

**225 CMR 14.00**  
**Renewable Energy Portfolio Standard (RPS) Regulation**

**BIOMASS ENERGY RULEMAKING**  
**SUMMARY OF PROPOSED FINAL REGULATION**

**Massachusetts Department of Energy Resources**

**April 27, 2012**

The Department of Energy Resources (DOER) has carefully reviewed the report of the Joint Committee on Telecommunications, Utilities, and Energy on the 225 CMR 14.00 draft regulations filed with the Legislature on May 3, 2011. DOER has also reviewed comments received since this time from other interested stakeholders. DOER is appreciative of the substantial interest the public has given to this regulatory process and the impact these new rules will have on the Commonwealth's clean energy goals and climate commitments, the future of biomass energy development, and the role and impact of our regional forests. Through this process, DOER and the Executive Office of Energy and Environmental Affairs have stayed steadfast in our goal to provide the best science-based solution to support biomass energy to the extent that it can adequately serve clean energy and climate mitigation commitments and preserve the ecological and economical services of our forests. DOER has learned significantly from a wide range of stakeholders and researchers. We are confident these final rules will establish the proper trajectory for biomass development for Massachusetts.

DOER offers the Proposed Final Regulation for public comment for a thirty (30) day period, after which time, DOER will finalize the regulation and file them with the secretary of state for final promulgation.

The two important Guidelines concerning *Fuel Eligibility and Certificate* and *Overall Efficiency and Greenhouse Gas Analysis* have also been revised since their initial distribution on May 3, 2011. Along with the regulation, these final draft Guidelines are offered for public comment over the period and process coincident with comments on the regulation.

The final revisions to the draft regulation are summarized below.

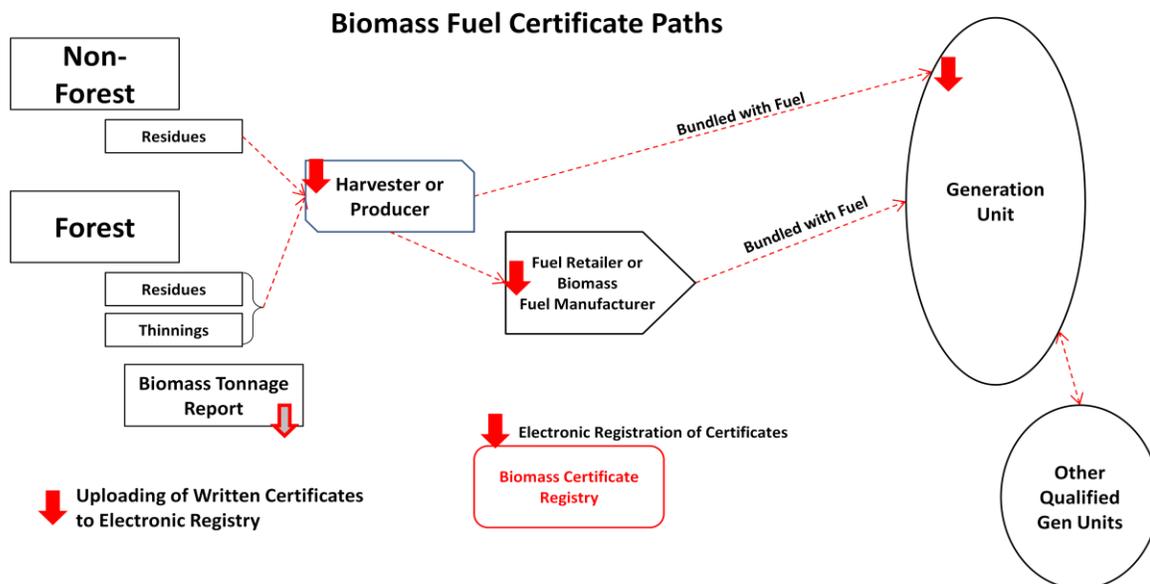
**1) Carbon Accounting**

For the purpose of implementing the required GHG reduction threshold (50% reduction in 20 years) provided in 225 CMR 14.05(1)(a)(7)(f)(iii), the accompanying Overall Efficiency and Greenhouse Gas Analysis Guideline provides a template for applicants to demonstrate GHG reductions. DOER has provided substantial revision to the carbon accounting as detailed in the Guideline, and summarized as follows.

Based on the methodology and results provided in the Manomet Study, DOER has established two carbon deficit curves for woody biomass fuel – one for Residue materials coming from forest or non-forest resources, and one for forest Thinnings. While Residue sources tend to quickly return the carbon deficit, Thinning material return only a small amount of the carbon deficit in the necessary 20 year time horizon. Generation Units will need to utilize a sufficient amount of Residue material to meet the carbon reduction threshold.

## 2) Biomass Fuel Certificates and the Biomass Certificate Registry

Qualified biomass Generation Units are only permitted to utilize Eligible Biomass Woody Fuel to generate MA Class I Renewable Energy Certificates (RECs). Such fuel can be supplied to a Generation Unit only directly from the originating source of the Eligible Biomass Woody Fuel, or through a fuel retailer that receives the Eligible Biomass Woody Fuel and who might subsequently produce Co-Mingle Eligible Biomass Woody Fuel by co-mingling the original Eligible Biomass Woody Fuel with other clean woody biomass fuel. In this case, the retailer can provide to a qualified Unit no more tonnage of co-mingled fuel than the tonnage of Eligible Biomass Woody Fuel it received directly from its originating source. Fuel tracking and carbon accounting is accomplished with Biomass Fuel Certificates which are characterized by source (Residues or Thinnings), and which remain bundled with the Eligible Biomass Woody Fuel or re-bundled with the co-mingled fuel. An electronic Biomass Certificate Registry shall allow for Certificate tracking, transactions, and verification. The figure below provides the paths for Biomass Fuel Certificates. The work of the Advisory Panel established in the regulation has been expanded to assess the tracking and verification of Biomass Certificates, the impact on the fuel market and the accounting of greenhouse gas emissions.



### **3) Eligible Forest Biomass and Residue Retention**

The May 2011 draft regulation established a range of eligible biomass materials (in the form of residue and allowable thinnings) that can be removed from a forest harvest operation depending on forest soil quality. The range extended from a maximum of 30% of the weight of the forest products removed for highly productive soils, to 0% for poor soil conditions. This structure provided protection for nutrient retention critical for poor soils, while allowing greater removals including essentially all “tops and branches” and some additional thinnings from highly productive forest soils.

In the Proposed Final Regulation, DOER maintains the structure of the draft regulation, but provides modifications, in the Fuel Eligibility and Certificate Guideline, to more broadly and more simply provide for forest sustainability and forest management objectives. A summary of the revisions follows.

- Based on criteria established by DOER in association with the USDA Natural Resource Conservation Service as detailed in the Guideline, soils types are characterized as either “Good” or “Poor”. Poor soils are characterized as such due to one of the following reasons – shallow soils (lithic bedrock within 20 inches of the surface), dry nutrient poor sandy soils, or dysic Histosols soils.
- For Poor Soils, 100% of the residues (tops and branches) from harvest products must be retained on the forest floor.
- For Good Soils, at least 25% of the harvest products residues must be retain in the forest.
- For all soils, the maximum total eligible removal (as tons of residues and thinnings) of biomass fuel is 30% of the weight of the harvest products removed.
- Additionally, all forest harvests must meet the following sustainability criteria, as further defined in the Guideline:
  - ✓ Biomass material removal is not allowed from old growth forest stands
  - ✓ Biomass material removal is not permitted from harvest on steep slopes
  - ✓ All naturally Down Woody Material must be retained in the forest
  - ✓ Forest litter, forest floor, roots and stumps must be retained and protected.
  - ✓ Live cavity trees, den trees, and other live decaying trees or snags must be retained and protected in quantities to maintain important habitat.

DOER has also revised the Guideline to allow for small harvest sites (50 acres and less) to base the allowable biomass removal to be based on the averaging of soil conditions present on the site, as opposed to enforcing the removal limits on each section of the harvest with different soil conditions. This modification, along with the revisions to assure a minimum retention of residues, will provide sufficient protection to forests, while reducing the regulatory and enforcement burden for small harvests.

DOER also recognizes the ecological or forest management interest in some circumstances to thin forests beyond the limits allowed for eligible biomass fuel as tied to the weight of forest product removal. While DOER will not allow such additional thinning material to qualify as

eligible biomass fuel, DOER has removed the provision in the draft regulation that nullifies the eligibility of *all* biomass removals if biomass removals exceed the allowable limits for the RPS.

DOER has also added to the definition of Forest Salvage removal of trees for the purpose of reducing fire hazard on forest lands officially designated as Fire-adapted Forest Ecosystems. The purpose for this addition is to provide for the recognized special forest management methods utilized for these forest ecosystems, which have very limited extent in Massachusetts and the northeast.

#### **4) Overall Efficiency Criterion**

The May 2011 draft regulation provided that eligible biomass generation Units must demonstrate an Overall Efficiency of 60% to achieve a full REC credit, and that Units achieving 40% efficiency achieve a half REC credit, with such credit increasing linearly to the full credit as efficiency is increased from 40% to 60%. This provision fundamentally will shift biomass development from power-only generation units typically operating at efficiencies around 25%.

DOER has revised the Overall Efficiency criterion by increasing the Overall Efficiency at which the half-REC credit begins to 50%. DOER believes this criterion remains practical for project development and will further increase the energy utilization of our limited sustainable biomass resource.

However, DOER does very much want to encourage the development of biomass units that demonstrate advancements in the conversion of biomass to energy, be it through advances in the conversion design, reductions in pollution emissions, or through the use of refined biomass fuels that advance the commercial opportunities of biomass energy. DOER recognizes that for these projects, which are amongst the first of their type to be implemented, greater technical and financial risks to the generator and potentially to thermal hosts, are confronted. To promote the advancement of biomass technology, DOER does provide that the Overall Efficiency requirement for such Units begin at 40% to gain a half REC, with the full REC realized at 60% Overall Efficiency. For Units seeking such treatment as Advancement of Biomass Conversion Generation Units in their Statement of Qualification Application, DOER will notice such applications for public comment prior to making its decision.

#### **5) Annual Compliance of Generation Units and Provisions for Under-Compliance**

DOER provides important revisions to require an annual filing by Generation Units demonstrating compliance with the carbon reduction threshold. The provision is summarized as follows.

All qualified woody biomass Generation Units must supply to DOER (by each January 31) an Annual Compliance Report on the previous Compliance/Calendar Year fuel consumption by tons of material from Residues and Thinnings. Report must be based on the annual totals of Residue and Thinning Biomass Fuel Certificates possessed by Unit in their account on the Biomass Certificate Registry. The Report must explain variances with proposed Fuel Supply Plan for that year, and the Report must include GHG Analysis based on the Guideline and actual fuel use and

**Overall Efficiency.** The Report must demonstrate the Unit's performance with respect to the GHG reduction threshold (50% GHG reduction in 20 years) and report on any under-compliance and the extent of under-compliance (actual % GHG reduction in 20 years).

For each "% GHG reduction in 20 years" that a Unit is under the "50% in 20 years" threshold, an under-compliance fee of \$0.50/REC will be assessed for all RECs generated in the previous compliance year, which must be surrendered within one year. Further, if a Generation Unit is under-compliant with the GHG criterion, its SQ will be placed in a probationary status and is noticed for termination in 5 years. If the Generation Unit demonstrates either that 1) the GHG threshold under-compliance is made up with net over-compliance during the probationary period, or 2) it meets compliance for any three years during the 5-year notice term, the probationary status and notice of termination is revoked.

While a Generation Unit is within a probationary status, DOER will impose increasingly rigorous requirements for the Unit to demonstrate its ability to operate within compliance for each year after under-compliance. The Unit will need to demonstrate that an increasing percentage of their fuel use Certificates are procured under-contract from necessary residue sources. If these actions are not followed, the Unit's SQ will be revoked.

Fees surrendered for Under-Compliance will be sent to the Massachusetts Clean Energy Center and the use of the Fund will be overseen by DOER. The use of the fund is restricted to provide financial support for either 1) industry investments across the supply chain for forest biomass residue materials or 2) activities that increase carbon sequestration in biomass, such as tree planting. Examples of industry investments include investments in residue biomass harvest equipment, investment in residue fuel handling and trucking, and incremental investments needed by Generation Units to handle and utilize residue biomass material.

#### **6) Treatment of Previously Qualified Biomass Units**

In the May 2011 draft regulation, DOER extended the qualification of previously qualified units as follows.

1. All Units remained qualified through Compliance Year (CY) 2012
2. After CY 2012, Units must meet fuel eligibility requirements to remain qualified through CY 2014
3. Beginning in CY 2015, Units must meet all requirements (including Overall Efficiency) to remain qualified

DOER received comment back from the Legislative Joint Committee recommending extending the year in which the 3<sup>rd</sup> requirement must be met to 2020. Additional comments from environmental and wind stakeholders recommended that DOER hold fast with the timeline provided in the draft regulation.

DOER has maintained its proposed rule to expeditiously require previously qualified units to meet the new regulation, but given the significant length of time it has taken to promulgate these rules, DOER has extended the final requirement to Compliance Year 2016.