

**Comments of the Natural Resources Defense Council on the Final Draft Massachusetts
Alternative Portfolio Standard Regulations (225 CMR 16.00)**

1. SUMMARY

On behalf of the Natural Resources Defense Council (NRDC) and our members in the commonwealth of Massachusetts, we submit the following comments on the Final Draft Regulation on the Alternative Energy Portfolio Standard (APS), 225 CMR 16.00. The final draft regulations suffer from numerous deficiencies, both procedural and substantive, which must be corrected and remedied:

- The final draft regulation refers extensively to the guidelines, outsourcing substantive regulatory requirements to these documents. These guidelines are properly characterized as regulations, and must be proposed as such and subject to all the procedural safeguards required for the promulgation of regulations. Furthermore, DOER needs to open a public comment period for the final draft regulations, as no such opportunity has been provided. We are requesting that DOER redress the procedural defects in their APS rulemaking for both the regulation and guidelines.
- The regulations allow for CHP biomass plants to receive both APS and RPS subsidies for the same electricity production. DOER must eliminate duplicative sources of subsidies for combined heat and power facilities.
- The regulations appear to allow up to 70 percent of the biomass fuel burned in a given facility to be non-eligible woody biomass. The use of non-eligible biomass fuels will fail to meet statutory requirements and must be struck from the regulation and accompanying guidelines.
- DOER's proposed GHG accounting overlooks important lifecycle emissions, and the agency has deleted a requirement to account for processing emissions. This omission must be remedied and the regulations must include complete lifecycle greenhouse gas accounting.
- The proposed regulations lack sufficient forestry standards and feedstock definitions to meet the statutory requirements of sustainable forestry.
- Credits should not be granted to low efficiency units. The lack of rigorous APS efficiency standards for CHP plants undercuts the standard established in the Massachusetts RPS.

2. PROCEDURAL DEFICIENCIES

The final draft regulation refers extensively to the guidelines, outsourcing substantive regulatory requirements to these documents. These guidelines are properly characterized as regulations, and must be proposed as such and subject to all the procedural safeguards required for the promulgation of regulations. Furthermore, DOER needs to open a public comment period for the final draft regulations, as no such opportunity has been provided. We are requesting that DOER redress the procedural defects in their APS rulemaking for both the regulation and guidelines.

The APS guidelines are effectively regulations

The Massachusetts Administrative Procedure Act defines “regulation” to include any part of every rule, regulation, standard or other requirement of general application and future effect, including the amendment or repeal thereof, adopted by an agency to implement or interpret the law enforced or administered by it, but . . . not substantially affecting the rights of or the procedures available to the public or that portion of the public affected by the agency's activities[.]¹

Courts consider several factors in determining whether an agency guidance document should be subject to the same procedural requirements as a “full-blown regulation[.]” including “the functions or purposes that are furthered by notice and hearing in a given context.”²

Courts properly recognize that the substance and effect of an agency document is key to determining whether it must be treated as a regulation. “Advisory,” “informational,” or “nonbinding” documents do not need to be subject to the same rigorous procedures as regulations.³ But agency provisions that provide binding requirements, like DOER’s draft guidelines, fall on the “regulation” end of the scale. DOER treats the guidelines as an extension of the regulation itself and refers to it using compulsory language such as: “as prescribed in Department’s *Guideline on Biomass, Biogas, and Biofuels for Eligible Renewable Thermal Generation Units*,”⁴ “must meet the provisions . . . in [the guidelines],”⁵ and “must meet quality and performance criteria provided in [the guidelines].”⁶ This language shows that DOER expects all regulated parties to comply with the guidelines as strictly as they would comply with the APS regulation. Because these guidelines function like regulations, they must be proposed as such. DOER must propose, take comment on and promulgate these provisions directly as part of the APS regulation in conformity with statutory procedures.

The comment period for the guidelines is inadequate

Importantly, the opportunity for comment provided on the Guideline is defective because it does not meet the public comment period that must be afforded to proposed regulations. The public

¹ MGL c. 30A, § 1(5).

² *Massachusetts Gen. Hosp. v. Rate Setting Comm’n*, 371 Mass. 705, 706-07 (1977).

³ *Id.* at 707 n.8.

⁴ Draft APS 16.02 [Eligible Biomass Woody Fuel(a)(1)].

⁵ *Id.* at 16.05(1)(a)(6)(a)(v).

⁶ *Id.* at 16.05(1)(a)(6)(a)(vi), (vii).

comment period for a regulation, guaranteed by MGL c. 30A, § 3, must be at least 21 days. Although DOER has provided a comment period for the final draft guidelines, the period provided fails to meet the statutory minimum.

In an email sent the evening of November 16, 2017, DOER notified stakeholders of a public comment period beginning on that day and ending at 5 pm EST on December 1, 2017. Using the most generous accounting possible, the comment period provided is 16 days, including weekends and a Legal Holiday. DOER must extend the comment period to at least December 6, 2017 in order to comply with the procedural requirements of MGL c. 30A.

DOER did not start a comment period for the draft regulations

In addition to failing to provide adequate opportunity for public comment on the draft guidelines, DOER also failed to provide any comment period on changes proposed in the final draft regulation itself. The November final draft APS regulation and the draft posted in October both contain new provisions that were not previously subjected to public comment and there has been no opportunity for the public to comment on either one. For example, DOER must provide notice and opportunity for comment on the added section on “Feedstock Requirements” (225 CMR 16.05(4)(g)), and the expansion of the definition of “Eligible Biomass Woody Fuel – Forest-Derived Residues (Residues)” to include “trees collaterally damaged...during the normal course of harvesting material” and “trees and portions of trees harvested for the purposed [sic] of the restoration and management of habitat for rare & endangered species” (225 CMR 16.02), among many others.

3. CREDITING DEFICIENCIES

DOER must eliminate duplicative sources of subsidies for combined heat and power facilities

The final draft regulation allows an RPS Class I Renewable Generation Unit to also qualify as an APS Alternative Generation Unit, provided it meets the eligibility criteria (225 CMR 16.05(1)(f)). The related guideline allows a Combined Heat and Power (CHP) Renewable Thermal Generation Unit (RTGU) that qualifies both as a RPS Class I generator and as an APS CHP system to earn both RPS and APS credits for the net MWh of electricity generated, in addition to APS credits for the net MWh of useful heat generated by the unit (*Guideline on Metering and Calculations, Part 2, Section 3(A)*).

Plants are therefore eligible for subsidies under both the APS and the RPS for electricity generation, in addition to APS subsidies for thermal energy. In this regard, biomass is unique compared to other renewable technologies: it is the only APS-qualified renewable source that generates both electricity and heat, thereby able to benefit from multiple sources of support. This duplicative allocation of subsidies represents an unjustified level of support, and moreover generates an unlevel playing field with respect to other clean technologies.

DOER should not allow the same plant to receive the credit under both standards for the same megawatt hour of generation. Each of these standards is designed to ensure that a specified percentage of Massachusetts electricity supply is from generation that qualifies as renewable or alternative. Allowing a plant to receive double credit for a single MWh will frustrate the state’s electricity portfolio goals.

The use of non-eligible biomass fuels will fail to meet statutory requirements and must be struck from the regulation and accompanying guidelines

Previous versions of the draft regulation (prior to the October 13 revision) have required woody biomass facilities to use “only eligible biomass woody fuel” as their source materials to be eligible for subsidies (225 CMR 16.05(4)(g)), emphasis added). This requirement has been deleted in the final draft regulation, and replaced with a new provision that such units “must use a minimum percentage of Eligible Biomass Woody Fuel.” (225 CMR 16.05 (6)(a)), emphasis added).

The related guideline appears to further specify this change, stating that on an annual basis “a minimum of 30% of the Eligible Biomass Woody Fuel used by RTGUs shall be sourced from Forest Derived Residues, Forest-Derived Thinnings, Forest Salvage, or residues derived from wood products manufacturing consisting of Clean Wood, as defined in the definition of Eligible Biomass Woody Fuel in 225 CMR 16.02.” (*Guideline on Biomass, Biogas, and Biofuels for Eligible Renewable Thermal Generation Units*, Section 10).

On the whole, the language and agency intent on this matter in the regulation, guidance, spreadsheets and tables is unclear, contradictory, poorly documented, and subject to interpretation. Nevertheless, as written, the regulation appears to permit up to 70% of the fuel at a particular unit to come from non-eligible sources.

Under this reading, the regulation and its accompanying guidance will fail to meet the statute’s “requirement of 50 per cent reduction in life-cycle greenhouse gas emissions” compared to high-efficiency natural gas and other fossil fuels.^[1]

For example, based on data from the “Manomet Study”^[2] (*Biomass Sustainability and Carbon Policy Study*, 2010, commissioned by the commonwealth of Massachusetts as the technical basis for the 2012 RPS) the provision will fail to ensure that cumulative emissions from biomass plants will be half those from burning natural gas.

Specifically, the Manomet Study analyzes four biomass harvest scenarios that remove whole trees in timber harvest operations of varying intensity.^[3] The Manomet analysis compares the cumulative emissions from burning these feedstocks with emissions from natural gas in thermal applications. (Manomet Study, Exhibit 6-14, scenarios 3 through 6, included as an attached exhibit to these comments).

The biomass feedstocks from these four scenarios produce between 22 and 36 percent more carbon than natural gas after 40 years. Assuming these Manomet feedstocks constitute “non-

^[1]<https://malegislature.gov/Laws/GeneralLaws/PartI/TitleII/Chapter25A/Section11F1~2>

^[2]https://www.manomet.org/sites/default/files/publications_and_tools/Manomet_Biomass_Report_Full_June2010.pdf

^[3] Manomet Study, p. 112, Exhibit 6-14, scenarios 3 through 6.

eligible” biomass and make up 70 percent of a facility’s annual supply - as it appears would be permitted under the proposed regulations - it is mathematically impossible for the remaining 30 percent of eligible biomass to reduce the facility’s total emissions below the statutory threshold – even if eligible biomass were treated as zero carbon from year 1 (which is very unlikely).

Nevertheless, under a plausible reading of the proposed regulations, a power plant could operate at these 30/70 percent conditions and receive subsidies - under these and many other scenarios. This is likely to be true for substantially higher percentages of eligible biomass fuel as well. The agency, however, has not put forward any technical analysis that demonstrates whether and how limiting a plants feedstock to 30 percent eligible fuels could meet the statutory greenhouse gas reduction requirements.

This deficiency must be remedied. Foremost, DOER must amend both the regulation and the Biomass Guidelines to clarify that only 100% eligible biomass woody fuel be used in plants receiving subsidies. Given that any form of partitioning among eligible and non-eligible fuels will be extremely difficult to effectively monitor, verify, and enforce, all provisions in the draft final regulations and guidelines that provide for the use of non-eligible biomass fuels, or could be construed to do so, must be struck entirely.

4. GREENHOUSE GAS ACCOUNTING

DOER’s proposed GHG accounting overlooks important lifecycle emissions

The APS statute requires a “50 per cent reduction in life-cycle greenhouse gas emissions compared to a high efficiency unit utilizing the fuel that is being displaced or, for a new load, a high-efficiency natural gas unit, if natural gas is available at reasonable cost to the site or otherwise the fuel that is most likely to be utilized.”⁷ Lifecycle emissions are all GHG emissions associated with growing, harvesting, transporting, and transforming a fuel, as well as the emissions from burning that fuel. In the case of biomass, “net” lifecycle emissions can also be calculated over time, including crediting regrowth of forests with taking up carbon, or, crediting emissions that would occur “anyway” if forestry or mill residues were left to decompose instead of being burned for energy.

The regulations advance at least five different types of biomass fuels that will be eligible to receive subsidies – wood pellets, wood chips direct from forestry sources (encompassing “residues” and whole tree “thinnings”), wood chips from non-forestry sources, cordwood (which is most likely to be from whole-tree harvesting), and liquid biofuels made from wood feedstock (which could be of any origin). (225 CMR 16.02). These fuels differ in their lifecycle greenhouse gas emissions, not only because they require differing amounts of fossil fuel inputs to bring them to their final state where they are usable as fuel, but because they have different characteristics that affect their net emissions over time.

DOER’s *Guideline on Reduction of Greenhouse Gases for Eligible Renewable Thermal Generation Units Using Eligible Woody Biomass*, an Excel spreadsheet workbook for calculating biomass greenhouse gas emissions, however, does not account for the differing lifecycle

⁷ MGL c. 25A, § 11F ½(b)(ii).

emissions of various fuels – unlike the GHG analysis workbook issued with the 2012 biomass regulations,⁸ which *does* account for lifecycle emissions of differing fuels. Instead the APS workbook uses a *single emissions figure*,⁹ which represents the combustion emissions and other lifecycle emissions from harvesting green wood chips – a figure that, according to literature values, likely underrepresents even these emissions.¹⁰

Moreover, the guideline eliminates altogether any requirement to account for biomass fuel processing emissions – for example emissions relating to transport, manufacture and drying of feedstocks. Emissions of fossil fuels burned during biomass manufacturing, transport and drying add significantly to the total lifecycle emissions, especially in the case of wood pellets, where processing involves significant drying.

The timeframe for assessing net bioenergy GHG emissions is too long

Calculating net greenhouse gas emissions from bioenergy, as the DOER *Guideline on Reduction of Greenhouse Gases* workbook does, requires assessing change over time. The 2012 biomass RPS regulations (225 CMR 14.00) set a 20-year timeframe for reducing biomass GHG emissions compared to fossil fuels. However, the *Guideline on Reduction of Greenhouse Gases* workbook proposes a timeframe of 30 years for the APS, which ensures that more biomass carbon pollution can be released into the atmosphere under these rules than if the RPS standard of 20 years had been maintained.

Reducing greenhouse gas emissions in the short term is critical from both a scientific and policy perspective. The potential impact of CO₂ emissions in the short term on climate tipping points has been shown to be significant,¹¹ and limiting temperature increase to 2°C above pre-industrial levels requires large and immediate greenhouse gas emissions reductions. For example, Ricke and Caldeira (2014) recently found that the median time between an emission and maximum warming is 10.1 years.¹² Carbon emissions reductions must therefore be realized within short timeframes – measured in years, not decades – that are relevant to climate policy imperatives.

⁸ Spreadsheet at <http://www.mass.gov/eea/docs/doer/renewables/biomass/ma-rps-regulation-overall-efficiency-and-ghg-analysis-guideline-doer-081712.xlsx>. The section accounting for lifecycle GHG emissions is on the “GHG Analysis” sheet, cell C-23 to F-25. This section does not appear in the current workbook for GHG analysis under the APS.

⁹ Cell D-11 at the “Parameters” sheet of the *Guideline on Reduction of Greenhouse Gases* workbook.

¹⁰ Manomet’s table (6-6) estimates that lifecycle emissions of harvesting and transporting chips represents around an additional 1 - 2 percent of emissions on top of stack emissions from combusting the wood. A variety of other studies examining use of green chips for biomass suggests that the estimate is closer to 4 percent and above (See, e.g., Domke, G. et al. (2012). “Carbon emissions associated with the procurement and utilization of forest harvest residues for energy, northern Minnesota, USA.” *Biomass and Bioenergy* **36**: 141-150.; Ortiz, C. A. et al. (2016). “Time-dependent global warming impact of tree stump bioenergy in Sweden.” *Forest Ecology and Management* **371**: 5-14; Laganière, J., et al. (2017). “Range and uncertainties in estimating delays in greenhouse gas mitigation potential of forest bioenergy sourced from Canadian forests.” *GCB Bioenergy* **9**(2): 358-369.) .

¹¹ Executive Office of the President of the United States, *The Cost of Delaying Action to Stem Climate Change*, 2014.

¹² Ricke, R. L. and K. Caldeira, 2014. *Maximum Warming Occurs About One Decade After a Carbon Dioxide Emission*, Environ. Res. Lett. 9 124002.

Accordingly, the standard for the APS must be set at no more than 20 years, and should in fact be even shorter, given the many deficits in accounting for the full GHG impact of bioenergy. We propose a timeframe of 10 years for net bioenergy carbon accounting to be calculated.

Credits should not be granted to low efficiency units

The APS statute specifically articulates the need to restrict eligible biomass to efficient applications, stating “facilities using biomass fuel shall be low emission, use efficient energy conversion technologies and fuel that is produced by means of sustainable forestry practices.” According to the EPA, high efficiencies in combined heat and power (CHP) applications are feasible and achievable: “[b]y using waste heat recovery technology to capture a significant proportion of heat created as a byproduct in electricity generation, CHP systems typically achieve total system efficiencies of 60 to 80 percent for producing electricity and thermal energy.”¹³

The APS revised guidelines, however, do not establish a rigorous efficiency standard for CHP to be eligible for Alternative Energy Credits. In contrast, the 2012 RPS establishes a minimum biomass efficiency standard of 50%, underscoring the APS’s undermining environmental protections and increasing GHG pollution emitted per unit of useful energy.

As a practical matter, a biomass CHP plant could (at current prices) collect more than twice as much in Alternative Energy Credits as from RPS credits, all while avoiding RPS standards. In the event that the rule is finalized in its current form, DOER will have effectively promulgated two conflicting standards for a single CHP operation, facilitating a “race to the bottom” to build and subsidize plants with lower efficiencies, thus undermining the goals of the RPS and APS programs.

5. SUSTAINABLE FORESTRY

The proposed regulations lack sufficient forestry standards and feedstock definitions to meet the statutory requirements

In the originating APS statute, the legislature made clear that forest sustainability is a prerequisite to receive APS subsidies under the amended legislation, stating “facilities using biomass fuel shall be low emission, use efficient energy conversion technologies and fuel that is produced by means of sustainable forestry practices.”¹⁴

Forestry “residues” – the tops and limbs left over after harvesting of more commercially valuable parts of a tree – are central in DOER’s existing RPS biomass regulations. In those regulations, the agency treated residues as an eligible biomass fuel, but recognized that leaving adequate residues onsite following harvesting is essential to preserving soil fertility, preventing erosion, and maintaining wildlife habitat. The 2012 biomass regulations ensured the tracking of biomass

¹³ Energy and Environmental Analysis, Inc. and Eastern Research Group, Inc. Biomass Combined Heat and Power Catalog of Technologies, U. S. Environmental Protection Agency Combined Heat and Power Partnership. September, 2007.

¹⁴ MGL c. 25A, § 11F ½(a) (emphasis added).

shipments with a certificate system and the documentation in a Tonnage Report that only eligible biomass is being used in facilities.

The final revised regulations have none of these requirements and instead state that “Forest Derived Residues and Thinnings shall only be sourced from forests meeting Sustainable Forestry Management practices, as independently verified through the attestation of a licensed forester or independent certification” (225 CMR 16.05(4)(g)(2)).

Moreover, the final revised regulation expands the definition of “Eligible Biomass Woody Fuel – Forest-Derived Residues (Residues)” to include “trees collaterally damaged...during the normal course of harvesting material” and “trees and portions of trees harvested for the purposed [sic] of the restoration and management of habitat for rare & endangered species” (225 CMR 16.02), with no opportunity for public comment. These definitional changes would allow unlimited amounts of high-carbon whole trees to be counted as low-carbon residues and would have dramatic effects on carbon accounting outcomes. These materials should be accounted for in the GHG accounting either as thinnings or as full stack emissions, but not as residues.