EVALUATION OF THE MASSACHUSETTS RPS CLASS II PROGRAM

MARKET ANALYSIS, RELIANCE ON ACP MECHANISM, AND POLICY RECOMMENDATIONS

Report to the Legislature

Executive Office of Energy and Environmental Affairs
Department of Energy Resources[1]

December 31, 2012

PREAMBLE

In July 2012, the Massachusetts Legislature passed, and in August 2012 Governor Patrick signed, S. 2395, "An Act Relative to Competitively Priced Electricity in the Commonwealth" (the 2012 Act). This legislation provides enhancements to Chapter 169 of the Acts of 2008, An Act Relative to Green Communities (the Green Communities Act) which established the Renewable Energy Portfolio Standard (RPS) Class II program to provide support for eligible existing (pre-1998) renewable energy generation and required the Department of Energy Resources (DOER) to promulgate necessary regulations for the program implementation. DOER promulgated 225 CMR 15.00 in January 2009 as an emergency regulation to commence the Class II compliance obligation in 2009, and then, as final regulation, in June 2009.

Recognizing the substantial dependency of the RPS Class II program on the Alternative Compliance Payment (ACP) Mechanism instead of qualified generation, the Legislature, in Section 45 of the 2012 Act, directed DOER to "study what legislative or regulatory steps would serve to reduce reliance on alternative compliance payments in meeting Class II renewable energy generating sources" and, furthermore, to submit the study to the Legislature by January 1, 2013.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Analysis of the Massachusetts RPS Class II program shows that over 70% of the compliance obligation in 2011 was met with ACP compliance. The objectives of the Class II program to maintain the existing (pre-1998) fleet of renewable energy generation and improve its environmental standards remain important to the Commonwealth. However, at this point, the program compliance obligation is not well balanced with the eligible supply. This report provides evaluation of the minimum standard of 3.6% established by DOER in 2008-2009, and discusses reasons that have contributed to the limited supply – including the environmental

[1] Sustainable Energy Advantage LLC (SEA) was contracted by DOER to provide expert review of this Report. SEA's comments are reflected in the report, but they were not asked to approve or endorse the analysis, conclusions, or recommendations.

standards for biomass and small hydro and a range of other economic conditions, including the interaction between New England RPS markets.

The first year of compliance for the Class II program was 2009. Since that time, 88 MW of Class II generation has been qualified for the RPS by DOER – small hydro (65 MW), landfill gas (17 MW), and wind (6 MW). Most of the existing landfill gas generation is currently qualified, as is the one vintage wind project. No biomass projects have qualified nor taken on the investments in emissions control to meet the regulatory requirements for NO_x and particulate matter (PM). As of August 2012, DOER has suspended woody biomass applications awaiting a rulemaking on greenhouse gas and sustainability criteria. Small hydro units slowly but steadily have been qualified, and remain the primary supply prospect for Class II generation.

In this study, DOER provides a range of policy options that could be considered to reduce reliance on ACP compliance. Mainly, these recommendations focus on the minimum standard and how it might be set to maintain a strong REC price necessary to support existing renewable generation, and without risking significant shortage again if supply remains short. DOER recommends moving forward with a 3-year forward schedule for the minimum standard, where an increasing standard is set over three years, and each year DOER determines by formula the standard for the third year out. The forward schedule would allow load serving entities, particularly competitive suppliers, to establish load contracts without risk to the suppliers' compliance costs.

REVIEW OF THE POLICY OBJECTIVES OF THE RPS CLASS II PROGRAM

The need to support the existing fleet of renewable energy generation units was considered as far back as the policy discussions and analyses leading to the 1998 Electric Restructuring Act that established the original RPS program for new renewable generation., Policy questions were raised about the economic threats that might diminish existing generation and the ability to maintain such generation in the electric mix at lower cost than new renewable generation. While the 1998 Act passed on providing support to existing generation units, the issue was revived leading up to the 2008 Green Communities Act, which then did establish the Class II tier to help maintain existing renewable energy generation.

DOER recognizes key objectives of the RPS Class II program, as envisioned by the Legislature: (1) reducing the attrition of existing renewable energy generation from the regional electric mix, recognizing that such attrition would be made up largely be additional fossil fuel (likely natural gas) generation; (2) creating incentive for environmental improvements to the existing fleet of generation units, particularly as it pertains to biomass and small hydro; and (3) minimizing ratepayer costs to maintain the existing generation.

It is important to recognize that these objectives can conflict with each other. For example, more rigorous environmental standards can reduce the feasibility of existing renewable units to qualify, and thereby increase the attrition of existing units due to existing economic conditions. Also, setting the ACP rate at a higher level may attract investment and additional units to qualify, but at an additional cost to ratepayers.

The specification and implementation of environmental standards consistent with the statutory language was left to DOER in its RPS Class II regulation. As discussed further in sections below, DOER remains confident in its existing requirements as well as its announced intent to further define greenhouse gas emission thresholds for biomass, but recognizes that these requirements have implications for policy options available to attract eligible generation and reduce the program's reliance on ACP payments.

EXISTING RENEWABLE ENERGY GENERATION IN NEW ENGLAND

Review of 2008/2009 Minimum Standard Determination and Regulatory Requirements

While working on setting the current Minimum Standard for RPS Class II in 2008, DOER received from ISO-New England, under a confidentiality agreement, aggregate generation data of the fleet of existing renewable energy facilities that met technology and size eligibility criteria, but did not reflect the facilities' prospects for meeting environmental thresholds. These data indicated a rather constant level of generation from regional biomass and hydro facilities. DOER used the data to establish the Minimum Standard of 3.6% based on Massachusetts "fair share" based on our approximately 40% (not including customers of municipal light districts) of the total New England load. The evaluation and determination was provided in a DOER report dated February 5, 2009.

Other New England states, in setting the Minimum Standard for a "maintenance tier," have set a value based on the "historical contribution" of existing renewables supplied to the state's load by the utilities prior to 1998. A 2000 summary report[2] estimated this historical contribution for Massachusetts from landfill gas, run-of-river hydro, and low emissions biomass to be 2.4%. Given the statutory constraints on hydro capacity set in the Green Communities Act and revised in the 2012 Act, a revised analysis would be necessary to determine the applicable historical contribution.

In establishing RPS Class II, the Green Communities Act stipulated that biomass units must also meet a Low Emissions criterion, and left to DOER to specify in regulation the applicable emission standards. In consultation with the MassDEP and input from stakeholders, DOER set such emissions limits for NO_x and PM equal to the emission limits previously established for Class I units. DOER believed the statute and the support offered by ratepayers through Class II Renewable Energy Credits were sufficiently compelling to require qualified biomass units to reduce their emissions and provide attributes consistent with other clean energy technologies. DOER recognized that existing biomass units would have needed to make significant investments in emissions controls to meet the low emission criteria, but believed such investment would be financially feasible given the additional REC revenue offered by the Class II program. However, due to a range of economic pressures, including more recent decreases in natural gas and electric prices as well as inherent uncertainties of REC markets, such investments in emissions controls have not materialized, resulting in no biomass units coming forward for qualification for the RPS Class II program.

[2] Massachusetts Renewable Portfolio Standard – Draft Report on Sales from Existing Renewable Energy Generating Sources, LaCapra Associates and Sustainable Energy Advantage LLC, May 16, 2000.

While small hydroelectric facilities have been slowly seeking qualification for the RPS Class II program, hydro capacity also remains far below the estimates offered by DOER in its 2008 analysis. Eligible facilities must meet low environmental impact standards per the enabling provision in the Green Communities Act, and, as in the RPS Class I program, DOER has implemented this requirement by requiring (with limited waiver abilities) certification by the independent Low Impact Hydropower Institute (LIHI). DOER believes this approach has worked well and is generally supported by the small hydro industry. DOER recognizes that certification takes time, requires a fee, and often investment in the facility. DOER further recognizes that these barriers may slow the pace of applications for the program. Uncertainty in REC markets and recent reductions in electric costs also make the investment to become LIHI certified more difficult for small hydro owners.

The setting of the Minimum Standard by DOER in 2008 assumed that over a reasonably short period of time the fair share of New England's existing renewable energy generation could economically and financially justify the investments necessary to meet the environmental and other standards established by DOER. DOER recognizes a set of factors that have contributed to unit owners not making these investments. These factors are relevant in considering policy options to reduce the reliance of Class II on ACP compliance.

- The investment cost is too high relative to the financial value of the REC revenue.
- Physical constraints at some units prohibit technical upgrades necessary.
- Electricity prices have fallen, making generation units less economical to run.
- Biomass fuel prices have seen increases.
- Regulatory risk to Class II due to on-going RPS Class I Biomass Rulemaking.
- REC market instabilities due to binary (high/low) price points.
- REC market instabilities due to interaction between New England RPS tiers.

Update on ISO-NE Generation Data

For the purpose of this study and to assess more recent trends, DOER requested from ISO-New England updated data on the generation of existing renewable energy units in the region through 2011. These data were provided to DOER in September 2012 and are based on a query consistent to that requested in 2008, with the exception of small hydro facilities for which units of capacity up to 7.5 MW were included (to reflect the change from 5 MW provided in the 2012 Act). These data were used to establish the trend from 2000 to 2011 of potential Class II renewable energy generation from the ISO-New England region. This trend is plotted by technology in Figure 1.

While such data are only available from ISO-New England, RPS Class II generation also can be qualified, if import provisions are met, from adjacent control areas that include New York and three eastern provinces in Canada. Importantly, DOER notes that the potential RPS Class II supply suggested in Figure 1 does not include this additional potential supply. Currently 12% (all landfill gas) of the qualified capacity in Class II is located in New York, and no capacity is located in Canada.

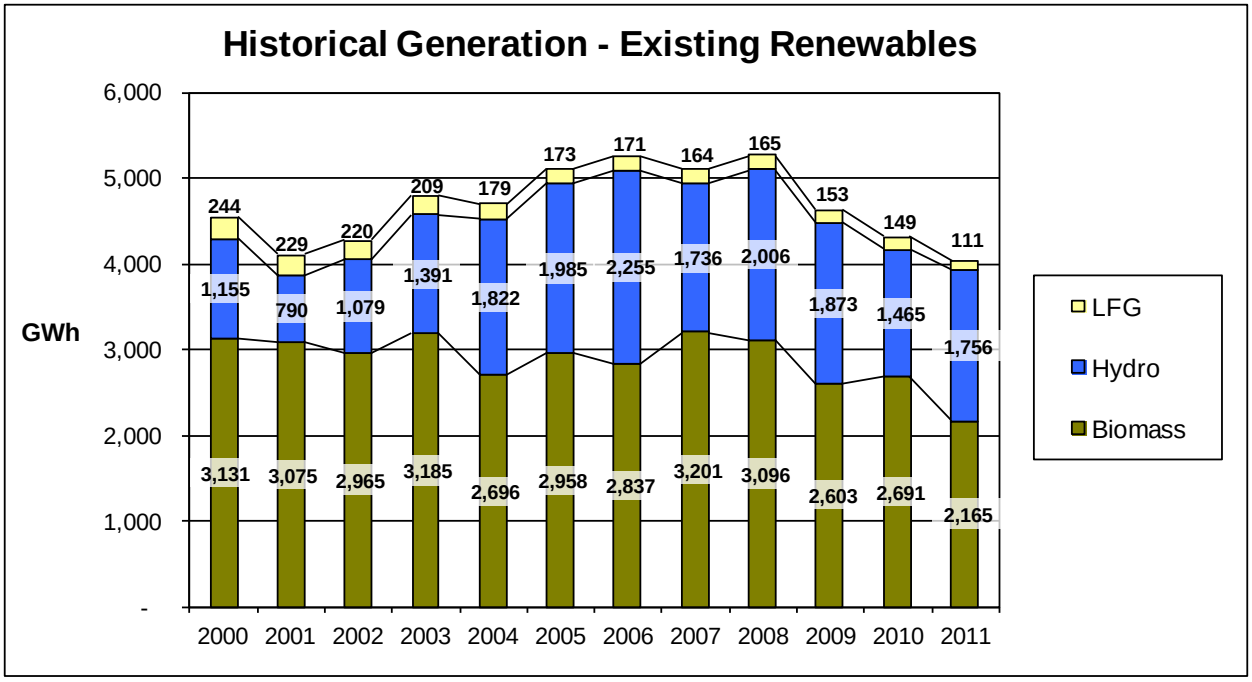

Figure 1. Historical Trend of Existing Renewable Generation 2000-2011 (from ISO-NE data)

Trends in Generation from Existing Renewable Resources

The data provided in Figure 1 indicate that while existing renewable generation had remained reasonably constant in the period leading up to 2009, more recent generation through 2011 has been on the decline – from 5267 MWh in 2008 to 4033 MWh in 2011, or 23%. This decline is attributable mainly to reduction in output from the fleet of existing biomass units in the region, which has fallen 30% (from 3096 MWh to 2165 MWh) over this time period. Small hydroelectric units have also experienced a decline in output over this timeframe, from 2006 MWh to 1756 MWh, or 12%. While small in absolute terms, the contribution to the region's generation from existing landfill gas units have also seen a decline from 165 MWh to 111 MWh, or 32%, likely in part due to the inevitable decline in methane gas capture from the decomposition of the wastes in the landfills.

Apart from the difficulty in qualifying for Massachusetts Class II RECs, many issues may be involved in the fall off of biomass generation from the existing fleet of facilities in the region. First, several plants have seen expiration of their PURPA long term contracts, which contracts have assured an above market rate for their electric output delivered to the grid. Second, wood prices have experienced upward pressure due to rising diesel fuel prices, a significant input cost for fuel harvesting and transportation. Third, electricity clearing prices have seen a decline over the recent years due to reduced natural gas prices. Lastly, REC prices in New England's existing tier markets where such units may be qualified have been unstable. All these factors, along with the barriers to qualification in the Massachusetts program, have made for a difficult market for wood biomass plants, resulting in either plant mothballing or curtailment of operation.

Qualification of Class II Facilities

Since the regulatory launch of the RPS Class II program in 2009, DOER has qualified 88 MW of projects. As shown in Figure 2, qualified units are predominately small hydro facilities (65 MW), followed by landfill gas (17 MW), and the one existing wind project (Searsburg Wind Power Facility in Vermont) at 6 MW. As discussed earlier, no biomass facility has sought or received qualification for the RPS Class II program; and as of August 2012, DOER has suspended woody biomass qualifications for Class II pending a rulemaking on greenhouse gas and sustainability criteria.

As displayed in Figure 2, hydroelectric facilities have slowly but steadily sought qualification from DOER and remain the only technology for which applications are now routinely received. The receipt of applications from landfill gas projects was significant in 2010 and early 2011, but have now more or less ceased. The price rebound in the Connecticut Class I market (for which existing landfill gas is also eligible) to well above the Massachusetts Class II price, has likely contributed to the fewer applications received by DOER.

As depicted in Figure 2, the capacity now qualified for the RPS Class II program is substantially short of the estimated capacity of 410 MW (assuming an average capacity factor of 50%) necessary to meet the current 3.6% Minimum Standard.

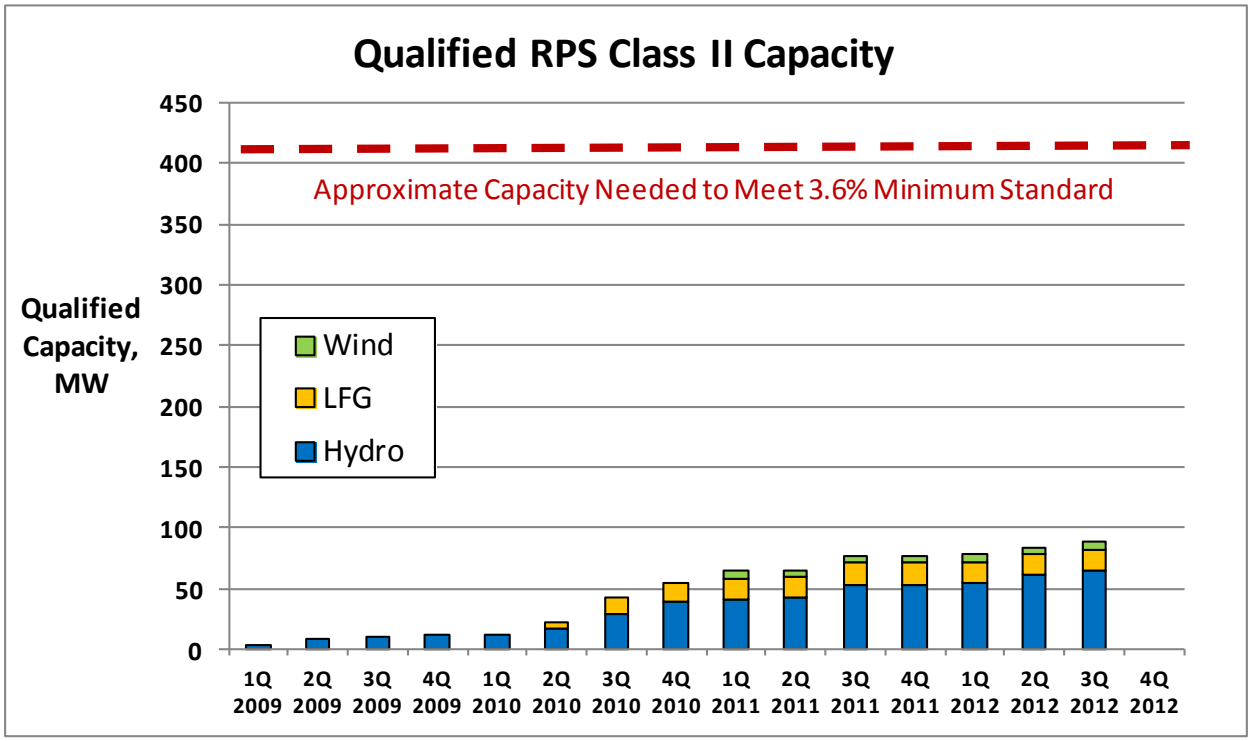

Figure 2. Qualification of RPS Class II Facilities by DOER

Class II REC Generation and Interactions among New England Markets

The generation of RPS Class II Renewable Energy Certificates (RECs) has increased from 35,543 MWh in 2009 to 318,034 MWh in 2011. However, not all of these RECs settle for compliance in the Massachusetts Class II market, as projects are often qualified for other New England RPS programs and sell their credits into the market that offer the best available price or through long term contract commitments. The eligibility of Massachusetts Class II technologies for the other New England REC markets is summarized in Table 1.

The table shows substantial overlap in eligibility criteria across states and technologies, and that the Massachusetts Class II market competes for Certificates that are generally valued higher in other markets, when those markets are undersupplied and hence exhibit prices near the applicable ACP rates.

The New England REC market interaction is evident in Figures 3a and 3b. While most Massachusetts RPS Class II Certificates generated have settled for compliance in Massachusetts, the amount and percent of certificates that have settle outside the state has grown significantly over the program's three years. This short history reflects the price recovery in the Connecticut Class I market and robust prices in the past few years in New Hampshire Class III.

Table 1. Comparison of New England RPS Maintenance Tiers

Massachusetts	Connecticut		New Hampshire		Rhode Island	Maine	
Class II	Class I	Class II	Class III	Class IV	Existing	Class I	Class II
2012 Target: 3.6%	9.0%	3%	6.5%	1%	<=2% of total	5%	30%
ACP Rate $26.28/MWh	$55/MWh	$55/MWh	$31.39/MWh	$31.39/MWh	$64.02/MWh	$64.02/MWh	N/A
Biomass Low Emissions NOx 0.065 lb/MMBtu PM 0.012 lb/MMBtu To be determined: GHG, forest sustainability and Overall Efficiency criteria.	No vintage restrictions. NOx 0.075 lb/MMBtu.	Operation date prior to 7/1/1998 and doesn't qualify for Class I. NOx 0.2 lb//MMBtu.	< 25 MW. Operation date prior to 2006. NOx ≤0.075 lb/MMBtu. PM ≤ 0.02 lbs/MMBtu.	N/A for Biomass	Operation date prior to 1998. Fuel source eligibility requirements.	<100 MW. Existing can qualify as new through refurbishment or beyond useful life provisions.	Operation date prior to 9/1/2005.
Landfill Gas (LFG)	No vintage	N/A for LFG	Operation date prior to 2006	N/A for LFG	Operation date prior to 1998.	<100 MW. Existing can qualify as new through refurbishment or beyond useful life provisions.	Operation date prior to 9/1/2005.
Small Hydro < 7.5 MW Low Environmental Impact (LIHI Certification).	Run of river. Operation date after 7/1/2003.	Run of river. < 5MW. Operation date prior to July 1, 2003	N/A for small hydro	< 5 MW. Operation date prior to 2006. FERC fish-passage requirements.	< 30 MW. Operation date prior to 1998.	< 100 MW. Existing can qualify as new through refurbishment or beyond useful life provisions. State and federal fish passage requirements.	Operation date prior to 9/1/2005.

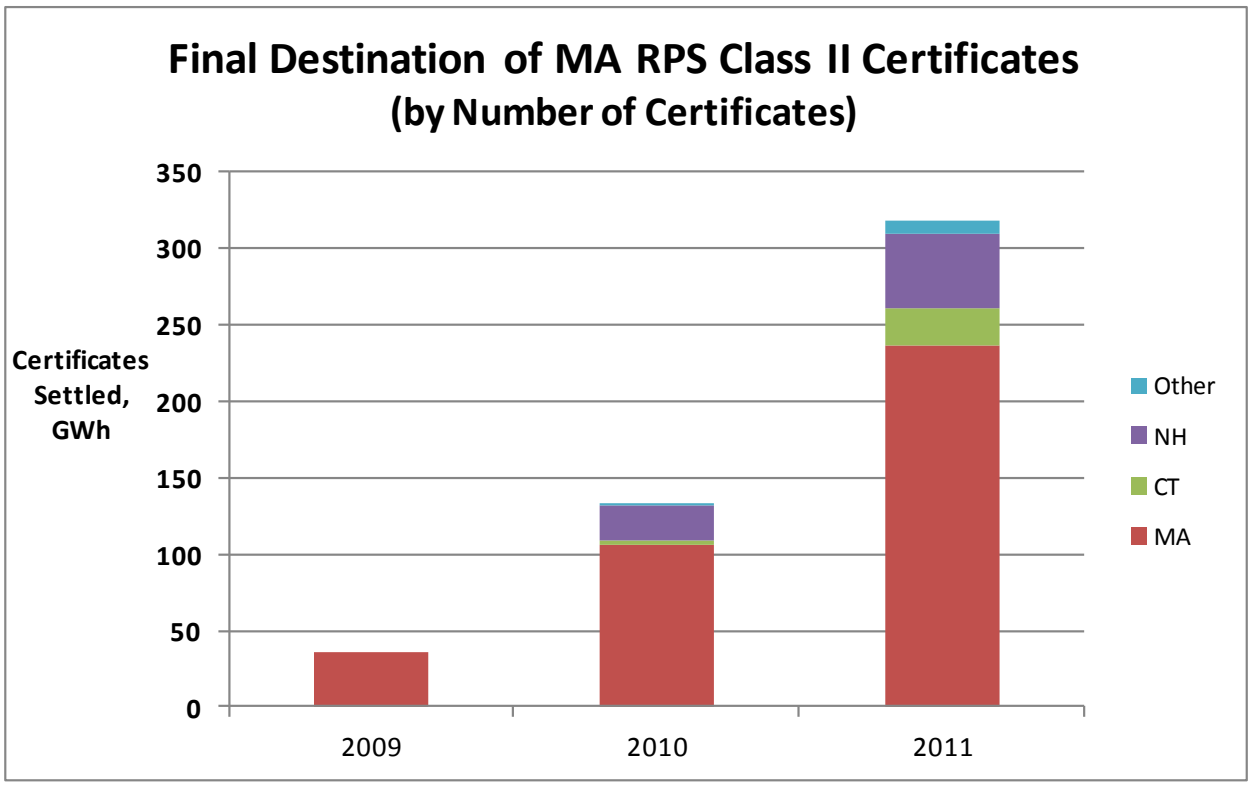

Figure 3a. Destination of RPS Class II Certificates in New England Markets

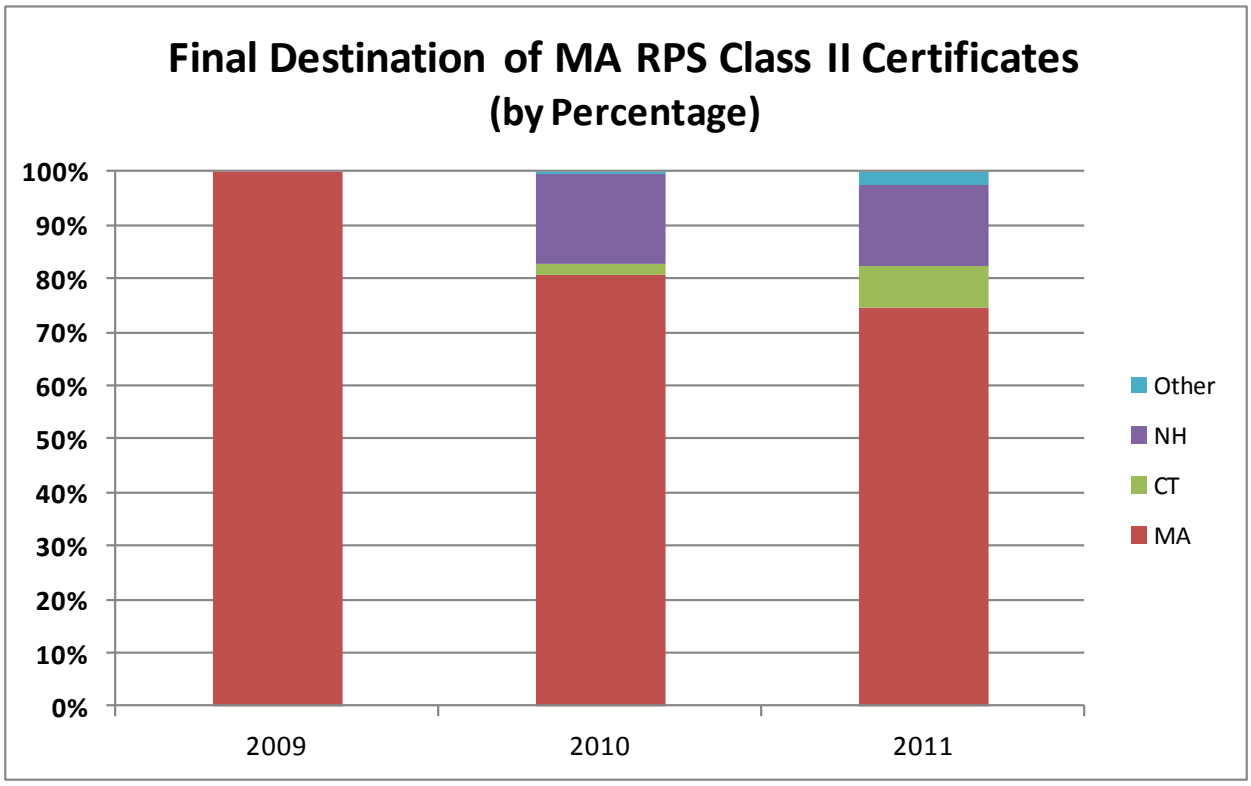

Figure 3b. Destination of RPS Class II Certificates in New England Markets (by percentage)

Class II Compliance Mechanism – Exempt Load and Reliance on ACP

As shown in Figure 4, the Class II market has had three years of heavy reliance on Alternative Compliance Payments. These ACP payments have amounted to $13.9 million in 2009, $35.0 million in 2010, and $35.9 million in 2011 compliance years. The amount of ACP funds was less in 2009 due to the large proportion of competitive supplier load exempt from compliance due to pre-existing contracts. These exempt loads decline rapidly over a few years. Between 2010 and 2011, a moderate increase in Class II generation was approximately equal to the added demand from the reduction of exempt load, and some load growth.

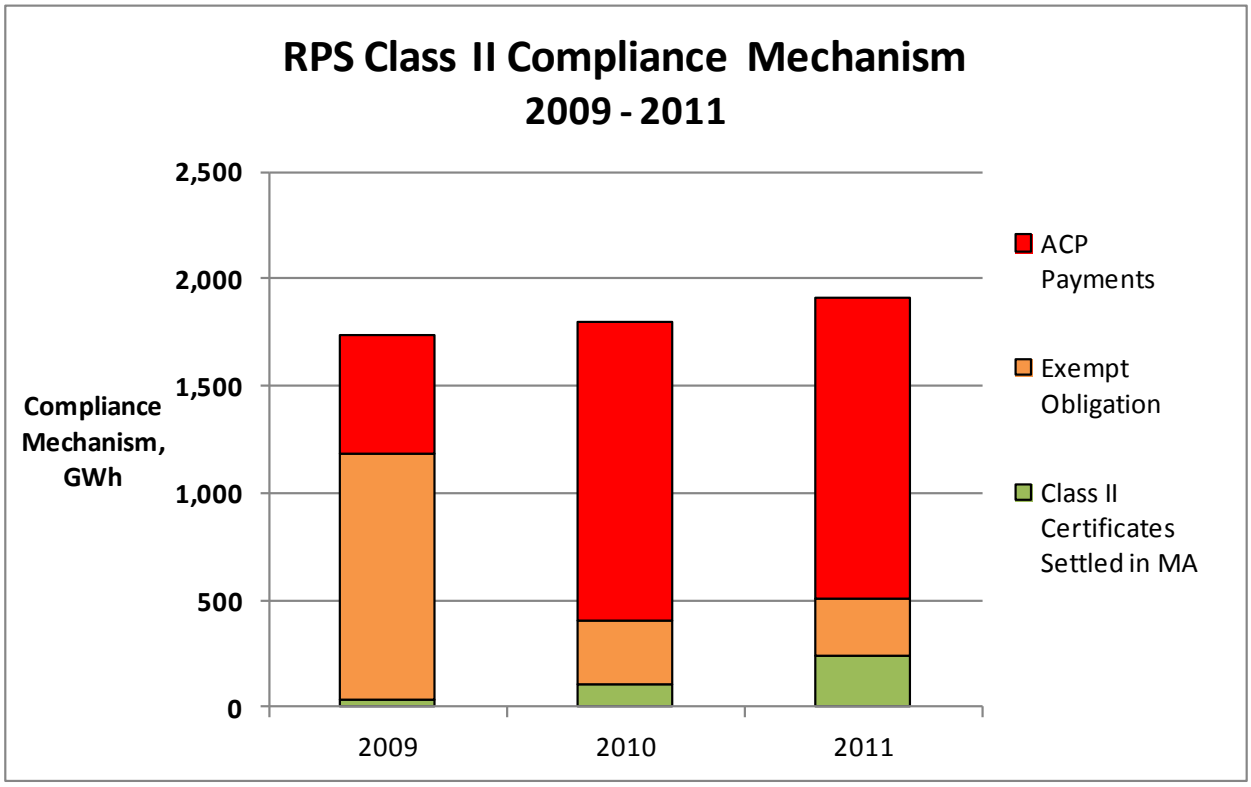

Figure 4. RPS Class II Compliance by Compliance Mechanism, 2009-2011

PROSPECTS FOR ADDITIONAL CAPACITY FOR RPS CLASS II COMPLIANCE

Generation capacity for the RPS Class II can be located throughout New England and adjacent controls areas. This analysis focuses on the prospects for additional existing supplies from New England for which better data is available, though some discussion on supply prospects outside New England is provided.

Prospects for additional qualified generation is based on two considerations – the potential supply from existing renewable energy units and the likelihood those units meet, or can be upgraded to meet, the current standards for qualification. As discussed for each applicable technology below, prediction of future qualified supply is difficult and uncertain. As noted before, no pre-1998 wind projects exist except for the one project already qualified.

Landfill Gas

The prospective additional supply of eligible landfill gas to energy generation is small, and DOER has a greater degree of confidence in this estimate than for biomass and hydro. DOER has already qualified 17 MW of landfill gas capacity, and ISO-NE data suggests that only a few more MW of potentially eligible capacity is available in its territory. Over the past years, DOER has conducted outreach to landfill gas companies and facilities to inform them of the program, and few untouched facilities remain. Additionally, older landfills typically experience diminishing methane gas production, leading to reduced electricity generation over time. DOER does not expect appreciably more landfill gas supply to qualify for the Class II program.

Small Hydro

DOER understands that roughly 300 small hydro facilities exist in New England and about 150 in New York. DOER has qualified 83 MW of small hydro capacity to date, and a slow but steady stream of applications continues to come into DOER. There have been no applications for small hydro from New York, as hydro generation is counted towards the state's 30% renewables goal. By DOER's estimation, the necessity of small hydro applicants to be certified by LIHI and reviewed by state environmental agencies has established a reasonable and workable threshold for qualification to meet the statutory commitment to low environmental impact. Currently, Class II REC prices of roughly $20/MWh and a typical fee of $60 per GWh of expected annual generation[3], the cost of certification will be paid off by approximately one month of REC revenue.

Analysis of ISO-NE data shows that the total small hydro electric summer and winter capacity in New England is roughly 210 MW and 290 MW, respectively, and this capacity has generated an average of 1862 GWh per year between 2004 and 2011. Without further study, it is unclear what portion of this capacity meets, or could be economically upgraded to meet, the Class II environmental criteria, or the extent to which this generation might settle in other New England markets.

DOER anticipates continued growth of small hydro to the Class II standard but that much of the remaining capacity will remain unqualified. DOER expects that small hydro certificates will continue to be in demand in the other New England RPS programs with higher prices, but that sudden flows back to Massachusetts are possible when other markets enter oversupply or other states make program changes.

Biomass

DOER does not expect non-woody biomass (anaerobic digesters, advanced biofuels) to contribute in any significant way to the Class II demand. Few if any such projects now operating were installed prior to 1998.

[3] See: LIHI Certification Handbook, Certification Program Fee Schedule.

Significant existing biomass capacity still exists in New England. ISO-NE data shows the summer and winter capacity to be 390 MW and 415 MW, respectively. Only one unit is located in Massachusetts, the 18 MW Pinetree Power facility in Westminster, which is facing an expiring PURPA contract and an uncertain future.

DOER announced in August 2012 its intention to revise its Class II regulation to integrate the appropriate provisions of the Class I regulation promulgated earlier in August 2012. DOER is currently reviewing this aspect of the Class II rulemaking but has not offered a draft regulation. DOER recognizes that its decisions on the biomass eligibility criteria are an important factor in projecting supply.

Adding some aspects of Class I biomass provisions to Class II will further tighten the eligibility threshold. A greenhouse gas emission reduction threshold will make it necessary for all-electric biomass generation units to increase their overall efficiency and utilize substantial quantities of biomass residue fuel. In the current fleet of existing biomass capacity in New England, only a small amount, if any, is likely able to meet the overall efficiency provision of Class I. DOER will continue to consider these issues in the context of the Class II rulemaking.

Therefore, at the time of this report, the prospects for existing biomass remain uncertain, but current Class II emissions standards, anticipated greenhouse gas and sustainability requirements, and a range of economic conditions, clearly make biomass eligibility a difficult barrier for most projects. Given the larger size and higher capacity factors of biomass units, projecting the likely contribution of Class II Certificates from biomass and establishing an appropriate minimum standard is difficult.

Summary of Supply Prospects

In the 2011 compliance year, 234,778 MWh of Class II generation settled in Massachusetts for compliance. This represents a minimum standard of 0.475% of the 2011 total load.

For Class II, DOER believes that landfill gas supply is resource constrained, that small hydro will continue a steady pace to qualify, and that biomass supply is significantly challenged to meet eligibility criteria.

Settlement of Class II Certificates in Massachusetts is also highly influenced by the market price signals, which at least currently favor other markets with higher ACP rates and shortage.

DOER sees continued slow growth in qualification and sustained large supply shortfalls without regulatory change. Policy adjustments to provide market balance will need to anticipate a continued supply growth, but consider uncertainties in this supply and regional market dynamics. Care must be taken in the policy revisions to not discourage investments necessary to meet a minimum standard.

OPTIONS AND RECOMMENDATIONS FOR REDUCING RELIANCE ON ACP

DOER recognizes that the current state of the RPS Class II market provides an important incentive for qualified existing renewable generation units to maintain their operation, but that the shortage of certificates well below the minimum standard is an unnecessary burden on Massachusetts ratepayers. DOER offers for consideration the following options to improve the current policy situation.

Revision to the Class II Minimum Standard

Downward revision to the minimum standard is a straightforward means to reduce ACP reliance and can be accomplished by DOER through a rulemaking. Several options to implement such a reduction are presented below. These options are evaluated in terms of their effectiveness in reducing ACP reliance and generation attrition over time, as well as impacts on existing generators' ability to make upgrade investments and risk to load serving entities, particularly the competitive suppliers, to predict future compliance obligations and price contracts for load.

Reduce the Class II Minimum Standard to another Constant

As discussed earlier, DOER set the current minimum standard at 3.6% based on an analysis of Massachusetts "fair share" of the existing renewable capacity in New England. As we have seen, much of this existing capacity has not sought qualification and, in DOER's estimate, is unlikely to do so. Current Class II qualified generation is sufficient to meet a minimum standard of about 0.64%, though about 26% of this qualified generation is currently settled outside of Massachusetts' compliance market.

DOER could re-set the minimum standard to a lower value. To establish this lower value, DOER might consider the use the "historical contribution" approach in distributing the cost of supporting the region's existing fleet. Additionally, DOER could commission a more thorough evaluation of the likelihood of units to meet eligibility requirements, and adjust the minimum standard to better reflect likely supply. Further, an evaluation of the interaction of the region's existing supply and aggregate demand could help inform the setting of the standard.

Reducing the minimum standard to a new constant above the current supply sustains the current market structure where Class II Certificate prices remain near the ACP rate and some reliance on the ACP compliance is tolerated, especially in years until the expected supply is qualified. Reducing the minimum standard too low may cause oversupply, low REC prices, no ACP compliance, but possible attrition of existing generation.

Establish a Fixed Minimum Standard Ramp

DOER can specify in regulation an annually increasing minimum standard from just above the current qualified supply to the aspirational minimum standard based on "fair share" or "historical contribution". An appropriate ramp would reduce ACP reliance in the short term, while creating a future demand sufficient for investment to occur and clear future compliance obligations by load serving entities.

However, setting a fixed increasing ramp of minimum standards, without sufficient evidence that units are able to meet the current qualification thresholds, may result in a return to high ACP reliance within a few years.

Establish an Annually Adjusting Minimum Standard
DOER could establish an adjusting minimum standard that accommodates supply growth, but minimizes the supply gap. The adjustment would need to be based on a formula in regulation to reduce financial uncertainty for existing generation units seeking upgrade investments. For example, DOER could annually establish the compliance obligation for the following compliance year at some percentage above the number of certificates that settled for compliance the current compliance year, up to some maximum standard. Providing this gap each year would maintain opportunity for additional applications or flows of certificates from other states. But, unlike the fixed minimum standard ramp, the standard would not increase unless and until supply of qualified existing generation increased.

The annually adjusting standard, however, is problematic for load serving entities to predict their compliance obligation and set prices on load contracts typically of terms up to three years. DOER recognizes that the competitive suppliers particularly face significant financial risk for such uncertain obligations or the prospects of passing through incremental compliance costs to their customers, which is not in the best interest of the competitive supply market.

Establish a 3-Year Forward Schedule Minimum Standard
A final option for revising the minimum standard is to establish in regulation a 3-year forward increasing ramp, and a provision for DOER to annually add a minimum standard at the end of the forward schedule, such that the market always has a known minimum standard for the next three years. The addition minimum standard each year would be set, up to some maximum level, by a formula in regulation to assure investors that future demand will accommodate new applicants. The three-year forward fixed schedule is sufficient to reduce compliance risk to load serving entities, but is short enough to allow the program to adjust so as not to risk sustained high ACP reliance.

Modify the Alternative Compliance Payment Rate
DOER could re-set the ACP Rate. A higher ACP Rate might stimulate biomass and hydro project investments to meet environmental standards, thereby increasing Class II REC supply and reducing ACP reliance. However, such an increase would likely need to be substantial and increase the total cost of the program to ratepayers and possibly the total ACP receipts. A lower ACP Rate may discourage additional applications, and may drive further settlement of Class II RECs to other New England markets. This action would likely increase reliance on the ACP mechanism, but might reduce the total receipt of payments.

Enabling Class I Oversupply to Serve Class II
In some states, notably Rhode Island, Connecticut and New Hampshire, Class I certificates are eligible for compliance in Class II. Thereby, when the Class I market is oversupplied, the Class II market serves as a secondary market which can (if the Class II market is not similarly

oversupplied) provide a price floor for Class I certificates and reduce ACP reliance in the Class II.

DOER believes this policy has some merits, primarily though for Class I. To date, the Massachusetts Class I market has not had significant oversupply conditions beyond what its banking provisions can accommodate and, in the year of greatest oversupply, market prices did not fall much below the Class II price levels (which hover just below the Class II ACP rate). The Class I market has entered a period of shortage in 2011, so in the short term, this inter-Class eligibility is unlikely to be of great value. Enabling the use of Class I certificates in Class II would likely require statutory changes, and would require separate rulemakings in the Class I and Class II regulations.

Address Environmental Criteria for Class II Eligibility

As discussed earlier, DOER believes the environmental criteria and qualification procedures in the Class II regulation are consistent with the statutory limits on eligibility for low emissions biomass and low impact small hydro. Further, in light of the Global Warming Solutions Act and the recent findings of the Manomet Study, DOER believes the plan to add greenhouse gas thresholds to existing biomass units seeking Class II qualification are consistent with the Commonwealth's greenhouse gas reduction commitments. Clearly, though, these requirements have limited the extent to which biomass units can qualify and the pace at which hydro units are seeking qualification.

DOER and the Executive Office of Energy and Environmental Affairs recognize the trade-offs in this issue between the Class II objectives of maintaining existing renewable generation in the region's electric mix, and preserving environmental qualities. While DOER believes an appropriate balance has been met, the agency recognizes that a relaxation of the standards could likely increase eligible generation and reduce ACP reliance. DOER remains open to any guidance from the Legislature on the statutory intent of the environmental concerns expressed in the enabling language.

Separate from revising the environmental criteria in regulation, DOER could provide, using ACP receipts, greater assistance to existing generation units to afford the environmental upgrades necessary to meet the Class II standards. The Massachusetts Clean Energy Center has made available its Commonwealth Hydropower program that provides such assistance to projects in the state. Additionally, the 2012 Act has directed the use of 30% of the Class II ACP revenues for this purpose, and DOER has included that amount (over $10 million) in its 2011 ACP Spending Plan. These funds are limited to projects in Massachusetts and are open to small hydro units seeking either Class I or Class II qualification. DOER expects these programs to support hydro upgrades to increase Class II generation and reduce ACP reliance.

General Conclusions

DOER maintains that the RPS Class II market is an important policy mechanism to support the existing fleet of renewable energy generation units. DOER further maintains that ratepayer support should only to be available to continue generation that can meet high environmental standards. DOER does not support relaxation of the environmental standards set in the current

regulation but is open to guidance from the Legislature on opportunities to improve the procedures by which units are certified to meet such standards.

DOER also recognizes that while the program to date has been successful in supporting a significant capacity of existing units, the program's minimum standard of 3.6% is out of balance with the current and foreseeable supply, leading to over reliance on ACP compliance at ratepayer expense. DOER is committed to correcting this situation.

Recommendation

Drawing on the policy options described above, DOER recommends reducing the current 3.6% Minimum Standard, to a 3-Year Forward Schedule Minimum Standard. The new starting minimum standard would take effect for the 2013 Compliance Year and reflect the generation supplied to Class II in 2011 and 2012 and provide for an annual supply growth each year, for the three year schedule (2013, 2014, and 2015). The regulation would further provide that annually DOER would announce the forward schedule's next year's minimum standard considering the actual settlement of Class II certificates in the last compliance year. This minimum standard would be determined by formula to maintain, but not exceed, the aggregate 3-year growth rate – thereby constraining ACP reliance if new supply does not come forward, but always providing load serving entities with three year certainty on compliance obligations. DOER recommends establishing an overall cap on the Minimum Standard to constrain ratepayer cost. The size of this cap will be further evaluated by DOER considering both historical contribution and fair share approaches, and factoring economic likelihood of projects to meet eligibility thresholds.

DOER further recommends additional consideration of support mechanisms for existing renewable generation unit to invest in upgrades to meet eligibility criteria. For this purpose, DOER, with the Massachusetts Clean Energy Center, will carefully evaluate the effectiveness of the $10 million from 2011 ACP funds in stimulating investment necessary to bring more small hydro supply. Additionally, as directed by the Legislature in Section 47 of the 2012 Act, DOER will conduct a study of the process of reactivating existing hydro facilities and lay out further conclusions and recommendations on expediting and streamlining the process to gain necessary permitting and approvals.