conservation law foundation

January 31, 2012

Mark D. Marini, Secretary
Department of Public Utilities
One South Station, 5th floor
Boston, MA 02110

Re: Investigation by the Department of Public Utilities into Updating its Energy Efficiency Guidelines, D.P.U. 11-120

Dear Mr. Marini:

Conservation Law Foundation ("CLF") appreciates the opportunity to comment on the Department's investigation into the proper determination of the benefits of reduced CO2 emissions for the purpose of evaluating the cost-effectiveness of energy efficiency programs.[1] Establishing a reasonable value for the avoided costs of CO2 is crucial to ensuring an accurate cost-effectiveness analysis of energy efficiency programs and to satisfying the current energy efficiency guidelines as well as the mandates of the Green Communities Act ("GCA") and the Global Warming Solutions Act ("GWSA"). The Commonwealth has recognized that energy efficiency is a vital tool for reducing energy costs, fostering energy security and combating climate change, and the GCA requires utilities to procure "all available energy efficiency and demand reduction resources that are cost-effective or less expensive than supply."[2] Unless a reasonable estimate for the costs of avoided carbon is included in the cost-effectiveness analysis, there is a serious risk that the energy efficiency programs will not receive the level of funding

[1] These comments supplement the consensus comments CLF has joined in submitting with MassEnergy Consumers Alliance, the Environmental League of Massachusetts, the Massachusetts Climate Action Network, and Clean Water Action.
[2] G.L. c. 25, § 21(a), (b)(1).

necessary to meet the mandates of the GWSA and the Massachusetts Clean Energy and Climate Plan for 2020 ("2020 Plan"). Therefore, CLF urges the Department to establish an avoided cost for the 2013-2015 plans by using the Class 1 Renewable Portfolio Standard Alternative Compliance Payment ("ACP") value of roughly $112 per ton. For the reasons explained below, the ACP is well-suited to provide a reasonable proxy for a cost-effectiveness metric until the Department is able to develop a Massachusetts-specific cost curve for cost-effectiveness screening in future planning dockets.

Background

First, it is important to note that the Department has not only the authority, but an obligation under the existing energy efficiency guidelines, to include the avoided costs of environmental compliance measures that "are reasonably projected to be incurred in the future because of state or federal laws and/or regulatory requirements that are currently in effect or are projected to take effect in the future." Guidelines, §§ 3.4.4.1(a)(v), 3.4.4.2(iii). These guidelines are entirely consistent with Supreme Judicial Court precedent which disallowed the consideration of "environmental externality values that may not reasonably be expected to have an effect on a utility's costs," but affirmed the Department's authority to "direct the avoidance of conditions that a utility might experience provided that reasonable anticipated future circumstances will impose costs on the utility." Massachusetts Electric Company v. Department of Public Utilities, 419 Mass. 239, 245-46. Here, as the Department has so clearly explained, it is entirely reasonable to conclude that the mandates of the GWSA and the policies in the 2020 Plan will have an effect on utility costs. See D.P.U. 11-120, at 17-18. In fact, the Department

clf
conservation law foundation

concluded early on, in D.P.U. 08-50-A, that existing state law, including the GWSA, will result in "reasonably anticipated environmental compliance costs that will be reflected in future electric prices in the Commonwealth." D.P.U. 08-50-A, at 17. That is, the Department has already determined that the costs of complying with the GWSA will be *internalized* in future power costs. The Department also has explicitly considered GWSA compliance costs in evaluating the cost-effectiveness of long-term renewable contracts. See D.P.U. 10-54, at 81, 82 ("Moreover, the GWSA is law, rather than merely a 'reasonably anticipated future' circumstance, which makes the benefits of avoiding the costs of complying with the law all the more compelling"). There is simply no credible argument that the Department cannot consider the costs of compliance with the GWSA, and a failure to do so would result in a substantial undervaluing of the benefits of energy efficiency as explained below.

The Current Valuation Method is Inadequate

Under the current method, Program Administrators are only considering the costs of CO2 emissions that were characterized as "internalized" under the Avoided Energy Supply Costs in New England, 2011 Report ("AESC 2011").[3] This method includes the cost of purchasing allowances to comply with the Regional Greenhouse Gas initiative (RGGI) and a federal cap-and-trade program that the report presumes would begin in 2018.[4] This results in a value of $1.89 per short ton from 2012 through 2017 and a cost of $15.30 to $39.10 per short ton from

[3] D.P.U. 11-120, at 16.
[4] AESC 2011, at 2-15.

2018 to 2026.[5] This method does not include any estimate of the costs to comply with the GWSA or other Massachusetts mandates to reduce carbon emissions. Although there may be some uncertainty as to the magnitude of the costs for complying with the GWSA, it is unreasonable to assume that they will be zero. It is, however, reasonable to assume that the electric sector will play a large role in reaching the GWSA mandates.[6] For example, the GWSA requires that greenhouse gas ("GHG") limits be established specifically for the electricity sector and requires state agencies to "promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of electricity generation, buildings and transportation." D.P.U. 10-54, at 83 (citing G.L. c. 21N, §§ 3(c), 6). The 2020 Plan contains a portfolio of over 25 policies designed to reach the 2020 emissions reductions, including policies aimed directly at the electric sector such as the Renewable Portfolio Standard, a proposed Clean Energy Performance Standard, and the Energy Efficiency Plans themselves. See 2020 Plan, 37-48. As a result, the benefit values relating to avoiding those costs—currently taken at zero value—are clearly insufficient to accurately assess the cost-effectiveness of energy efficiency programs,[7] and they are at odds with the demands of the GWSA and the current energy efficiency guidelines.

Incorporating Reasonably Anticipated Costs into the Analysis

[5] Id. at 2-15, 2-16.
[6] "[T]he Department concludes that GHG emissions reductions from the electric sector will be vitally important – likely even more important than reductions from other sectors – in complying with the GWSA." D.P.U. 10-54, at 83.
[7] As the Department has so eloquently explained, ignoring the costs of the GWSA simply because they may be difficult to quantify is inconsistent with the Department's obligation as set forth in the Massachusetts Electric case: "Indeed, it would run afoul of the Supreme Judicial Court's logic to conclude that difficulty of quantification requires such costs to be valued at zero." D.P.U. 10-54, at 82.

clf
conservation law foundation

The question then remains as to the proper method for determining the avoided costs associated with the successful implementation of the GWSA and the 2020 Plan. This is not an academic question. According to a recent analysis, failing to include a reasonable estimate for the costs of complying with the GWSA could have significant, negative impacts on the cost-effectiveness analysis of natural gas energy efficiency programs for 2012.[8] As a result of falling natural gas prices, it is estimated that almost 30% of the 2012 targets for natural gas programs could fall outside the range of cost effectiveness unless a more realistic cost for compliance is taken into account.[9] This could jeopardize compliance with the 2020 Plan which calls upon energy efficiency to deliver 7.1% of the 25% of the GHG reductions required by 2020.[10] Five (5) percent would come from electricity and 2.1% from oil and gas. Achieving these reductions will require a meaningful annual increase in investment. The energy use reduction goals for oil and gas call for the steepest and most sustained ramp up over time. If energy efficiency investments are constrained by lower benefit-cost ratios resulting from low natural gas prices and the failure to account for the true avoided costs of carbon, then the energy efficiency programs may not receive sufficient funding to deliver the carbon reductions called for in the 2020 Plan. The Department has an obligation to require the Program Administrators to submit programs and budgets sufficient to meet not only the requirements of the GCA, but the GWSA as well.[11]

---

[8] Jeff Schlegel, EEAC Consultant, DOER Informational Webinar, 2011 Regional Avoided Costs (AESC) Study: Implications for 2012 Energy Efficiency Programs and Avoided Carbon Compliance Costs for Massachusetts: Background and Two Potential Options (September 9, 2011).
[9] Id. at 14.
[10] Massachusetts Clean Energy and Climate Plan for 2020, at 18.
[11] "In considering and issuing … administrative approvals and decisions, the respective agency, department, board, commission or authority *shall* also consider reasonably foreseeable climate change impacts, including additional

clf
conservation law foundation

Choosing a reasonable value for determining the benefits of avoided carbon is necessary to meet that obligation. We agree with the Department's recent finding that "the marginal cost of complying with a particular policy objective represents the upper limit on cost-effectiveness for the purpose of achieving that objective." D.P.U. 10-54, at 85. It is certainly possible to develop cost curves that would indicate how much specific measures would cost, how much energy each could save, how much carbon they would abate, and what the highest value (the marginal cost per ton of carbon) would be. This process would generate the appropriate value to use in the cost-effectiveness screening tools. Energy efficiency provides us with an opportunity to mitigate the average cost of compliance by avoiding some of the more expensive carbon abatement opportunities, but if we do not attempt to quantify these costs, then we will under-invest in energy efficiency. CLF recommends that the Department, in consultation with the Department of Energy Resources and other stakeholders undertake an effort to develop Massachusetts-specific marginal abatement cost curves by holding a technical session on this issue as expeditiously as possible. However, in the interim, it is still possible to move forward and establish a value for avoided carbon so that development of the Three-Year Plans may proceed without delay and with some protection against the risks of potential under-investment in energy efficiency. We discuss a few of the options for doing so below.

---

greenhouse gas emissions, and effects, such as predicted sea level rise." G.L. c. 30, § 61 (as amended by St. 2008, c. 2008, § 7) (emphasis added).

clf
conservation law foundation

The AESC 2011 study suggested a long-term marginal abatement cost value of $80 per ton based upon a review of many studies looking at the cost of abatement internationally.[12] Notably, the $80 per ton value was at the low end of a spectrum that ranged as high as $273 per ton.[13] In addition, this value was based upon reaching a "sustainability target" of 450 ppm rather than upon achieving the GWSA mandates of 25% reductions in GHG emissions below 1990 levels by 2020 and 80% reductions in GHG emissions below 1990 levels by 2050.[14] The AESC 2011 also relied on studies that included strategies not readily available in Massachusetts, at least not on any scale that would be helpful in terms of meeting the GWSA mandates.[15] As a result, the $80 per ton value is specific neither to local energy conditions nor to the compliance strategies that are likely to be deployed to meet the GWSA. Therefore, although the AESC cost of $80 per ton is better than failing to include any value for GWSA compliance, it appears to significantly undervalue the benefits of energy efficiency measures.

As an alternative, some have suggested using a proxy value for avoided carbon, a value equivalent to the cost of renewable energy certificates ("RECs"), for example. Care must be taken with this approach. The spot market for RECs is quite volatile. Within the past year, we have seen spot market prices range from $12 to $50. Which price best reveals the long-term marginal abatement cost for carbon? We think that the latter comes closer, but still falls short, particularly given that REC prices are influenced by so many market factors that may be

[12] AESC 2011, at 6-97.
[13] Id. at 6-97, 6-98.
[14] Id.
[15] Id.

unrelated to the marginal cost of carbon abatement. Thus, CLF recommends against using RECs to set the value.

A more predictable option, which is more tied to Massachusetts conditions, is the Alternative Compliance Payment (ACP) rate associated with the RPS. The ACP heavily influences the cost of RPS compliance in conditions of relative scarcity – i.e., when renewable energy supply is not sufficient to meet demand – and is also not deemed to represent the long-run marginal cost of abating carbon. Still, the ACP does represent a value that the Commonwealth has determined is acceptable to be paid for the on a per-MWh basis to invest in clean renewable energy, which is one of the compliance measures contemplated by the 2020 Plan to meet the GWSA's mandates. Using the ACP associated with the RPS would result in an avoided cost of energy of roughly $112 per ton, a value within the range of studies evaluated in the AESC 2011, and certainly more reflective of conditions in Massachusetts. Neither the $80 per ton nor the $112 per ton ACP value is a perfect proxy for the marginal abatement cost, but either would be a reasonable substitute until the Department develops a Massachusetts-specific abatement cost curve for compliance with the GWSA. Importantly, the Department is not required to provide a perfect estimate of the compliance costs, rather it is simply required to develop a reasonable estimate of the anticipated costs.[16] The RPS is explicitly included in the 2020 Plan as one of the measures required to achieve compliance with the GWSA.[17] It is thus reasonable to anticipate that the cost of meeting the RPS will be within the marginal cost of compliance with the GWSA,

[16] See D.P.U. 10-54, 82 ("Nothing in the Supreme Judicial Court's decision suggests that costs must be precisely quantifiable for the Department to have authority to order their avoidance, so long as such costs are reasonably likely to be incurred.").
[17] Massachusetts Clean Energy and Climate Plan for 2020, at 40.

and CLF recommends using the ACP associated with the RPS as an appropriate proxy until the Department is able to develop a Massachusetts-specific cost abatement curve for compliance with the GWSA and the 2020 Plan. Until that time, the ACP (translated into a per-MWh rate) can simply be substituted for the current value being used in the cost-effectiveness analysis for both electric and gas energy efficiency programs.

In short, assigning a reasonable value to avoided carbon emissions will help set a new metric representative of the marginal benefit for energy efficiency for use in the screening tools. This will not mean raising energy prices by that amount. It will not even mean that the value will set the average cost of energy efficiency measures. In fact, the average price is expected to be considerably lower. We know now that energy savings are being realized for less than four (4) cents per kWh when the avoided cost cap is over fourteen (14) cents. So, instead of higher rates, what this new value *will* mean is that a more reasonable value for the cost of complying with the GWSA will be used to evaluate cost-effectiveness, and as a result, we can expect greater investments in energy efficiency that are likely to mitigate the long-term costs of complying with the GWSA. This is precisely the purpose for which cost-effectiveness analysis is intended.

Conclusion

CLF appreciates this opportunity to comment on this extremely important issue. We urge the Department to act as quickly as possible to establish a reasonable carbon-avoidance value so that the utilities will be able to incorporate it into the cost-effectiveness screening for 2013-2015 plans. As explained above, CLF supports the use of the ACP value of $112 per ton as the most reasonable proxy for use in the 2013-2015 plans. Of course, as new facts come to light regarding

costs, technology, markets and the implementation of the 2020 Plan and GWSA, the value for carbon will change. Therefore, we also recommend that the Department move forward now with a process for developing a Massachusetts-specific marginal abatement cost curve and continue to review that value from time to time to ensure that the reasonably anticipated costs of compliance with the GWSA are properly included.

Respectfully submitted,

Shanna Cleveland, Esq.
Staff Attorney
scleveland@clf.org