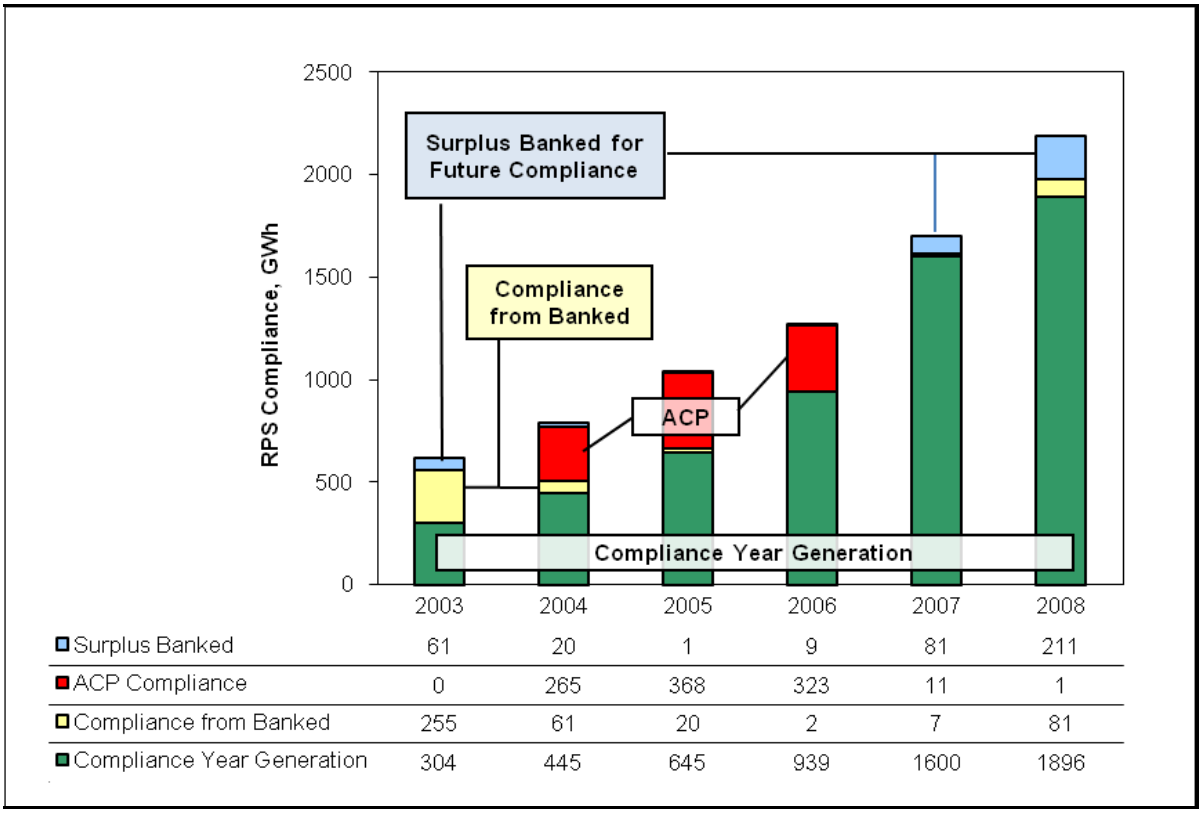
[22] DOER requires that each supplier use as its "retail electricity sales" the quantity of its "load obligation" assigned at the NEPOOL GIS (see Part 4 of the NEPOOL GIS Operating Rules, available via https://www.nepoolgis.com/). For additional detail, see the *Guideline for Retail Electricity Suppliers on the Determination of Sales to End-use Customers for Calculating the Annual RPS Obligation*, at http://www.mass.gov/doer/rps/rps-compliance-guideline.pdf. (Note that the figure for 2007 on this row was corrected on 12/1/08.)

[23] The RPS Minimum Standard obligation for each of the CYs 2003 through 2008 were, respectively, 1%, 1.5%, 2%, 2.5%, 3%, and 3.5%.

[24] RECs for RPS qualified New Renewable Generation from 2002, were "banked" by some Retail Suppliers to use for 2003 compliance under the "Early Compliance" provision of the 2002 regulation at 225 CMR 14.08(2) and 14.09(2).

[25] The large differences in 2007 and 2008 between the quantity of surplus RECs and the quantity banked is due to some Suppliers having purchased more RECs than the limit that they were permitted to bank. A Supplier cannot bank a quantity of RECs that is greater than 30% of its total RPS compliance obligation for the year in which those RECs were generated.

Figure One
RPS Compliance, 2003-2008



	2003	2004	2005	2006	2007	2008
Surplus Banked	61	20	1	9	81	211
ACP Compliance	0	265	368	323	11	1
Compliance from Banked	255	61	20	2	7	81
Compliance Year Generation	304	445	645	939	1600	1896

GENERATION SOURCES FOR RPS COMPLIANCE IN 2008

Between 2007 and 2008, the supply of RECs for MA RPS compliance that was sourced from New Renewable Generation inside the ISO-NE control area essentially held steady. Meantime, the supply of RECs from electricity imported from New Renewable Generation Units outside of the ISO-NE control area increased by 59%, after more than doubling between 2006 and 2007. Import RECs increased from almost one third of the supply in 2007 to almost 44% in 2008. Within the import category, while imports from New York (landfill methane and wind) and from Canada (wind) were nearly equal in 2007, in 2008 about 62% of the imports came from New York.

The percentages of 2008 RECs from the qualified types of renewable resources are illustrated in the Figure Two, while the percentages of 2008 RECs from the six New England states, New York, and the adjacent Canadian provinces are illustrated in Figure Four. Note that a small portion of northern Maine ("NMISA") is outside of the New England grid and connects to ISO-NE via the New Brunswick control area; therefore, the output of NMISA generators must be imported to ISO-NE to earn RECs, as with all generation outside of and adjacent to ISO-NE. Figures Three and Five illustrate the six year trend of RECs, 2003-2008, by resource type and by location of the generation. Appendix Three has a pair of tables listing the data from which those four graphs were generated.

Figure Two
2008 RPS Compliance by Generator Type

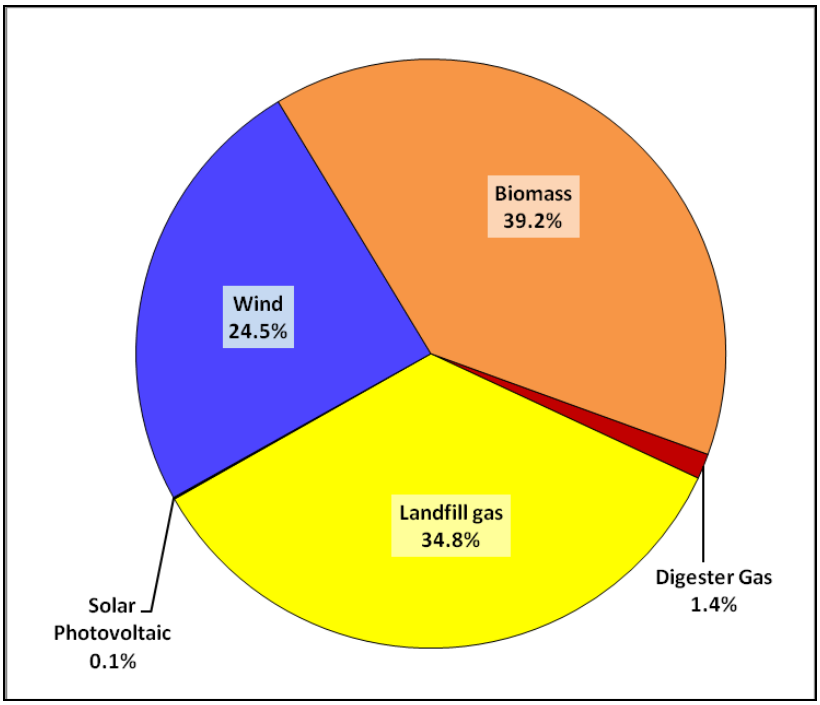


Figure Three
RPS Compliance by Generator Type, 2003-2008

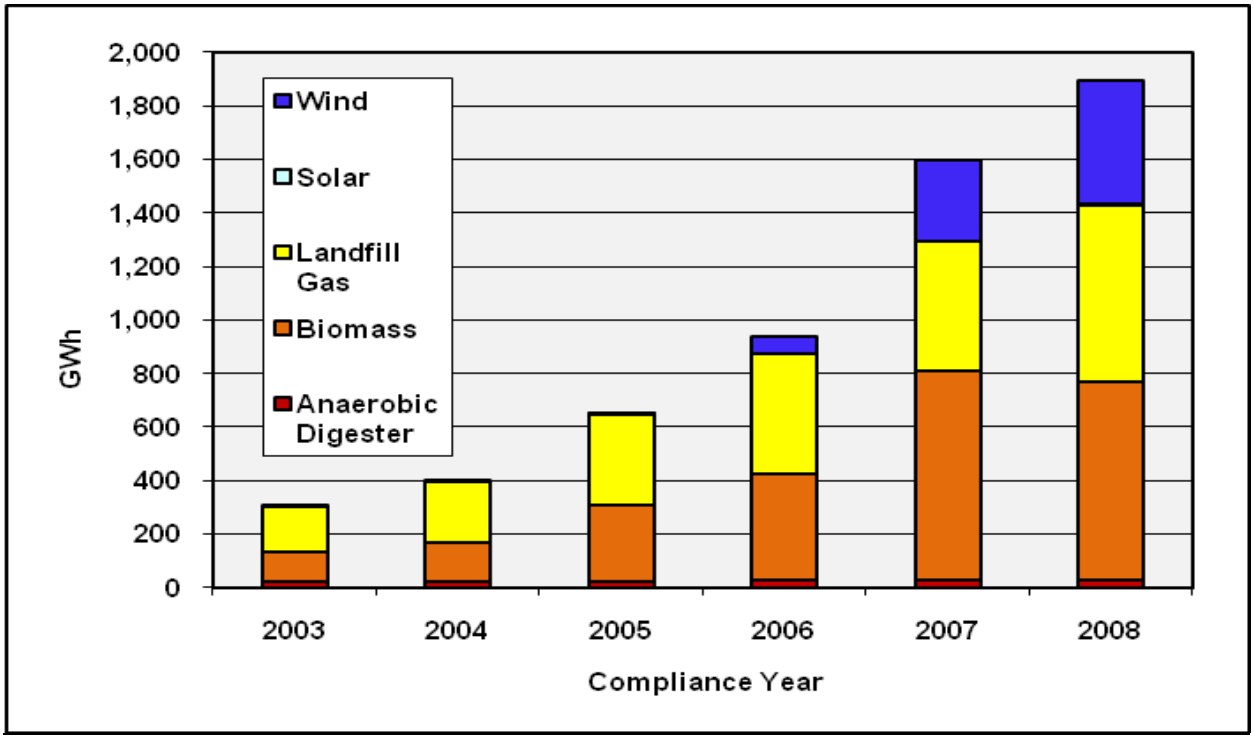


Figure Four
2008 RPS Compliance by Generator Location

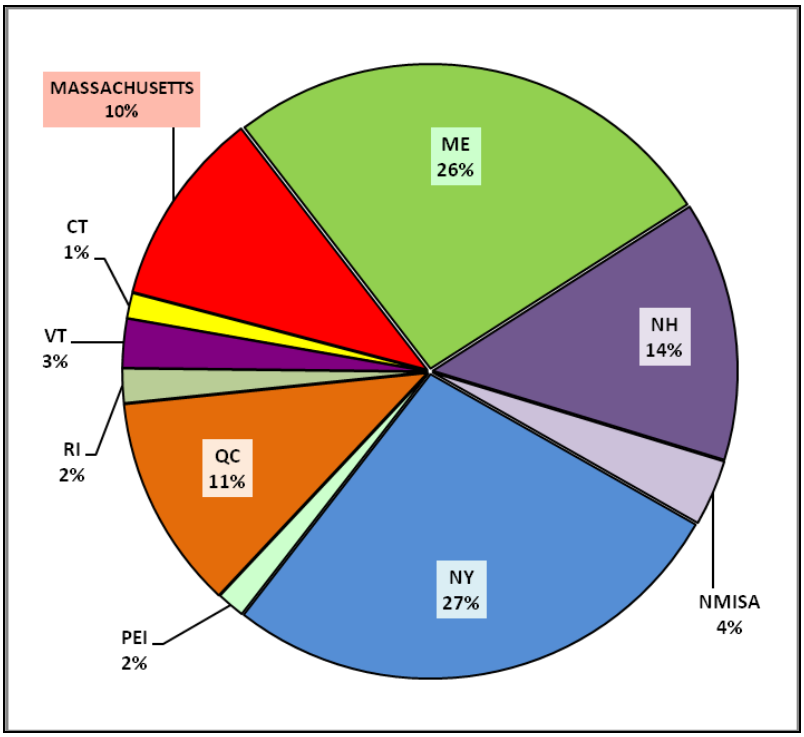
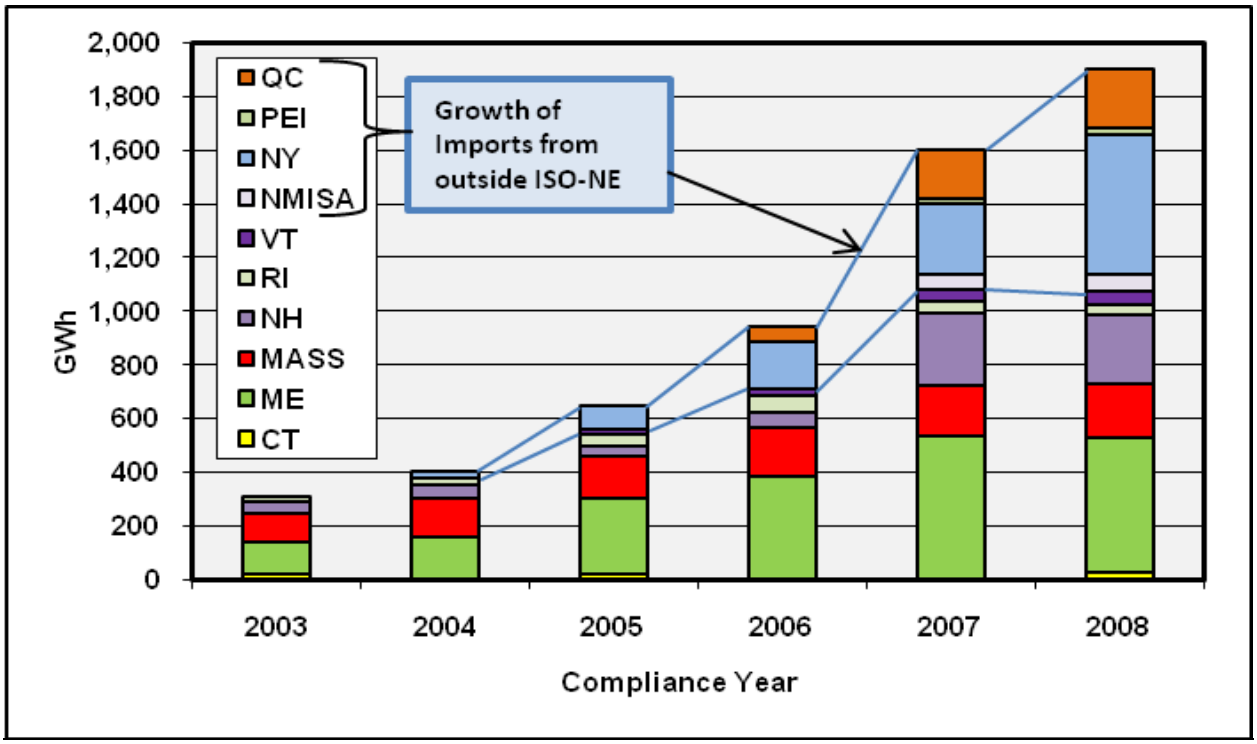


Figure Five
RPS Compliance by Generator Location, 2003-2008



Almost all of the biomass generation is located in Maine and New Hampshire. Biomass plant output increased substantially from year to year during 2003-2007 and overtook landfill methane in 2007 as the largest single resource type. In 2008, however, while landfill methane generation rose substantially, the growth in generation from biomass seems to have reversed, with two plants in Maine having stopped production; one of those plants has since resumed production, while the other has been decommissioned.

The bulk of landfill methane electricity output is from Massachusetts, Rhode Island, and New York, but with some landfill projects in each of the other New England states, too. Landfill output was increasing more slowly than that of biomass during 2003-2007 and, as noted above, was overtaken by biomass as the largest single source in 2008. However, a surge of energy from new landfill plants in New York entered the market in 2008 while energy from biomass declined. Even if landfill methane electricity generation overtakes that of biomass in 2009, DOER expects wind farm generation to overtake both of them.

Most of the wind RECs came from wind farms in "control areas" adjacent to the ISO-NE control area, namely New York, Quebec, and New Brunswick (including northern Maine [NMISA], Nova Scotia, and Prince Edward Island). RECs for non-ISO-NE resources are earned only on electricity imported into ISO-NE. Wind output has been increasing at an even higher rate than biomass since 2005, with the 2008 wind output being more than seven times that of 2006 and with wind increasing its share of the growing REC pie from 7% in 2006 to 19% in 2007 to 27% in 2008. Given the magnitude of the wind resource – in the mountains, on the New England coast, off the coasts of Massachusetts, Maine, and Rhode Island, and in the adjacent control areas – DOER expects wind to become the largest single source of renewable electricity in the very near future and eventually to improve the relative standing of Massachusetts as a source of New Renewable Generation and RECs for MA RPS.

Most of the anaerobic digester output is from the Deer Island Wastewater Treatment Plant near Boston, supplemented by very small, dairy farm manure-based units, mainly in northern Vermont; however, while RECs from the Vermont facilities have been little used for MA RPS compliance, anaerobic digester potential exists at additional wastewater treatment projects and at food handling facilities in Massachusetts and other states.

Solar photovoltaic arrays, all of them in Massachusetts, provide a small but growing quantity of RECs for MA RPS; that growth will accelerate rapidly from 2009 onward, propelled by focused federal stimulus funding since 2009 and by the RPS Class I Solar Carve-Out launched in January 2010.

PROJECTION OF FUTURE RPS COMPLIANCE OBLIGATIONS AND SUPPLY

DOER has projected the future RPS compliance obligation, based on "customer migration" data, which all Massachusetts Suppliers submit monthly to DOER, and adjusted in accordance with the Commonwealth's mandates for energy efficiency under the Green Communities Act of 2008.[26] The RPS minimum percentage obligation increases as specified in the statute and regulations,[27] with that increase changing from one half percent annually through 2009 to one percent annually thereafter, in accordance with the new RPS mandate of the Green Communities Act, Section 32. Table Three lists both the actual (2003-08) and projected (2009-2015) total retail sales – as load obligation[28] – and the

[26] See footnote 9 for a link to the Green Communities Act.

[27] The minimum percentages for RPS compliance are in the regulations at 225 CMR 14.07(1).

[28] See explanation and reference in footnote 22 regarding the use of "load obligation" for "retail sales."

resulting actual and projected RPS obligation. Please note that, although ISO-NE projects annual sales, the Commonwealth's projected load obligation is adjusted to reflect additional energy efficiency savings under the utilities' three year plans. DOER expects electricity sales to begin decreasing in 2011 to "meet at least 25 per cent of the Commonwealth's electric load . . . by the year 2020 with demand side resources", as stated in Section 116 of the Green Communities Act. Others can, of course, calculate projected RPS obligations based on their own load growth assumptions. This table provides figures only through 2015, although the annually increasing RPS obligation continues indefinitely.

Table Three

MA RPS Annual Compliance Obligations
Actual (2003-2008) & Projected (2009-2015)[29]

Year	Actual/*Projected* Load Obligation, MWh	RPS % Obligation	RPS MWh Obligation
2003	49,834,324	1.0%	498,343
2004	50,063,092	1.5%	750,954
2005	51,558,778	2.0%	1,031,176
2006	50,143,130	2.5%	1,253,578
2007	50,978,101	3.0%	1,529,343
2008	50,321,635	3.5%	1,761,257
2009	*48,848,286*	4.0%	*1,953,931*
2010	*49,706,924*	5.0%	*2,485,346*
2011	*49,137,353*	6.0%	*2,948,241*
2012	*48,216,227*	7.0%	*3,375,136*
2013	*47,076,729*	8.0%	*3,766,138*
2014	*46,482,120*	9.0%	*4,183,391*
2015	*45,792,532*	10.0%	*4,579,253*

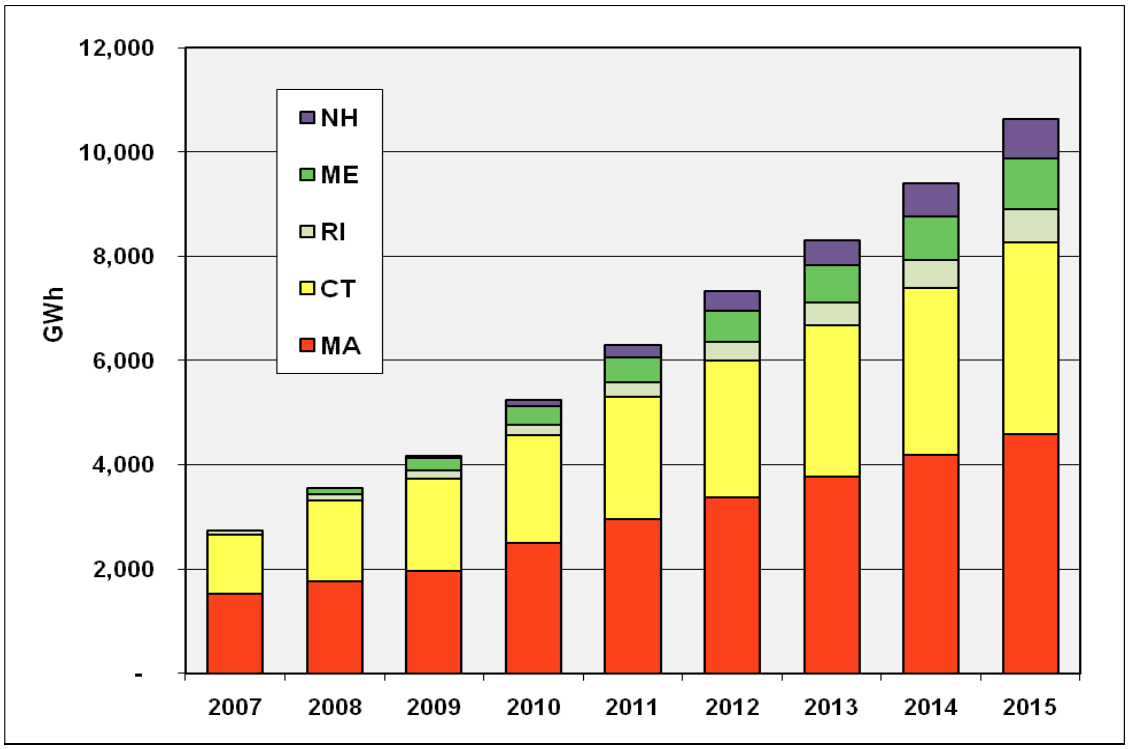
Figure Six shows DOER's projection for the growth in demand for "premium" RECs by the RPS mandates of the five New England states that have similar, albeit not identical, mandates for new renewable energy generation. Those mandates consist of the CT RPS Class I, the ME RPS, the NH RPS Classes I and II, and the mandate for new facilities in the RI Renewable Energy Standard.[30] For Massachusetts, the graph uses the same figures as in Table Three. For the other four states, the figures are based on ISO-NE load growth projections from the 2010 CELT Report.[31]

[29] The actual figures for 2003 through 2008 are from RPS annual compliance filings. The 2009 load obligation is based on DOER's Electric Customer Migration Data (available on-line via www.mass.gov/doer/), adjusted by adding 6% for line losses. The projections starting in 2010 are adjusted to reflect additional energy efficiency savings from three year plans and continuation of savings levels beyond 2012, again with 6% line losses added. Note that the projected sales increase from 2009 to 2010 is driven by some recovery from the depressive effects of the economy and the weather.

[30] Details on the other programs are available via http://www.dsireusa.org/library/includes/type.cfm?EE=1&RE=1.

[31] The ISO-NE figures are from Tab 2, column R in the 2010 CELT Report at http://iso-ne.com/trans/celt/fsct_detail/2010/isone_fcst_data_2010.xls.

Figure Six
New England RPS Obligation Growth by State,
Actual (2003-2008) & Projected (2009-2015)



Projection of future REC supply is particularly difficult at this time for various reasons. Much of the uncertainty derives from forces external to the program itself, especially from the prospects of changing renewable energy and climate policies at the federal level, including the uncertain future of additional federal stimulus funding, and continued, looming uncertainties in the national and global economies.

Some uncertainty also comes from changes within the RPS program itself. The RPS regulations recently have undergone significant revisions pursuant to several sections of the Green Communities Act of 2008,[32] including expansion in the types of resources that are eligible as RPS Class I and Class II Renewable Generation. Approval of the Cape Wind project portends a major boost in the future in-state supply of RECs, but the detailed impact of that supply over the next several years will depend on the actual timetable of construction. Finally, DOER has recently announced that significant changes in the eligibility of woody biomass will be the subject of a rulemaking in the second half of 2010.

[32] See footnote 9.

APPENDIX ONE

RPS 2008 Compliance Filings, Review, and Verification

All Suppliers that sold retail electricity to end-use customers in the territories of the four Massachusetts regulated utilities during 2008 were required to file their Annual Compliance Filings for 2008 by July 1, 2009. DOER issued forms and instructions for the Filings on June 10th, five days before the end of the NEPOOL GIS trading period for the fourth quarter of 2008. By July 2nd DOER had received Filings from all four of the regulated utility companies and from all but one of the twenty-one competitive Suppliers of which DOER had knowledge; the last one was received on July 3rd. However, DOER learned during July that one additional competitive Supplier had begun serving retail load in Massachusetts during 2008; that entity had never contacted DOER, had not received the Filing forms and instructions, although DOER had announced their availability at the NEPOOL-GIS homepage[33], and had not submitted a Filing. DOER immediately located and contacted that entity, informed it of its obligation, and received its Filing in early August.

Due to the staffing obligations at DOER, serious review of the Filings did not commence until early in 2010. The review encompassed both printed and electronic copies of Filers' compliance summary tables and GIS spreadsheet reports. The electronic files enabled DOER to aggregate, analyze, and summarize the information in the Filings, while the printed versions of GIS reports were used to verify the electronic versions of those reports. DOER contacted Suppliers for correction of mathematical errors and for some additional information, explanations, and clarifications.

Although the Filings continued to show improvement over the previous years, some competitive Suppliers *still* did not correctly assign "load" in their GIS sub-accounts. Therefore, in order to verify the figures provided in their Filings, DOER has continued to rely on data submitted on a confidential basis by the regulated utilities.

Aside from the belated discovery of one additional Supplier and the substantial delay due to DOER staffing obligations, the 2008 Filings were submitted, reviewed, supplemented, corrected, clarified, and accepted smoothly. DOER has increased RPS staffing, in part to ensure efficient administration of the expanded RPS programs. Consequently, DOER expects no repeat of the 2008 Filings' greatly delayed review and reporting.

[33] See www.nepoolgis.com.

APPENDIX TWO[34]
2008 RPS Compliance Summary

	RETAIL SALES	NEW RENEWABLE ENERGY ATTRIBUTES[35]					CY 2008 3.5% RPS OBLIGATION	BANKING FOR FUTURE COMPLIANCE		
RETAIL ELECTRICITY SUPPLIERS	Load Obligation from Filing	2008 MA RECs	2006 Banked Attributes	2007 Banked Attributes	Alternative Compliance Credits	Total RPS Attributes		Excess Attributes	Banking Limit (30%)	Banked Attributes
DISTRIBUTION COMPANIES										
Fitchburg Gas & Electric (Unitil)	265,122	12,000	0	0	0	12,000	9,280	2,720	2,784	2,720
National Grid	13,089,784	458,839	0	2,288	0	461,127	458,143	2,984	137,443	2,984
NSTAR	10,062,660	384,826	0	0	0	384,826	352,194	32,632	105,659	32,632
W Mass Electric (NU)	2,097,309	78,248	0	2	0	78,250	73,406	4,844	22,022	4,844
SUBTOTALS	**25,514,875**	**933,913**	**0**	**2,290**	**0**	**936,203**	**893,023**	**43,180**	**267,908**	**43,180**
COMPETITIVE SUPPLIERS										
Consolidated Edison Solutions										
Constellation New Energy										
Direct Energy Business										
Direct Energy Services										
Dominion Retail										
Easy Energy of Mass.										
Gexa Energy										
Glacial Energy of Mass.										
Hampshire Council of Governments										
Harvard Dedicated Energy										
Hess Corporation										
Horizon Power & Light										
Integrys Energy Services										
Liberty Power Holdings										
MXenergy Electric										
Pepco Energy Services										
Sempra Energy Solutions										
South Jersey Energy										
Spark Energy										
Suez Energy Resources										
TransCanada Power Marketing										
WFM Intermediary NE Energy										
SUBTOTALS	**24,806,760**	**962,095**	**2,611**	**75,704**	**1,208**	**1,041,618**	**868,248**	**173,370**	**260,485**	**167,400**
TOTALS	**50,321,635**	**1,896,008**	**2,611**	**77,994**	**1,208**	**1,977,821**	**1,761,271**	**216,550**	**528,393**	**210,580**
	MWh	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**

[34] All data for the competitive suppliers is aggregated here in accordance with the provision for confidentiality of product-specific data in the RPS Regulation, 225 CMR 14.09(2)(b). Data for the regulated distribution utility companies is made public in filings at the MA Department of Public Utilities.

[35] "New Renewable Energy Attributes" are represented by RECs, by quantities of banked surplus RECs (but not the RECs themselves), and by Alternative Compliance Credits based on Alternative Compliance Payments..

APPENDIX THREE
Data Tables for RPS Compliance by Generator Type and Location

The two tables below provide the data from which the graphs in Figures Two through Five were generated.

Table A
RPS Compliance by Generation Type, 2003-2008

Year	2003	2004	2005	2006	2007	2008	2008
Type	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**%**
Anaerobic Digester	24,571	20,662	23,710	27,115	27,511	**26,328**	**1.4**
Biomass	108,106	146,228	285,289	395,856	782,315	**743,882**	**39.2**
Landfill Gas	171,025	230,553	335,151	449,633	486,558	**660,937**	**34.8**
Solar	0	0	6	216	803	**1,799**	**0.1**
Wind	533	4,000	693	65,952	302,346	**463,865**	**24.5**
Totals	**304,235**	**401,443**	**644,849**	**938,772**	**1,599,533**	**1,896,811**	**100.0**

Table B
RPS Compliance by Generation Location, 2003-2008

Year	2003	2004	2005	2006	2007	2008	2008
Location	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**MWh**	**%**
Massachusetts	108,106	146,228	157,022	184,777	192,200	**197,949**	**10.4**
Connecticut	15,209	13,810	14,353	13,204	10,180	**25,333**	**1.3**
Maine	122,958	142,715	285,289	367,298	520,821	**500,479**	**26.4**
New Hampshire	42,845	45,800	40,677	53,556	265,062	**261,468**	**13.8**
Rhode Island	15,117	26,521	42,659	62,230	42,562	**34,848**	**1.8**
Vermont	0	0	14,476	26,595	46,915	**49,207**	**2.6**
Northern Maine ISA	0	0	0	455	54,079	**66,418**	**3.5**
New York	0	26,369	90,373	175,961	265,299	**517,427**	**27.3**
Prince Edward Island	0	0	0	0	16,922	**28,111**	**1.5**
Quebec	0	0	0	54,696	85,493	**215,835**	**11.4**
Total	**304,235**	**401,443**	**644,849**	**938,772**	**1,599,533**	**1,896,811**	**100.0**

APPENDIX FOUR

MA RPS Qualified New Renewable Generation Units

The data that was presented in the last Appendix of each of the previous reports has been omitted from this report. Beginning in the summer of 2010, these data will be presented at the DOER/RPS website in downloadable spreadsheets with additional useful information, including RPS qualification and commercial start dates, GIS labels, and participation in the RPS of each Compliance Year. The spreadsheets will be updated at regular intervals to include new RPS Class I and Class II Renewable Generation Units, as well as APS Alternative Energy Units, as they become qualified and begin operation. Thus, the data will be more timely and capable of sorting, which will make the data more readily accessible and more useful. These spreadsheets, which have already been posted in an initial version (with some columns yet to be added), replace the heretofore HTML-formatted tables.